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International business operations and management: A model, a theory, and a success index

Dhammanungune, Somchai, D.B.A.

United States International University, 1992

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INTERNATIONAL BUSINESS OPERATIONS AND MANAGEMENT: A MODEL, A THEORY, AND A SUCCESS INDEX

A Dissertation

Presented to the

Graduate Faculty of the

School of Business and Management

United States International University

In Partial Fulfillment

of the Requirements for the Degree of

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Abstract of Dissertation

INTERNATIONAL BUSINESS OPERATIONS AND MANAGEMENT: A MODEL, A THEORY, AND A SUCCESS INDEX

by

Somchai Dhammanungune, D.B.A., Ph.D.

United States International University

Committee Chairman: Professor Frederick W. Dow, Ph.D.(Yale)

This study attempts to develop a conceptual framework to deal with operations and management in international business. An integration of related prior research findings, published between 1986-1991, was undertaken by employing matrix analysis and meta-analysis to provide a foundation for developing a model and formulating a theory. To develop a financial success index, factor analysis was employed to integrate three profit-related ratios, derived from a modified Dupont Model, using financial data of 598 cases from the global companies ranked in the Business Week's Global 1000 between 1987-1990. In the analysis of global companies, about 4,000 sets of financial data were categorized and computed for the new success index. The index trends were compared among 24 parent countries, and across four selected industry groups, i.e., automobile, beverages & tobacco, health & personal cares, and telecommunications. To test the hypothesis that a global

company's financial success is linearly related to its parent country's economic conditions, 14 economic indicators in 20 countries were chosen to test for linear relationships with the level of financial success index of each industry group by using multiple regression analysis.

Initially, matrices of relationships among variables in international business operations were obtained and used to construct a model of international business operations. A new business success measure was obtained and termed the Financial Success Index or FSI. In the analysis of the global companies, the FSI trends show different patterns of variations and add more depth when they are interpreted along with market shares and sales trends. Multiple regression results support the hypothesis that the level of a global company's financial success is linearly related to its parent country's economic conditions.

Finally, a Model of International Business Operations was fully developed, and a Theory of the Utility Exchange in International Business Operations was formulated to be applied as a conceptual framework for further research as well as for practical applications in business operations and management.

DEDICATION

To

Professor Frederick W. Dow, Ph.D.(Yale), F.R.S.A.

and

Professor Gary E. Popp, Ph.D.

International business is unquestionably a complex system of human enterprise due to the large number of involving variables and the high level of dynamics and uncertainty. To achieve a certain degree of accomplishment in both studying and practicing in the aforementioned complex system, accumulated knowledge and wisdom are inevitable. Professor Dr. F. W. Dow, with his expertise and practical experience in international management, strengthened and enriched my global perspectives and thus enabled me to materialize my idea into this piece of work. The late Professor Dr. G. E. Popp, with his expertise in international business and intercultural management, provided me with support and encouragement in 1989, at the time the seminal idea was conceived.

Professor Dr. Dow and Professor Dr. Popp are truly intellectual treasures, sources of knowledge and wisdom in international business and management. I would like to dedicate this piece of work to the two of them.

ACKNOWLEDGEMENTS

Transforming a mind set from one discipline to another could be an astounding challenge as well as an immense trauma because different research paradigms induce both complementary and conflicting mind settings that cannot be superimposed. Having been trained in sciences, engineering, psychology, linguistics and humanities, would have impeded my attempts to make a contribution to the body of knowledge in international business operations and management without the immeasurable support and encouragement from my committee chairperson, Professor Dr. Frederick W. Dow. His analytical mind, along with our mutual respect and admiration, helped me assimilate and advance the core of knowledge in international business. In the presentation process, Professor Dr. Frederick R. Korf, a well known devoted teacher to all his students, made invaluable comments for refining my presentation. Dr. Richard B. Harriff, a shrewd economist, made constructive criticisms which incited me to expand my study and thus discovered many interesting findings. My deep appreciation cannot be expressed by any word.

An enthusiastic aspiration, a definite determination, and an incessant perseverance were basic sources of energy used to complete this study. My greatest debt is due to the 412 authors cited, without whose scholarly works as a foundation, the commencement of this study would have been impossible.

TABLE OF CONTENTS

Chapter Page

Chapter Page

LIST OF TABLES

LIST OF FIGURES

Figure Page

Figure Page

Chapter 1

INTRODUCTION

Decision-making in international business is influenced by internal resources, stakeholders, company structure, goals and policies as well as by external factors in the global environment. Opportunities and threats operate in and beyond the boundary within which the inter-group and interpersonal relationships play a part, complicated by national and cultural differences. The complexity of international business is due to the multifarious dimensions of variables which influence business operations. The growing intertwined complexity necessitates business practitioners as well as government officers to mingle with a variety of data and information to draw a conclusion for decision-making or to find solutions to management problems.

A conceptual framework, in a form of a model or theory, could provide a foundation to integrate the tremendous amount of data and information needed for a comprehensive under-standing of the relationships of variables in international business. This study was an attempt to build a model, to formulate a theory, and to develop a measure of success, with an intent to produce a set of tools which may have a practical use for business practitioners to conduct international business, and for government officers to do planning and policy-making.

Background of the Problem

Buckley & Casson (1985) have noted that the growth of multinational enterprises has outdated the orthodox theory of production, trade and investment. Multinational enterprises do not respond to stimuli and to the environment in the same way as domestic companies. Success in domestic operations does not guarantee success or survival in international business operations. Thus, a theory of international business operations must be developed on its own foundation.

Between the 1960's and the 1990's, there were attempts to develop theories to deal with the expansion and complexity of international business (e.g., Buckley & Casson, 1976; Dunning 1981; Linder, 1961; Porter, 1990; Sharpe, 1964; Toyne, 1989; Vernon, 1966). However, those theories dealt with particular segments or sectors of international business operations, e.g., product-life cycle, technology transfer, external market development, and foreign direct investment.

Vernon (1986) maintained that the transactions that take place across the borders of any country affect every part of its economy. The progress in economic development for every economy in the 1990's lies in the ability to exploit opportunities in international business. Ditchl, et al. (1990) asserted that every nation, especially those that depend to a large extent on foreign trade, must be prepared

to exploit all their export opportunities. Some countries, e.g., Japan and France, have formal international policies and plans to pursue for the excellence in the global economy, while many countries are having difficulties to react to the uncertainty and risks resulted from the rapid change in the global economy.

In the past decade, the growing body of study on the global economy, multinational enterprises, and international business operations, covered a variety of aspects and segments or sectors of international business, e.g., marketing in the global economy (O'Conner, 1988), import impact and strategic response (Palia, 1990), human resource management in international operation (Brown, 1990). This growing body of knowledge in international business and related areas is sufficient to provide an integrated view from which a comprehensive model and a theory can be developed for both research and business practices.

Statement of the Problem

The awesome disparity between the colossal amount of information in the world of international business and the small amount of information a human mind can process at a time led to the attempt to develop a tool to handle this discrepancy for business decision making, planning and policy making. This research attempts to develop a conceptual framework to serve that purpose, i.e., to build a

model, to formulate a theory, to develop a success measure in international business operations, to demonstrate the versatility and applicability of the tool, and to test a set of hypotheses derived from the theory and model.

With the invention of a new success measure, the study was designed further to investigate the levels of success the global companies conducted international business, as compared among countries across four selected industries.

Predicting financial success is one of the major concerns in business operations. The proposed model of international business operations suggests that the level of financial success of a global company linearly relates to the economic conditions in its parent country. This hypothesis was tested in the present study.

Purpose of the Study

The central purpose of the present study was threefold, namely: 1) to use established research findings, along with the techniques of matrix analysis and meta-analysis, to identify variables and develop a matrix of relationships for constructing a model and developing a theory of international business operations; 2) to develop a measure of business success by employing empirical data from global companies; 3) to test the main hypothesis that there is a linear relationship between a global company's level of success and the economic conditions in its parent country.

Research Questions

1. By using matrix analysis and meta-analysis to review the findings of prior studies related to international business operations, what variables can be identified and synthesized to construct a model and to formulate a theory of international business operations?
2. By employing factor analysis to extract a common factor from profit-related financial ratios, using empirical data from the global companies, what measure can be developed to assess a company's business success?
3. Are there linear relationships between level of a global company's financial success and economic conditions in its parent country, and how does those relationships compare across selected industries?

Importance of the Study

This study neither claims nor attempts to complete an integration of the growing body of research findings in international business, although it is intended to contribute to such development. The attempt was to develop a new conceptual framework to deal effectively with the enormous amount of data and information in international business operations. It was hoped that the methods and the findings in this study would stimulate further attempts to refine and establish a grand model and a unified theory. These may provide a foundation for decision-making in

international business operations for multinational enterprises, on the one hand, and for planning and policy-making for governments, on the other.

Scope of the Study

The present study was aimed at developing a theory and model of international business operations by employing available secondary data and documented sources published between 1986 and 1991. The scope of study was confined to the domains of variables pertaining to the characteristics of the parent country, the host country, the global environments, and the characteristics of the multinational enterprises. The scope of study was confined also by the sources of empirical data used to develop a success measure. The financial data were sampled from the companies ranked in the Business Week's Global 1000 between 1987-1990. Twenty parent countries of the global companies were compared across four selected industries. Economic data and indicators of the parent countries were obtained from World Bank and UN publications, published in 1991.

Theoretical Foundation

Mercantilism

The economic philosophy put forward by a number of writers from approximately the fifteenth century to the eighteenth century was *Mercantilism*. It premises that a country's wealth was dependent on its holdings of treasure, usually in the form of gold. Trade was an integral part of this economic philosophy. Mercantilism was the first theory espoused trade (Daniels and Radebaugh, 1986). Later on, *Neomercantilism* was developed to explain the trade and economic phenomenon that some countries apparently tried to run favorable balances of trade--not to seek an influx of gold, but rather in an attempt to achieve some social or political objectives.

Theory of Absolute Advantage

Adam Smith (1776) in his book *The Wealth of Nations*, questioned the mercantilists' assumption that a country's wealth depends on its holdings of treasure. He said instead that the real wealth of a country consists of the goods and services available to its citizens. Smith developed the Theory of Absolute Advantage, which holds that different countries can produce different goods more efficiently than others. On the basis of this theory, why the citizens of a country should have to buy domestically made goods that they could purchase more cheaply from abroad? He claimed that

market forces, not government controls, should determine the direction, volume and composition of international trade.

Theory of Comparative Advantage

Ricardo (1817) developed the Theory of Comparative Advantage which holds that there may still be gains from trade if a country specializes in those products that it can produce more efficiently than other products without regard to whether or not the country has an absolute advantage. The principle of comparative advantage states that it will be beneficial for a country to specialize in production of the good in which it has a comparative advantage and to trade for the good in which it has a comparative disadvantage.

Factor Proportions Theory

Heckscher, Ohlin & Samuelson (1933) developed the Factor Proportions Theory. This theory states that a country will gain from international trade if it specializes in the production and export of products that require relatively more input of its abundant production factors and if it imports products that require relatively more input of its scarce production factors. The differences in countries' endowments of labor relative to their endowments of land or capital would explain differences in costs.

Recent Theories of International Trade and Investment

Product Life Cycle Theory

Vernon (1966) developed a theory based on a product-cycle model. The theory began with a reassessment of the reasons for American investment abroad, starting from the presupposition that market conditions in the United States with its size, wealth and relative sophistication made it suitable for the introduction of new products. The high cost of labour provided a further pressure to technical innovation which was labor-saving. The cycle itself comprises four stages; the new product stage in which the innovating firm produces and markets solely in the home country, the maturing stage in which larger markets and greater economies can be gained by exporting, the standardized product stage in which foreign producers gain an advantage by refining their production techniques and cause disadvantage to the original exporter, and the final stage in which the originally innovating firm ceases all production and serves the home market through imports from foreign subsidiaries. The theory of the international product cycle has two fundamental tenets. First, technology is a critical factor in product creation and development, and the existence of proprietary technology gives some firms advantages over others. Second, market size and structure are critical factors in determining trade patterns.

Country Similarity Theory

Linder (1961) developed a theory based on similarity of demand patterns. This theory holds that, having developed a new product in response to observed market conditions in the home market, a producer will then turn to markets that are perceived to be similar to those at home. It implies that consumers in industrialized countries will have a high propensity to buy high-quality and luxury products, whereas consumers in lower income countries will buy fewer of these products.

Portfolio Theory

The key development of this theory is generally attributed to Sharpe (1964) and Lintner (1965). This theory proposes that the multinational company in the role of banker using its funds to best advantage, both for making profits and for hedging against losses. A company may expect to allocate its resources, domestically or internationally, according to the level of return and risk available both in the long and the short term. This theory corresponds to the views of many managers, but the practice is usually constrained by other factors including an assessment of the risks involved. More is likely to be heard of this approach as risk analysis becomes more sophisticated.

Internalization Theory

This theory attempts to explain a distinction between the internal market, where goods and services are transferred within the company, and the external market in which the suppliers and customers are independent companies. The view is taken that investment follows when conditions make the internal market more profitable than the external. When the external market can provide goods or services more cheaply, the company will choose a non-investment method.

According to Buckley and Casson (1976), the internalization theory assumes that firm's objective is to maximize profits by using its competitive advantages. Firms perceive it to be in their best interests to internalize their use of competitive edges or extend their own direct operations which will make more profit than using external markets.

Eclectic Theory

John H. Dunning (1981), developed Eclectic Theory to explain foreign direct investment in an attempt to modify the internalization approach to recognize the different pressures that apply in different conditions. The theory rests on bringing together three kinds of advantage: (1) Ownership-specific (ranging from size and established position through proprietary knowledge to government

support); (2) Incentives for internalization (from ability to reduce costs associated with market dealings, to control of supplies and conditions of sale); (3) Location-specific (input prices, transport costs, infrastructure and so on).

The principal hypothesis of the theory is that a firm will engage in foreign direct investment if three conditions are satisfied: (1) The firm possesses specific advantages which its competitors do not have access to. These ownership advantages largely take the form of the possession of intangible assets, which are, at least for a period of time, exclusive to the firm possessing them. Such advantages are, for instance, proprietary technology, patented trademarks, managerial or marketing skills, etc.; (2) Foreign Direct Investment will occur only if the benefit of internalizing the ownership specific advantages is greater than for any other means of exploitation, e.g., licensing or outright sale of patent; (3) The host country comparatively provides the location-specific advantages. The firm finds it profitable to locate any part of its production facilities outside the home country. The decision will depend on the attractions of location specific endowments, namely, those which are not transferable across national boundaries. Host countries must have some location advantages compared with the home country, e.g., lower cost, cheaper raw materials, better investment incentives, etc.

In the absence of any of these three conditions the firm will tend to serve the foreign market through exports. Similarly the greater the degree to which the three conditions meet, the more likely is a firm to engage in foreign direct investment. Among the three conditions, the possession of ownership specific advantages is a necessary prerequisite for involvement in foreign direct investment (Dunning 1981). It embraces the three main vehicles of foreign involvement by enterprises; direct investment, exports and contractual resource transfers, for instance, licensing, technical assistance, management and franchising agreements, and suggests which route of exploiting is likely to be preferred. In the case of each modality, the possession of ownership advantages is a necessary prerequisite for foreign involvement. The presence of internalization advantages suggests that enterprises will exploit these advantages by the way of exports or foreign direct investment rather than by contractual resource exchanges; whereas the equity investment route, rather than by contractual resource exchanges; whereas the equity investment route, rather than exports, will be chosen where location advantages favor a foreign rather than a domestic production base.

Conflict Theory

This theory is derived from earlier behavioral theories of the complex organization. The theory does not deny the economic theories, but help to explain how underlying pressures are translated into corporate policies through the interaction of interest groups (Brooke, 1986). The theory holds that changes in organization occur as a result of conflicts of opinion and of interest that are built into the organization itself and are influenced by its environment. In the case of international companies this means that the company is exposed to a network of unavoidable conflicts between interest groups, some of which are internal to the company and some between the companies, or particular units, and outside interests.

Definition of Terms

The terms employed in this study, listed alphabetically, are defined as follows:

Balance of Payments - comprises all transactions involving a change of ownership of goods and services between residents of a country and the rest of the world. It includes merchandise, nonfactor services, and factor services. The primary sources are the files from the IMF's *Balance of Payments Statistics Yearbook*. The methodology is described in the Fund's *Balance of Payments Manual* (fourth edition). Supplementary data, usually most recent estimates, are obtained from national sources or estimated by World Bank (from *World Tables*, World Bank Publication, 1991).

Business Operations Dimension - a domain of variables categorized for a specific purpose in this study to integrate previous research findings to develop a model and theory of international business operations. The criteria to classify variables into this dimension are: (1) variables must be behaviors of people or activities of a company, (2) the variables must relate to international business operations. Variables in this dimension are, for instance, a decision on foreign direct investment, a subsidary staffing control, an overseas partner finding, a form of

market entry, a marketing strategy, a method of negotiation.

Business Outcomes Dimension - a domain of variables categorized for a specific purpose in this study to integrate previous research findings to develop a model and theory of international business operations. The criteria to classify variables into this dimension are: (1) variables must be the resultants of international business operations or the outcomes due to the effects of variables in international business environments, (2) the variables must show the level of accomplishment of a company in conducting business. Variables in this dimension are, for instance, financial success, volume of sales, failure of operations, negotiation outcomes.

Consumer Price Index - a ratio which reflects prices of goods and services used for private final consumption of households. For most countries, price indexes are implicit deflators derived from volume and value estimates (based year, 1987 = 100) (from *World Tables*, World Bank Publication, 1991).

Domestic Absorption - this category equals private consumption, and general government consumption, plus gross domestic investment (from *World Tables*, World Bank Publication, 1991).

Domestic Absorption Index - domestic prices for agriculture, industry, and manufacturing. In principle, it is the price index of value added. The deflator is derived by dividing current price domestic absorption estimates by constant price estimates. In this study, the constant price estimate used the based year 1987 = 100 (from *World Tables*, World Bank Publication, 1991).

Economic Indicators - the numerical values which reflect various aspects of the economic conditions of a country. According to the *World Tables*, 1991 World Bank Publication, these values were obtained by various methods of calculation employed by World Bank and International Monetary Funds. The primary source is the UN trade data system made available through the UN International Computing Center in Geneva. The UN trade data system accords with the UN *Yearbook of International Trade Statistics*; that is, the data are based on countries' customs returns (from *World Tables*, World Bank Publication, 1991).

Effect size - Glass (1976) proposed this term to be used in meta-analysis to refer to standardized mean difference between individual studies. Hedges & Olkin (1980) proposed the term "effect magnitude" to refer to differences between statistics other than means, e.g., correlations, proportions. However, the term "effect size"

is now being used as a generic term to indicate standardized differences, whether the differences are between means, correlations, proportions, or whatever.

Employment Index - average number of employees or persons engaged in employment during the year (from *World Tables*, World Bank Publication, 1991).

Export Price Index - price index measuring changes in the aggregate price level of a country's merchandise exports over time (from *World Tables*, World Bank Publication, 1991).

Factor Services - balance of payment which comprises services of labor and capital, thus covering income from direct investment abroad, interest, dividends, and property and labor income (from *World Tables*, World Bank Publication, 1991).

Foreign Trade (customs basis) - this term include exports and imports which cover international movements of goods across customs borders; generally, exports are valued f.o.b. (free on board) and imports are valued c.i.f. (cost, insurance, and freight) (from *World Tables*, World Bank Publication, 1991).

General Government Consumption - this term is the sum of (1) purchases, less sales, of consumer goods and services, reduced by the value of the own-account production of fixed assets, (2) compensation of employees, (3) consumption of fixed assets, and (4) any payments of indirect taxes (from *World Tables*, World Bank Publication, 1991).

Global Dimension - a domain of variables categorized for a specific purpose in this study to integrate previous research findings to develop a model and theory of international business operations. The criteria to classify variables into this dimension are: (1) variables must relate to international business operations, (2) the variables must be factors or constraints which influence business operations from outside the host country and the parent country of a company. Variables in this dimension are, for instance, international agreements (GATT, EFTA, etc.), a presence of war, an occurrence of the world resource crisis, a progress in the world technology, a regional unification.

GNP per Capita - The GNP per capita figures are calculated according to the *World Bank Atlas* method of converting data in national currency to US dollars. In this method, the conversion factor for any year is the average exchange rate for that year and the two preceding

years, adjusted for differences in rates of inflation between the country and the United States. This averaging smooth fluctuations in prices and exchange rates. The resulting estimate of GNP in US dollars is divided by the midyear population to obtain the per capita GNP in current US dollars (from *World Tables*, World Bank Publication, 1991).

Gross Domestic Investment - equals the sum of gross domestic fixed investment and the change in stocks (from *World Tables*, World Bank Publication, 1991).

Host Country Dimension - a domain of variables categorized for a specific purpose in this study to integrate previous research findings to develop a model and theory of inter-national business operations. The criteria to classify variables into this dimension are: (1) variables must relate to international business operations, (2) the variables must be factors or constraints which influence business operations from within the host country where a multinational enterprise enter to conduct business. Variables and constraints in this dimension are, for instance, tax and duty rates, foreign investment regulations, host country's trade policy, cultural differences, host country's accounting requirements.

International Business - any business which involves the crossing of national borders. This includes not only international trade, investments, and foreign manufacturing but also the growing service industry such as tourism, transportation, telecommunication, banking, and advertising (Ball & McCulloch, 1990).

International Reserves (excluding gold) - comprise country's holdings of monetary authorities (central banks, currency boards, exchange stabilization funds and treasures) holdings of SDRs, reserve position in the Fund, and foreign exchange (from *World Tables*, World Bank Publication, 1991).

Manufactures - a foreign trade value which comprises commodities in SITC revision 1, Sections 5 through 9 (chemicals and related products, basic manufactures, machinery and transport equipment, other manufactured articles and goods not elsewhere classified) excluding Division 68 (nonferrous metals) (from *World Tables*, World Bank Publication, 1991).

Matrix Analysis - an assessment of the matrix emerging from an analytically arranged array of information from a number of studies, permitting an integration of several findings. There are two ways to analyze such a matrix: (1) analyzing a finding across a set of studies to derive a

review finding (see below), and (2) analyzing the validity threats to the set of studies to estimate the validity of the findings (Salipante, Notz & Bigelow, 1982: 325).

Matrix Creation - a method of arraying information from a number of studies into a form allowing integration of findings. The matrix has three dimensions. One dimension identifies the studies. The second dimension categorizes the findings themselves. The third dimension evaluates any threats to the validity of each of the individual finding (Salipante, Notz & Bigelow, 1982: 324).

Merchandise (f.o.b.) - the balance of payment which comprises the market value of movable goods, including nonmonetary gold. It also includes the market value of related distributive services up to the customs frontier of the exporting economy, that is, fob (free on board) value. The few types of goods that are not covered by the merchandise account include travellers' purchases abroad, which are included in travel, and purchases of goods by diplomatic and military personnel, which are classified under other official goods, services, and incomes (from *World Tables*, World Bank Publication, 1991).

Meta-Analysis - an analysis of analyses, this term was used by Glass (1976) to refer to the statistical analysis of a large collection of analyses resulted from individual studies for the purpose of integrating the findings. It connotes a rigorous alternative to the casual, narrative discussions of the individual, independent research studies which have typically characterized the attempts to make sense of the rapidly expanding research literature.

Multinational Company (MNC) - this term is used interchangeably with multinational enterprise (see below).

Multinational Enterprise (MNE) - this term defines any firms or organizations, characteristically made up of a parent firm located in one country and a cluster of affiliated firms located in a number of other countries. According to Vernon (1986) the common characteristics of these firms are: (1) they are linked by ties of common ownership, (2) they draw on a common pool of resources, such as money and credit, information and system, and trade names and patents, (3) they respond to some common strategy.

Nonfuel Primary Products - a foreign trade value which comprises commodities in SITC revision 1, Sections 0,1,2,4, and Division 68. The products include food and live

animals, beverages and tobacco, inedible crude materials, oils, fats, waxes, and nonferrous metals (from World Tables, World Bank Publication, 1991).

Overall GDP - the implicit deflator which is the ratio of current and constant price estimates of relevant aggregates. The deflator is derived by dividing current price estimates of GDP at purchaser values (market prices) by constant price estimates (based year, 1987 = 100) (from *World Tables*, World Bank Publication, 1991).

Population - total population - midyear estimates (from *World Tables*, World Bank Publication, 1991).

Parent Country Dimension - a domain of variables categorized for a specific purpose in this study to integrate previous research findings to develop a model and theory of inter-national business operations. The criteria to classify variables into this dimension are: (1) variables must relate to international business operations, (2) the variables must be factors or constraints which influence business operations from within the parent country of a multinational enterprise. Variables and constraints in this dimension are, e.g., tax rates, export regulations, international trade policy, interest rates and capital costs, economic conditions.

Private Consumption - equals the market value of all goods and services purchased or received as income in kind by individuals and nonprofit institutions. It excludes purchases of dwellings, but includes the imputed rent of owner-occupied dwellings. The line is called Private consumption, etc. because it includes any statistical discrepancy in the use of resources. At constant prices, it also includes the rescaling deviation from partial rebasing (from *World Tables*, World Bank Publication, 1991).

Review Finding - a general conclusion drawn from a systematic integration of the literature review of a number of individual and independent research studies which used the same or a similar set of variables.

Reviewer - a person who conducts a systematic review of a number of individual and independent research studies in order to find the general conclusion of a specified topic.

Terms of Trade - the relative level of export prices compared with import prices, calculated as the ratio of a country's index of average export price to the average import price index (from *World Tables*, World Bank Publication, 1991).

Utility Exchange - a term used in this study to conceptualize a mutual fulfilment of a party's and the counterparty's needs and expectations through a flow of goods and services in international business transactions. This construct is proposed to apply to the decision in international business operations in which the monetary reward is not the only type of rewards or outcomes expected and received by the parties who conduct international business. The concept is derived from the works of scholars in the area of utility and utilitarianism (see, e.g., Alt, 1971; Bentham, 1823; Samuelson, 1977; von Newmann & Morgenstern, 1947). The types of utility exchange are, for instance, accessing to the world market, gaining of power and control, transferring of advanced technology, creating reputation, reducing anxiety and a fear of failure.

Value of Exports (f.o.b.) - a foreign trade value which covers international movements of goods only across customs borders. Exports are valued f.o.b. (free on board) with some exceptions (from *World Tables*, World Bank Publication, 1991).

Chapter 2

REVIEW OF THE LITERATURE

The Past and Present States of International Business

International Business in the Past

The history of international business can be traced back even before the time of Christ. For instance, in the middle of the third century B.C., Ceylon set a special quarter of its capital for Ionion merchants. In the tenth century B.C., King Solomon sent his galleys to Ceylon to purchase gems, elephants, and peacocks to woo the Queen of Sheeba. Marco Polo went to Asia in 1271 as a merchant and jeweler (Barraclough, 1988).

International trade and the international firm are not new aspects of business. The British East India Company, a trading firm chartered in 1600, established foreign branches, as did a number of American colonial traders in the 1700's. Colt Fire Arms and Ford established their English plants before the Civil War. The first successful American venture into foreign production was the Scotch factory built by Singer Sewing Machine in 1868. By 1880, Singer had become a worldwide organization with an outstanding foreign sales organization and several overseas manufacturing plants (Ball & McCullough, 1990).

By 1914, at least 37 American companies had production facilities in two or more overseas locations. At that time, the book value of U.S. foreign direct investment was 2.65 billions of US dollars, or about 7 percent of the nation's gross national product (Wilkins, 1970).

Among the firms already established overseas were national Cash Register and Burroughs, with manufacturing plants in Europe; Parke-Davis, with a plant near London (1902); and Ford Motor Company, which had assembly plants or distribution outlets in 14 countries. General Motors and Chrysler followed soon afterward, so that by the 1920's, all three companies had sizable foreign operations. General Electric, by 1919, had plants in Europe, Latin America, and Asia (Wilkins, 1974).

In the last two centuries, although American firms were by far the largest foreign investors, European companies were also moving overseas. For instance, Friedrich Bayer purchased an interest in a New York plant in 1865, two years after setting up his plant in Germany. Due to high import duties in his overseas markets, he proceeded to establish plants in Russia, France, and Belgium (Tugendhat, 1972). Other European companies, for example, Unilever (Dutch-English), Nestle (Swiss), Phillips (Dutch), Royal Dutch Shell Group, and Imperial Chemical (English) were also becoming established in various foreign countries.

The aforementioned historical evidences clearly illustrate that international business has a long history. However, the twentieth century international business has a short life-cycle. Although multinational firms existed well before World War I, the explosive growth in both size and number of U.S. and foreign multinational companies in the last three decades contributes to the rapid changes international business in the present global economy. A study made by the European Community (EC) in 1976 estimated that approximately 10,000 multinational firms existed worldwide - 4,534 in Europe and 2,570 in the United States. A good surrogate variable, which indicates the growth of global and multinational companies, was the increase in total foreign direct investment. It has gone from 105 billions of US dollars in 1967 to 776 billions of US dollars in 1987, a sevenfold increase in just 20 years (Rolfe, 1989). The 1990 world composite sales made by global companies ranked in the Business Week's Global 1000 was 7,211 billions of US dollars.

Across-Continental Movements of International Business Operations Towards Globalization

Burr (1989) reported that according to an international business climate forecast produced by Political Risk Services, of the 85 countries that were surveyed, the best four countries were Singapore, Norway, the UK, and Germany. Hong Kong offered a far better market for commerce during the next 5 years than the US, Canada, Japan, and practically all the rest of the world. In contrast, the news of reform emanating from the USSR and Eastern Europe has had generally no influence on improving the rating of that region, despite the popular optimistic perception.

Hammerly (1990) criticized that from 1945 to the late 1960's, the U.S.A. enjoyed an unusual advantage in international business competition. As a result of the success of its foreign policy, which was designed to speed the recovery of Europe and Japan, the US no longer dominated world business. Although the nation's economic engine had not broken down, there was a concern about the ability of the U.S.A. to compete in the future.

Hayden (1989) reported that a 1989 American Management Association survey of Forbes 500 US companies suggested that most top managements were convinced that global markets were essential to their future. However, they were angry and

frustrated over unfair or inept access restrictions, and they had trouble coping with a range of problems covering strategic planning, marketing, financial controls, local administration, and human resources issues. The consensus, at least among US managers surveyed, was that companies must be where the market is, not serve them from home. Putting this precept into practice can be tough on hometown America. According to the survey results, companies were increasingly moving to position their investments in accordance with the most promising growth patterns.

Dowling (1990) stated that international business attention has been focused on the market opportunities in Eastern Europe and the USSR because of the recent political developments in Eastern Europe and the planned reunification of Germany. These developments posed a real danger to US businesses that may think that movements toward a unified European market would be slowed or even halted. The process of developing a European market by 1992 was proceeding. The potential clout of a single market of 320 million people had created fears of a new economic powerhouse ready to compete with the US and Japan or a Fortress Europe, which may use the 1992 developments to break down internal trade barriers but build new external ones, further worsening the US trade deficit. The complexity of technical standards would exclude the US from the European Community markets.

Coulson (1990) reported in a survey study covered most chairmen and chief executive officers of 100 organizations. Respondents expressed a wish to be European but within the context of a carefully thought-out international business strategy. Being able to meet the demands of a global market, rather than just those of Europe, was the key issue for larger companies as 1992 approached. In securing access to 1992 skills and knowledge, new patterns of work were going to become mandatory. The type of skills that would be sought included an ability to communicate and adapt quickly to local circumstances. Great difficulty was experienced in identifying relevant expertise. It may be necessary, for example, to bring multi-locational or multinational teams together to confront European issues.

Greer (1989) stated that the European Community's directive on product liability represented an extremely important change in the legal environment of business. All 12 member states must revise their laws and meet the directive's standards and spirit. The directive was important not only because of the highly significant changes it presented to multinational firms operating in Western Europe, but also because it was an outstanding example of the trend toward more supranational business law. Moreover, it represented a considerable accomplishment of the consumer movement. The wording of the directive establishes the

principle that, once a defect has been found, it is rebuttably presumed to have existed at the time it left the producer's hands. Defects in product design, manufacturing, and product warnings may all be the basis of liability. Appropriate defendants include producers of finished goods, manufacturers of components incorporated into the product, and producers of the raw materials used.

Conway (1989) reported that the European Community (EC) was gradually dismantling its internal trade barriers in an effort to create a unified trading market by 1992. In order to achieve true unity and to maximize the benefits of a united Europe, the EC must achieve economic and monetary integration. The European Monetary System (EMS) was begun in 1979 to address the need for a common unit of account and coordination of monetary policy among member states. The European Council created the European currency unit (ECU) with the intent that it plays a central role in the EMS. Because the ECU has been successful and was used in transactions between Community institutions, there was heightened expectations among industrial leaders and heads of states for complete monetary integration within the EC.

In the U.S.A., Grover (1991) reported that foreign companies went to Hollywood in 1990 to takeover some studios because they were lured by the booming international market

in videocassette and compact disks that feature US stars. By the end of the year, only 3 of America's 7 largest studios were still US-owned. Many US entertainment companies also want to get in on the foreign market, which was being fueled by strong home video sales in Europe, plus the privatization of European television stations and the launch of a new satellite-delivered TV system.

In England, according to the *Economist*, Vol. 317, Iss. 7678, 1990, politicians and businesspeople in Birmingham, the UK's 2nd-largest city, strived to build the city anew and sent it fresh into the 1990s. Birmingham's new International Convention Centre was the biggest in the country. A group of the city's large financial and legal firms had set up a campaign called Birmingham 2000 to promote it as a city for international business.

Joseph reported that Greece's strategic location, stable democratic political system, and membership in the European Community made the country a positive investment prospect for foreign investors. To encourage foreign investment, government assistance was available, administrative procedures had been somewhat reduced, and the full remittance of profits was possible for all EC and non-EC nationals. As a member of the EC, Greece can provide investor access to the European market. Increased

competition resulting from EC membership was forcing Greece to become more competitive. Internal policy changes within the past 2 years have had a dramatic effect on the foreign investment climate in Greece. Community funding was available to foreign investors for developmental projects. Prospects for foreign business would continue to improve if EC aid and government modernization projects were developed as planned.

Wallenberg (1988) stated that Sweden was able to survive in the modern world and provide for itself in a way that was intended to give its people one of the highest standards of living. Sweden's most prominent export articles (forest products, automobiles, and mechanical engineering products) show that even a comparatively modest production of automobile products can be very important to a smaller nation. Employment always has been a priority for Sweden. During this century, Sweden's main economic concern has been staying competitive. Sweden has to consider Europe, with its relatively high individual purchasing power, as the most significant geographical area upon which to focus its markets. To many Swedish industries, the U.S.A. has been the most desirable and the most elusive market. The fate of the U.S. economy was of overwhelming importance to Europe in general and particularly to Sweden because of its profile of international business dependence.

Clow & Morton (1989) reported that legal work steadily increased in Sweden, and law firms had expanded. There had been a trend toward specialization in both large and small firms. Auditors become competitors in the field of tax law. Some Swedish firms had foreign offices, while others were exploring cooperation or mergers with foreign firms. The legal profession in Norway was small, traditional, and unified. Shipping was the main source of international business. The volume of international business in finance, mergers and acquisitions, and the stock exchange was low. Corporate legal departments had been strong in Finland, but legal departments had not grown. International business increased rapidly, and few lawyers had sufficient experience to deal with it.

Dowding (1990) studied Winterthur, a company with the largest share of the prosperous market in Switzerland. Winterthur had a strong base for its international business. The company was in the forefront of response to the nonlife European Community (EC) Directive on the freedom of services. Its Belgian company would serve as the vehicle for placing large industrial risks; the decisions and underwriting would be made centrally from Switzerland. Winterthur maintained that the local claims handling and servicing would be very important to the EC.

Brank (1989) reported that in January 1989, four new joint venture laws came into effect in Eastern Europe. The new laws could be seen as a response to recent joint venture legislation in the USSR and as a necessity brought about by the failure of the old laws to attract sufficient foreign investment. The changes to the joint venture laws were revolutionary in character for Eastern Europe and may signal a permanent shift away from the centralized economies that existed in the Eastern bloc for nearly 40 years.

Ojala (1991) concluded that with the Communist regime out of existence and the ascent of capitalism in Eastern Europe, there was a need for business information on Eastern Europe.

In Hungary, Eichmann (1988) reported that the recent liberalization in Hungary's economic and political structure resulted in a dramatic increase in joint ventures in Hungary. Extensive legal and economic reforms made the joint venture system more predictable and potentially more profitable. The Hungarian experience offered some guidance for foreign equity ventures in a socialist country. Prices should be set by the market instead of by politics, and price subsidies should benefit exporters. Subsidization of consumer goods keeps wages low and is advantageous for labor-intensive businesses, while subsidies that keep the

prices of inputs low are favorable for manufacturing. Export sales, profit repatriation, and statutory investment protection measures will alleviate foreign fears and increase investment. Simplification of registration and business procedures, along with other legal reforms and tax incentives, are vital, as well as reforms to rationalize the economy.

Rowley, et al. (1990) reported that Japan sufferred from a collapse in asset values so profound that it threatened the integrity of the country's financial institutions. Because Japan predicated so much of its financial prosperity and, institutional growth upon asset inflation, it was questionable whether Japanese banks and other institutions could continue to occupy the heights of international finance. The margin of profit over expenses, the lending spread for the 12 major Japanese commercial or city banks, has been declining since 1975 to the point where it actually became negative by 1990. Although the Tokyo market for new issues and the market for Japanese equity-warrant bonds in London were reopened at the end of July 1990 after several months' moratorium, issue activity was very low compared to the boom market conditions of 1989.

Lee (1990) studied Korea First Bank's international business which was primarily for opening letters of credit

for trading companies. Korea First Bank took an important step into international banking by coarranging a US$ 180 million syndicated loan for Sammi Steel Canada in 1989. The bank's balance sheet has been an aid to its international push. The total assets rose to US$ 18.3 billion, compared to US$ 16.6 billion in 1988. It has taken nearly a decade to launch an international banking division, with foreign-exchange trading and merchant banking.

In India, Nair (1988) reported that the improvement in economic policies and liberalized import policy resulted in increased foreign investment and economic gains. In 1985, the Five Year Plan was initiated with the goal of developing more export-oriented business ventures. As a result, export-oriented businesses were given special import concessions and companies were encouraged to increase their equity investments. Several types of international business transactions were available. These include: 1. licensing agreements, 2. joint venture agreements, and 3. free trade zones. Once a project was approved by the Central Indian government, consideration should be given to intellectual property protection, payment of taxes, and arbitration to settle business disputes.

In the Peoples' Republic of China, Dalton (1990) reported that The Ministry of Foreign Economic Relations and

Trade (MOFERT) coordinated management training institutes. The University of International Business and Economics (UIBE) was established to provide skilled personnel for MOFERT. The curriculum features courses in market economics and Western management styles to interface with the world economy. UIBE's transformation was the result of its adoption of Western texts and curricula, training of young faculty members, and expansion of educational scope. However, the gap between teaching and application in China can be great; many students complain of being overeducated and underused. Cultural differences and politics also hamper efforts. The Western orientation provides opportunities for foreign companies in China to promote their own and China's long-term interests.

Brown (1990) reported that Communist bloc managers, by the dozens, went to where business was taught and practiced. Babcock is the first U.S. business school to establish a program. The Soviets identified the courses they wanted, including marketing and organizational behavior. Business leaders from other communist countries also come to the U.S.A. to study. Eastern Washington University, with a grant from the U.S. Information Agency, sponsored a delegation of 14 Soviet bloc managers and academics for a 2-week seminar, focusing on management training techniques that work in the U.S.A. Management schools were launched in

the USSR. Moscow International Business School was one promising example. The schools' primary goal is to teach students how to establish a successful joint venture.

In the U.S.A., Owen (1989) examined the Omnibus Trade and Competitiveness Act of 1988, in which Congress addressed the education issue in Title VI, "Education and Training for a Competitive America Act of 1988," which authorized specific expenditures into programs to improve literacy, foreign language instruction, mathematics and science instruction, and drop-out prevention. Owen argued that nation's international competitiveness requires a strong and effective educational system, particularly in the current era of high technology. However, the trade bill fails to give a sense of direction as to how education must improve in order for the US to compete in the international business arena.

In Latin America, Grosse (1988) reported that the transfer problem of Latin American debt disrupted international business in the region, and borrowers there faced greater debt-servicing burdens than they did during the Great Depression of the 1930s. The problem was mitigated by the fact that the industrialized nations were out of their recession, therefore, the demand for Latin American exports and the willingness to invest in Latin

America had not fallen as far as they did in the 1930s. There was a need to transfer real purchasing power. Policies that stimulate Latin American exports, foreign direct investment, and agreements by lenders to reduce charges for funds on loan would encourage Latin American nations to continue paying. Lending for government projects could be renewed if government borrowers could agree on some form of collateralized borrowing.

Leavy (1988) reported that the movement for economic integration in Latin America resulted in Decision 24 of the 1969 Andean Pact which gave top priority to a common policy on foreign investment and technology transfers. Decision 24, which provided some flexibility, was still controversial. It was not welcomed by the international business community and was not universally popular even among local businesspeople. A review of the strains of this provision and the inroads made by Andean countries in its application illustrate how in 1987 Decision 220 was adopted. It gives national governments virtually unlimited discretion over important aspects of foreign investment policy. National legislation in this area has assumed much greater importance. Aspects of Decision 220 legislation involve: 1. reserved sectors, 2. profit remittances, 3. purchases by foreign investors of shares or participations held by local investors, and 4. reinvestment limits. Actions by Peru in

this area brought about a break between it and its Andean Pact partners.

In Singapore, according to the Asian Finance 1989/1990 Supplement Issue, the foreign reserves reached 33.3 billions of Singapore dollars in 1988, up from 30.4 billions in 1987. Singapore had a vision of becoming a leading international business and financial center as well as a premier technology and resource center for the region. To compete with the Republic of Korea, Taiwan, and Hong Kong, Singapore must carefully manage its only available resource: its people. The government, in power since 1959, has been laying the groundwork for industries that it expects to emerge in several areas, including biotechnology, microelectronics, and information and communications technology. This drive toward a high-technology environment began in 1979 when a decision was made to redirect Singapore's industrial focus toward automation and higher skilled industries. Its research and development (R&D) policy focuses on upgrading the design and development potential of existing industries and developing expertise in the emerging technologies.

As for the future of Australia, Goldstein (1990) wrote about the concept of Multi-function Polis (MFP), Australia and Japan's joint city of the future, which involved

building a high-technology 21st century city in a still-undetermined location in Australia. The MFP would combine the best of Australia's strength in human resources and environmental sciences with Japan's capital and technology. If approved, construction on the MFP could begin as early as 1991 or 1992, although officials were adamant that no public money be spent. Start-up costs alone for what eventually would become a city of some 250,000 people could be as high as 2.5 billions of Australian dollars. Over a 20-year to 30-year period, about 40 billions more could be required. Supporters hope to establish a new model of international collaboration in key sectors, for instance, telecommunications, information services, media, and entertainment. The project's viability depends on international business to choose Australia as its launching point into the Asia-Pacific region.

In the Philippines, Rabecs (1990) reported that the Comprehensive Agrarian Reform Program (CARP) signed in June 1988 would affect foreign agribusiness ventures. The CARP sought to redistribute 6.9 million acres of agricultural land to more than two million landless farmers over the 10 years of its implementation. Two large, foreign-controlled multinational corporations (MNC), Dole and Del Monte, have leased thousands of acres of publicly owned lands for years. Because these large tracts of land were subject to

redistribution, the land could no longer be leased directly from the government. Consequently, large foreign agribusiness ventures face the prospect of higher costs and reduced productivity. Despite initial anxiety and misgivings about the economic viability of continuing their Philippine operations, most agriculturally based MNCs were considering alternatives that will enable them to remain in the country.

In Africa, Henley (1989) criticized that the past and future of trade unions were inextricably bound up with changes in the political economy of particular countries, the labor market, the ownership and control of industry, and the global strategies of international business. No African economy was large enough to be run efficiently on the basis of its own internal resources. The forces of protectionism and rent-seeking, liberalization and entrepreneurship were fairly finely balanced at that time. In the struggle for economic reform, the state was unlikely to be tolerant of trade union demands and would, in all probability, impose further restrictions on trade union freedom.

Hawkins (1990) warned that the situation in South Africa meant rethinking corporate strategy not just toward South Africa, but toward the entire region. South Africa had a very powerful resource base and was better endowed

than any African competitor with human skills, technological expertise, and infrastructure. However, even if the political transformation was smooth, South Africa was a relatively high-cost producer, and its industry would have to become more competitive. South Africa's difficulties would be exacerbated because it needed to reequip industry and invest heavily in technical and vocational training while satisfying politically driven demands for more equitable pattern of income and land and wealth redistribution.

Levin (1989) stated that the dramatic increases in international advertising spending lead major US agencies to reorganize to get better management, more services, and better profits from their overseas operations. Much of their attention was focused on Europe, where the removal of panregional marketing barriers by 1992 caused account consolidation and market expansion. Mid-sized and smaller agencies also were trying to increase their international presence. Concern about continued revenue growth was a major factor spurring this rethinking, as international business represents an ever-growing percentage of agencies' revenues.

Farinelli (1990) stated that public relations in Europe and Japan grew rapidly. London was the capital of public relations activity. US public relations was sufferred because of industry provincialism and failure to adapt to the increasing globalization of industry and communications. More companies were selling products and services abroad, and would be dependent on international trade for prosperity. U.S. practitioners must develop new perspectives on public relations at the international level. Failing to meet this challenge would result in U.S. public relations losing its leadership position in the world and a great deal of international business.

Taylor (1990) stated that the internationalization of business markets and the increasing volume of international business presented opportunities for insurance agents. Only a few U.S. agents were committed to the international market and had experience to properly underwrite the business. Agents should look for carriers with long-term commitment and the proper reinsurance, as well as adequate size and stability.

King (1989) reported that seven U.S. insurers were licensed to do business in the Republic of Korea, and dozens of other U.S. insurance companies were aggressively looking for new markets across the globe because the US market was

saturated. The U.S. accounts for 40% of the nearly 900 billions of U.S. dollars in premiums collected by the world's insurers in 1986, but there was still room for profitable growth overseas. Even if U.S. insurers could overcome the cultural differences and regulatory hassles associated with doing business abroad, it would take years of hefty expenses before profits were realized. Nevertheless, insurers were still lining up to enter such markets as Taiwan, Hong Kong, and Japan. Of all the international markets, Japan was considered the biggest. Japanese consumers carried more life insurance than Americans, and the Japanese economy kept growing. The Japanese insurance companies were among the largest in the world and taking business away from them would be very difficult.

La Blanc et al. (1989) reported that the international transatlantic telecommunications market was on the brink of explosive growth. The demand for telecommunications services was felt throughout Europe. An accelerating trend toward the internationalization of businesses was a major determinant for the rapid growth in international telecommunications. It was critical for many companies to be able to operate on multinational levels with offices and business relationships throughout the world. As business customers internationalize their operations, long distance

providers must offer new international services, especially ones that extend the domestic services with which the business customer is already familiar.

O'Connor (1989) stated that transborder data flow (TBDF) was an area of growing significance in international business, and national restrictions were being placed on TBDF for a variety of reasons. In some countries, the rationale for restrictions was security of information about their people. In other areas, restrictions were based on a country's realization that TBDF encroached upon its ability to restrict movements of information into and out of the country and to monitor and regulate those flows. Taxation of TBDF will go through three stages. In the first stage, the multinational company probably had an advantage, because tax authorities did not focus on the important aspects of the issue. In the second stage, the multinational corporation would probably be the victim of the inefficient handling of the taxation of these activities, and in the third stage, a middle ground would be reached, with more sophisticated concepts of measurement and presence. Further research is required into the amount of activity taking place on a worldwide scale. TBDF will be a substantial revenue generator for the more sophisticated tax jurisdictions.

Chadwick (1990) reported that the large U.S. database producers and online services had been adding sources and new databases that focus on international business, but these services still fail to meet the specialized needs of most exporters. A growing number of state agencies, nonprofit organizations, and entrepreneurs begun to provide online services specifically tailored to meet the international business needs of their clients. The trade information service (TIS) was the newest concept. TISs were user-friendly and limited in scope, carrying only the information that their clients want.

Kreisberg & Blaney (1988) stated that the growth of acquired immune deficiency syndrome (AIDS) since 1970 was small compared to the predictions for additional disease growth within the next few years. In addition, concern about AIDS caused people to change their fundamental social habits. As a result, several countries considered or have already imposed AIDS test requirements for people entering their territory. The Council of Europe, conscious of the implications such testing would pose for international business and foreign travel, urged that there would be no such testing for temporary visitors. However, interested groups in the U.S.A. and other countries continue to push for testing for long-term foreign business residents, students, and others. The question of the economic cost of

the epidemic remains a major concern to businesses.

Swanson (1990) maintained that the massive expansion of global contacts in the 20th century has mandated the creation of dispute resolution mechanisms for international business conflicts. Three of the most important agreements, to which the U.S.A. was a party, were the United Nations Convention on the Recognition and Enforcement of Foreign Arbitral Awards, the Hague Convention on Service Abroad of Judicial and Extrajudicial Documents, and the Hague Convention on the Taking of Evidence Abroad in Civil or Commercial Matters. Since 1985, the Supreme Court has interpreted the provisions of all three conventions as they apply to litigation in U.S. courts. The cases gave the Court an opportunity to create a coherent jurisprudential framework on which to base decisions relating to international dispute resolution. Each of these cases implicated the doctrine of comity, the goal of which was to further the interests of international cooperation by recognizing the systemic value of reciprocal goodwill.

Adler (1989) reported that on two occasions, Congress had withheld foreign aid assistance from countries accused of expropriation by US investors and appointed a fact finder to evaluate the expropriation claims. The fact finding process is a significant departure from standard

international claims practice because it circumvents the rule of exhaustion of local remedies. Several alternatives to the fact finding process that could be employed were: 1. an Inter-Agency Expropriation Group determination, 2. a determination by the Foreign Claims Settlement Commission (FCSC), 3. arbitration under the auspices of the International Centre for the Settlement of Investment Disputes (ICSID), and 4. a more strict enforcement of the exhaustion rule.

Noback (1989) stated that the following four legal areas have important consequences in the management of foreign exchange risk in international business transactions: 1. the "Act of State" doctrine, 2. Article VIII, Section 2(b) of the Articles of Agreement of the International Monetary Fund (IMF), 3. Uniform Commercial Code (UCC) Section 2-614(2), and 4. the currency in which a judgment in the forum state may be rendered. According to the Act of State doctrine, the place of payment is a key factor in determining the degree of risk assumed in foreign exchange transactions. The IMF Treaty, then in force among more than 150 countries, was of major importance in governing relations among those countries with respect to the management of their currencies and economies. The international commercial contract should contain a choice-of-law clause, even in cases where disputes were to

be resolved by arbitration. Generally, foreign parties were not reluctant to agree to the application of the UCC. Existing US case law supports the traditional US view that US courts are required to render money judgment payable in US dollars.

De Enterria (1990) stated that systems of law throughout the world recognized the concept of public policy in private international law. The public policy concept has gained particular significance in the field of international commercial arbitration resulting from the widespread use of arbitration clauses in international transactions. A state, rather than the parties, retains final control in any international arbitration. The public policy exception is contained in Article V, Section 2(b) of the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards. The purpose of the New York Convention was to reconcile among the contracting states provisions for the acceptance of arbitration clauses and awards rendered in international arbitration. Public policy seemed more important in theory than in the practice of international commercial arbitration. The trend was toward reducing the scope of the public policy exception as more nations accepted international commercial arbitration as a means of dispute resolution.

Karen (1990) stated that there was a worldwide desire for international harmonization of patent protection. In addition to other benefits, patent harmonization would be a means of reducing the costs associated with international patent protection for all nations. The World Intellectual Property Organization (WIPO), an agency of the United Nations, organized negotiations in Geneva for the purpose of establishing an international convention on patent harmonization. At first, there was little progress due to the issue of the first-to-invent system of patent entitlement (used by the US, Canada, and the Philippines) rather than the first-to-file system (used by the rest of the nations). In March 1987, the U.S.A. announced that it would be willing to consider adoption of a first-to-file system if it were part of a balanced harmonization treaty. It was argued that this switch to the first-to-file system, although costly in the short term, will be beneficial to the U.S.A. in the long run, particularly if it is accompanied by the international adoption of stricter patent protection standards.

Multinational Enterprise's Operations in the Global Environment

A multinational enterprise (MNE) is an organization which has a worldwide approach to foreign markets and production and an integrated global philosophy encompassing both domestic and overseas operations (Daniels & Radebaugh, 1986). The term "multinational enterprise" is used interchangeably with "multinational corporation" (MNC) in the past. Multinational enterprises play an important role in international business today. This can be seen in the review as follows:

Kuhn, Morrow & Park (1989) reported a list of the world's 100 largest industrial companies which showed that the giants of 20th-century industry, motor vehicles and oil, were still dominant, but their fortunes were diverging. Two newer groups, computers and electronics, were strongly challenging both industries' prominence. This list has expanded from 50 to 100 companies to reflect the growing importance of international business. The U.S.A. dominated the compilation, followed by Japan and Germany. The Japanese were preeminent on a list of the world's 50 biggest banks. In a list of the 100 largest banks outside the U.S.A., Japanese banks were increasing their world dominance.

Casson (1983) identified four major trends in twentieth century industrial organization as follows: 1. the divorce of ownership and control in large companies, 2. the growth of the multi-divisional firms, 3. the growth of multinational firms, and 4. the emergence of large scale research and development as an engine of corporate growth. Casson concluded that the distinctive nature of the MNE to be an object worthy of separate study, the MNE must pose theoretical problems which go beyond the multi-product, multi-plant firm.

In terms of operations, Katrak (1981) maintained that: 1. transfer price manipulations may affect the allocation of resources within MNEs, 2. the firm will be faced with a variety of input prices for nontradeable goods in different economies, 3. the MNE operates in a world divided into currency areas and is therefore subject to exchange risk on assets so "exposed," 4. the MNE must operate across socio-cultural barriers/divisions between nations. For an MNE to acquire knowledge and skill to operate in global economy probably means removing all national barriers to corporate recruitment and promotion as a corporate policy. It also may mean the international dispersion of certain research and development activities, as well as product sources.

Kobayashi (1990) conducted studies in 1978 and 1985 focused on how far Japanese multinationals had progressed in achieving globalization as compared to their Western counterparts. Measurements of comparison based on the five stages in the progress of international business activities. The management process was divided into eight dimensions. Substages in the progress of internationalization in each of the eight dimensions were identified, and a grade was assigned to each of the five stages of development. Findings suggest that Japanese firms were most advanced in the areas of planning and training and the supervision of expatriate managers; the lowest level was the employment of local staff in managerial positions. The U.S. and European multinational firms earned high scores for the training and supervision of expatriate managers and the promotion of local managers. Functional areas, such as financing, marketing, and research and development, were graded relatively low. In addition, the multinationalization of Japanese firms doing business abroad remained behind Western major multinational firms.

Hogg & Syrett (1989) reported that the increasing inter-country mergers and acquisitions as the single European market of 1992 approaches resulted in companies undergoing fundamental structural change and cultural growth. The changes prompted a reassessment of management

development within the organizations. In companies such as Daimler-Benz, the emphasis was on broadening the perspectives and experience of managers. The Swiss firm, Forbo, had directors from all countries in which it had factories and held board meetings in French, English, or German. Surveys indicated that a majority of UK-based firms lacked international representation on their boards. European experience indicates that a broad approach to recruitment, team building, and management development is required to develop management teams capable of operation in international markets. Olivetti developed a "No Frontiers" program to meet the international business needs of its clients.

Mulford (1987) stated that the development in the world economy increased the awareness of global economic interdependence. Economic policy coordination among the major trading nations must continue to be strengthened, and the needed adjustment within and among nations must be accelerated. The newly industrialized countries (NIC) clearly emerged as major trading economies, but they had yet to demonstrate that they were responsible trading partners. It remained to be seen whether the NICs would shoulder their burden in the world's trading system that was the source of their prosperity, or whether they would instead continue to be increasingly directed toward export-led growth, powered

by undervalued currencies that ensure increased penetration of the world's largest and most open market. The Asian NICs should assign a higher priority to developing their capital markets and integrating these into the global economy.

Heenan (1988) stated that the twin forces of a hostile regulatory environment and the proliferation of state-owned multinational corporations (MNC) between 1957 and 1979 demonstrated government interest in acquiring a greater stake in international business. The impact on traditional private sector MNCs was profound, with firms from the West retreating to their domestic markets. In the 1980s, several forces began to influence countries to reappraise their economic principles and ideology and to forge a new role for the MNC. First, governments have realized the limitations of Fabian socialism in advancing their economies. Second, foreign governments' enthusiasm for state-owned enterprises diminished. Third, the rise of Third World MNCs proved that emerging nations could participate in the free-market system. Finally, the success of the newly industrialized countries persuaded Western aid donors that a more affirmative role for private enterprises. As multinational decision making became less rigid and bureaucratic, foreign executives were chosen to lead corporations, and a concurrent broadening of ownership occurred.

Hipple (1990) presented data on the trading activities of multinational companies from 1977 to 1982. In total merchandise trade, intrafirm exports and imports represented a significant dollar value and a substantial share of US merchandise trade. The data show that intrafirm shipments by multinational firms comprised a large share of international trade, especially in certain commodity categories. Comparing US-based and foreign-based multinational firms, the data show that US-based firms did not perform well. US-based firms, with their major presence in exports, suffered a loss of trade shares between 1977 and 1982. In contrast, foreign- based firms experienced no significant change in trade shares.

Kotabe & Omura (1989) examined the basic types of sourcing strategies used by multinationals, limited to the international movement of components and products within the foreign multinational firms that serve the US market. Letters were sent to the chief executive officer of foreign subsidiaries operating in the US, with 71 usable responses obtained. The results indicate that the product's market performance is not related to its life-cycle stage in world trade or to production location. The performance is positively related to the internal components sourcing and negatively related to the product adaptation. While certain cross-national sourcing strategies can enhance market

performance, there is no guarantee that specific sourcing strategy implementation will produce superior results.

Kotabe & Murray (1990) reported that in increasingly complex global competition, multinational firms stepped up international sourcing of components and finished products to serve various markets. A taxonomy of sourcing strategies was developed, based on a few variables identified in the taxonomy, the performance implications of various sourcing strategies and innovative activities that accompany them were explored using a sample of subsidiaries of European and Japanese multinational firms operating in the U.S.A. It appeared that product and process innovations were entwined such that continual improvements in manufacturing processes led to product innovations. The taxonomy shows that, when either one of the innovative activities is low while the other is high, the degree of internal sourcing of major components appears generally low.

Ghoshal & Bartlett (1988) presented the findings of a multiphased, multimethod study on the organizational attributes that facilitate the creation, adoption, and diffusion of innovations by subsidiaries of multinational corporations (MNE). A comparison was made of results obtained via case research in 9 companies, multiple-respondent questionnaire surveys in three companies, and

a single-respondent survey in 66 North American and European MNEs. Results show unambiguous and positive impacts of normative integration through organizational socialization and dense intra- and inter-unit communication on an MNE subsidiary's ability to make a contribution to various innovation tasks. The results were less consistent in terms of the effects of local resources and autonomy. It seems that the influences of these two attributes were strongly mediated by the levels of normative integration and organizational communication.

Martinez & Jarillo (1989) studied the mechanisms of coordination used by multinational corporations (MNC) through a review of 85 pieces of research published in books and academic journals. Most studies can be grouped into three streams of research. The two early ones, going from the late 1960s until the present, concentrate on the more formal coordination mechanisms. The third, fully developed only in the last ten years, analyzes the informal, subtler mechanisms of coordination. In all three cases, an evolution from unidimensional to multidimensional perspectives on coordination could be seen. This emphasis on subtler coordination mechanisms, together with a multidimensional approach, could be at least partly explained by the growing sophistication of scholars, who could understand the deeper processes inside large, complex

firms. The observed evolution in research could also be due to the basic increase in the use of subtler coordination mechanisms by MNCs.

Gomes-Casseres (1990) proposed an integrated approach to explain how multinational enterprises (MNE) select ownership structures for subsidiaries. The approach integrates two previously proposed approaches, i.e., MNEs prefered structures that minimize the transaction costs of doing business abroad and ownership structures were determined by negotiations with the host government, and the outcome depends on the MNE's bargaining power. Statistical analysis was used to separate the effects of the two approaches within the integrated approach. The results support one of the more important hypotheses of the bargaining power approach, which holds that attractive domestic markets increase the relative power of host governments. The analysis does not support other hypotheses of this approach, such as those predicting that firms in marketing and research and development (R&D)-intensive industries will have more bargaining power than others. The results also show that relatively large firms and firms with high intrasystem sales are more deterred by government ownership restrictions.

Saudagaran (1988) studied the motives for listing stocks on foreign exchanges abroad. Data were collected on 481 multinational companies. The study found that the primary influences on a firm's decision to list their stock on foreign exchanges were the absolute size of the firm, the company's main line of business, and the nationality of the firm. The relative size of a firm within its domestic capital market also influences its decision to list abroad, with firms in smaller domestic capital markets being more likely to participate in foreign exchanges. An additional influence is the extent of a company's dependence on foreign consumer and product markets.

Leadership, Management and Personnel

Doe (1989) reported that Japanese electronics companies moved 15% to 30% of their total production offshore. Consequently, 30% to 50% of their workforce was non-Japanese. To become a global company, a corporate structure was reorganized to give local operations more autonomy. In a rush of enthusiasm for regional control, regional corporate headquarters were established by the Japanese in North America, Asia, and Europe to take charge of all activities in their respective areas. Developing the personnel needed to function globally was a prime concern for these newly multinational Japanese companies. The first step, making Japanese employees more international in

outlook, was achieved through courses in English, international business, and foreign culture. A more difficult issue involves how to turn foreign managers into real Japanese company people.

Crump (1990) made a notice that many kaishas (Japanese corporations) established complex operations in overseas markets that affected kaishas' personnel departments. Non-Japanese managers working for a kaisha overseas and non-Japanese hired as kaisha employees in Japan faced specific difficulties. Teaching non-Japanese kaisha employees how Japanese culture influences the workplace was one step toward the successful globalization of the kaisha. Japanese employees visiting overseas operations should learn about Japan's basic cultural foundation through its influence on the workplace. In addition to language skills, Japanese employees assigned overseas should receive training in the local culture's business meeting style, negotiation style, and management methods.

Darling (1988) suggested that organizational excellence and leadership strategies were important to successful international business firms. The keys to organizational excellence focus on four primary factors. First, the firm must take good care of its customers through superior product quality and exceptional service. Next, the firm

must always innovate, and there must be committed people within the organization. Finally, effective managerial leadership must be used to connect the other three factors. Effective managerial leadership also is reflected in four major strategies, namely, attention through vision helps to create a focus for the organization, creation of meaning through communication involves the capacity to relate an image of the desired state of affairs, trust through positioning is reflected in managers who make themselves known and their positions clear, and confidence through respect is achieved by a manager's positive self-regard and the ability to bring out the best in others through the inducement of a positive other-regard.

Sanders (1988) presented that as international business evolved into global corporations, a new type of manager was emerging: the global manager. Global managers must be different from their international or multinational predecessors because the context in which business was conducted worldwide was changing, and this change was forcing fundamental shifts in management philosophy. Forces contributing to the creation of global business enterprises include the globalization of markets and production centers, communication and telecommunications networks, capital, and competition. In light of those forces, emergent global managers will need to understand and manage a world view of

their business relationships while managing their own inner space, to relinquish decision autonomy while developing a collaborative approach to business relationships, and to understand their own national heritage while understanding global political risks and strategies.

Dalton & Kesner (1987) conducted a study to compare the incidence of CEO duality and board composition across three samples of firms in the U.S.A., U.K. and Japan. The study found only modest differences between the UK and US in terms of the proportion of outside or nonmanagement directors, compared to the total number of directors. Japan, however, has a substantially lower percentage of outside board members. In Japan, CEO duality was evidently unusual, while in the U.S.A. and U.K., such an arrangement was commonplace. These differences may be due to the fact that most Japanese firms were owned by a very few owners whose financing comes from large financial institutions that work closely with top management. Such an arrangement would lessen the importance of the director acting as a "watchdog" for stockholders, the usual role in U.K. and U.S. companies.

Mueller (1988) suggested that in the complex international business world, the role of an advisory board was critical to success and might assume such forms as international advisory councils, asset impact advisers,

internal advisory boards, and functional advisory boards. The corporate advisory boards could constitute a valuable governance resource if the relationship to the advisee was nurtured properly. The concept of bounded rationality helps explain the need for qualified advice at the governance level. Organizations often cannot comprehend problems that exceed a given level of complexity. The boundary between advisers and management must be mutually understood to avoid ambiguity and conflict.

Sanyal (1990) studied the ability of U.S. labor unions to organize workers in majority and wholly owned foreign-owned manufacturing facilities in the U.S.A. by analyzing union representation election results. A multiple regression analysis fails to support the hypothesis that nationality is a significant factor in union election outcomes in multinational enterprises (MNE). Also, there is no significant difference in the percentage of votes cast for the union in foreign-owned or U.S.-owned firms.

Harvey (1989) studied the problems that exist for an executive upon reentry from a foreign assignment and examined why programs to repatriate returning executives had not been instituted by multinational corporations. Members of the American Society for Personnel Administration International were surveyed, yielding 75 usable responses.

The results indicate that only 31% of the companies have some formal repatriation program. The 3 topics that received the greatest attention in repatriation programs were career path counseling, assistance with relocation problems, and interim financial assistance. The most frequently mentioned reasons for not having a repatriation program were the lack of expertise, the cost of the program, and the lack of a perceived need for repatriation training by top management. The results illustrated that U.S. based multinationals did not develop a sense of awareness as to the need for repatriation programs.

Forms of Operations

Korth (1988) stated that countertrade, more commonly known as barter, played a growing role in the domestic markets of many nations both on wholesale and retail levels and gained in importance in international business. Some firms already engaging in countertrade included Daimler-Benz, Ford, Xerox, Boeing, and Coca-Cola. In modern countertrade, simultaneous exchanges were not required, and barter credits could be accumulated. The switch trader generally engineers the barter deal, acting as broker or intermediary. One of the strongest motivations for countertrade was a buildup of excessive inventory or the existence of excessive productive capacity. Liquidity problems, such as a buyer's inability to pay, could be

avoided by barter. It could be done with no drain on a firm's cash or a country's foreign-exchange reserves and no deterioration in a company's debt ratios.

Lecraw (1989) conducted a study to fill in a gap in the empirical evidence concerning countertrade. The data were collected from nearly 300 firms in the U.S.A., Canada, and Japan. The results indicate that countertrade success is higher for large firms that have these characteristics: 1. they are experienced in exporting and in countertrade operations, 2. they can accommodate countertrade takebacks and value vertical integration, 3. they export high-value, high-visibility, complex products, 4. they have a low reputation for quality, 5. they have excess capacity. Success is also higher if the importer: 1. values quality, 2. has low technical proficiency, 3. is inexperienced in exporting, 4. faces barriers in export markets, 5. has a high cost of forward contracts, 6. has foreign exchange constraints, and 7. faces a disequilibrium exchange rate.

Franko (1989) examined gecgraphical, sectoral, and corporate trends in the use of minority and 50-50 joint ventures by U.S. multinational manufacturing and mining companies in less developed countries (LDC) during the 1970s. The data were obtained primarily from the Harvard Multinational Enterprise Data Base and supplemented with

corporate performance data for the 1975-1980 period from a new International Competitive Analysis database. The results confirmed the results of Wells (1971) that the firms most willing to accept minority or 50-50 joint ventures tend to be smaller, second-ranked oligopolists in their industry. Although there was a suggestion that LDC pro-minority joint venture policies may have "screened" in less successful firms in the computer and tire industries, there was no evidence of a systematic tendency across industries of a negative relationship between multinational enterprise acceptance of minority positions and company underperformance.

Ghertman (1988) studied governments, unions, and the public at large regarding how multinationals make decisions to restructure their international strategic portfolio or close plants overseas for the purpose of ensuring long-run competitiveness. The study examined three different types of restructuring decisions, i.e., the restructuring of business portfolio on an international scale by a multinational firm, the closure of a medium-size plant in a foreign subsidiary by a multinational firm, and a major investment in a new plant, together with closure of a smaller plant in a foreign subsidiary. The study found that the type of decision process used depends primarily on the type of decision being made. Foreign subsidiaries seem to

be the primary decision makers when closing one of their own plants, although they were not consulted in cases of strategic portfolio readjustments during their change of ownerships.

Grant (1987) examined the relationship between multinationality and firm performance form a sample of 304 U.K. owned manufacturing companies taken from The Times 500 list of Britain's largest companies. Profitability and production ratios for the period 1968-1984 were analyzed using static regressions, dynamic regressions, and desegregated analysis. The key finding was that overseas production ratio had a highly significant, positive effect that was consistent across the 3 profitability measures, i.e., growth of pretax-preinterest profits, return on equity, and return on sales. The study also found that the effect of multinational expansion on performance is largely independent of the direction of expansion. This suggests that the performance of multinational firms is dependent less upon country and industry factors than upon company-level factors such as a firm's resources and strategies.

Coplin & O'Lery (1989) forecasted that the uncertainty for international business would increase. One global economic trend was the stabilization of world oil prices,

with the assumption that fluctuation would occur within the US$14 to US$18 per barrel range in 5 year period. Global inflation was expected to decline. In Latin America, democracy lost momentum. The economic problems, the failure of political leadership, and in some cases, the effect of drug traffic may result in a return to military rule. Eastern European economic reform holded prospects for greater trade and investment, but the weakness of most economies in the region, along with the conservatism of the bureaucracy, party, and workers, created significant uncertainty. Although Western Europe and North America remain the most stable regions in the world, business prospects were clouded by developments in the European Community.

Kupfer (1988) provided a good summary of the current state of international business that conditions and trends in the 1990s would be characterized by globalization and a scarcity of qualified, entry-level workers in the U.S.A. Managers would have to shape organizations that could respond quickly to developments abroad. Intensified competition for customers mandated the presence of U.S. companies in Europe to exploit the European Community's elimination of trade restrictions in 1992. Foreign companies and investors would become stronger in the U.S.A.

Kupfer (1988) continued that demographic changes would create: 1. more dual-career families, 2. greater demand for child-care facilities, 3. a shortage of skilled workers, and 4. more education for new hires provided by companies. Despite the incentives, companies would offer workers, productivity improvements may lead to higher corporate earnings and then to labor militancy as unions seek a share of the gains. Environmental issues would center on clean water and clean air, possibly making nuclear energy preferable to fossil fuels. Propelled by new information technology, different languages, cultures, and values were being melded together by the rationale of international business.

Although the conventional view was that breaking free of national confinement was a liberating, rewarding experience, a closer look revealed that some internationalists actually yearn for a secure home base, free from the superficial life of detachment and drifting. The overload of complicated information created stress for employees in multinational companies. Compulsive behavior, such as overworking and overeating, was often resulted. Since phrases used by internationalists convey a wide range of meanings, the businessperson often finds the words frustrating and, thus, stressful. Research revealed that managers of a single international company were more aware

of national cultural differences than those from multidomestic companies. Due to the fact that international business styles influence the manager's family as well, the key to success is to balance personal and family needs with professional requirements.

In the 1980's, it was evident that in any economies there was competition from foreign goods, services, technicians, managers, technology, labor, owners, finance, and foreign interventions. In the 1990's, to survive and compete effectively, multinational firms need to internalize new knowledge skills in language, political-economy, culture, communication, negotiation, trading pattern, product and process modification, training, and so on.

MNE is only one type of business organization involved in international transactions, and it may already be fading as in the case of Sogo Shosha (see Yoshino & Lifton, 1986). It is noted that the study of international business is not confined to the study of the multinational enterprise. The MNE, as it developed following World War II, can be described as an internationally integrated production system over which equity-based control is exercised by a parent corporation that is owned and managed by the nationals of the country in which it is domiciled (see Kolde, 1985).

The Theoretical Studies and Perspectives of International Business

Attempts have been made by many scholars in the field of international business to develop a conceptual understanding of this kind of macro-behavior. For instance, Toyne (1989) proposed the Theory of International Exchange which is a generative and integrative definition of international business. By using a concept of exchange as the unit of analysis, and using the political economy paradigm, an international exchange framework was proposed. The three dimensions of the framework, i.e., polity-economy, external- internal, and substructure-superstructure, and the four components of interorganizational equilibrium, i.e., domain consensus, ideological consensus, positive evaluation, and work coordination, contain implications for international business research and research design. The framework links economic structures and processes with sociopolitical phenomena and assumes reciprocal causality.

Gomulka (1990) proposed the Theory of Technological Change and Economic Growth and concluded that the theory of innovation and growth suggests an evolution of the world economy, in the course of the twenty-first century, towards a situation in which the flow of innovation is high, but the percentage rates of innovation and productivity growth were low and similar among countries, and technology and

productivity levels were high and continue to vary among countries, but much less than at present.

Choi (1989) proposed a theory of corporate international investment from the standpoint of finance in an environment where the segmentation of international capital markets for individuals or the presence of agency costs provide some independence to corporate decisions separate from shareholders. The model does not depend on any special advantage of multinational companies, and it specifies the stochastic properties of domestic and foreign output and input prices. The findings indicate that real exchange risk and diversification gains affect corporate international investment in a significant way. It was also demonstrated that the model embodies several existing explanations based on behavioral and economic variables. The model does not explain the choice between foreign direct investment and exports or licensing, nor is it applicable to situations where international diversification by individuals is more efficient than diversification by organizations.

Dunning (1988) maintained that the eclectic paradigm of international production, a concept introduced in 1976, offers a holistic framework by which to identify and evaluate the significance of the factors influencing both

the initial act of foreign production by enterprises and the growth of such production. Despite much criticism, the eclectic paradigm remains a useful and robust general framework for explaining and analyzing not only the economic rationale of international production, but also many organizational and impact issues relating to multinational enterprise (MNE) activity. New theorizing, however, is likely to take a different form in the next decade due to the changing character and organization of international trade. The eclectic paradigm could contribute to these new theories by being further developed in several possible directions. Among the possible directions were: 1. a more formal modeling of the paradigm, 2. inclusion of dynamic and development aspects of international production, 3. locating the locus of decision making, and 4. examining the impact of MNE activity on home and host country economic goals.

Perry (1990) proposed a model to analyze the dynamic evolution of US international trade intermediaries. The model is based on Miles' model of organizational evolution, which focuses on the processes by which organizations manage the constraints imposed on them by the external environment. The basic model includes transaction-cost analysis, an expanded conceptual framework for operationalizing the decisions, the concept of task environment, and a redefinition of strategy. The expanded conceptual framework

includes or clarifies the concepts of actor, process, structure, and function. The redefinition of strategy is based on Dunning's (1981) eclectic paradigm, which includes the concept of ownership or firm-specific advantages.

Boddewyn (1988) added the political behavior of multinational enterprises (MNE) into Dunning's eclectic theory. The elements included its consideration of firm-specific, internalization, and location advantages. The expansion requires accepting that various nonmarket forces may be endogenized. Dunning's model is limited to the conditions necessary to explain foreign direct investment by MNEs. A complete explanation of MNE behavior requires that motivations and precipitating circumstances be considered as well. The analysis assumes traditional economic goals for the MNE -- survival, profitability, and growth. An explicit integration of political elements into MNE theory may offer a better understanding of why certain MNEs have succeeded, while a purely economic analysis may not be able to account for their success.

Ring, Lenwy & Goverkar (1990) proposed a framework for analyzing the political imperative. It was argued that the effects of the political imperative on the firm will be a function of industry structure. The primary effect of the political imperative will be on transfers for firms

operating in global industries; its effects will be on ownership and control for firms operating in multidomestic industries. The strategies that management employs in coping with the political imperative were a function of its impact on the firm and the firm's strategic predisposition. Regardless of industry structure, ethnocentric firms will rely mainly on forestalling strategies in coping with political imperatives, whereas polycentric firms will rely on absorption strategies. Geocentric firms will rely mainly on forestalling strategies in global industries and on absorption strategies in multidomestic industries.

Beamish & Banks (1987) extended the internalization approach to the theory of multinational enterprise (MNE) to include an expanded role for equity joint ventures (JV). Using the transaction cost paradigm of Williamson, an explanation was offered of why JVs sometimes may be preferred over wholly owned subsidiaries. In particular arrangements, the potential threats posed by opportunism and small numbers can be reduced to a point where JVs become a more efficient means of dealing with environmental uncertainty even in the face of bounded rationality. Previous research of JV performance provides support for this view. Not all JVs were necessarily unstable or unprofitable arrangements for MNEs. Beamish & Banks (1987) demonstrated that, not only were there clearly discernible

differences in the characteristics of successful and unsuccessful JVs, but these characteristics also were consistent with the predictions of internalization theory in its expanded form.

Buckley (1988) explored the difficulties of testing the internalization approach in the modern theory of the multinational enterprise which involves several assumptions. These include: 1. for each activity a firm performs, it chooses the least cost location, 2. internalizing markets to the point where the benefits of further internalization were surpassed by the costs make firms grow. Restrictions, such as location of final markets, transport costs, and definition of costs and benefits in relation to certain markets at certain times, give rise to special theories that have empirical content and can be tested. Several circumstances would create refutation if they could be shown to hold, including a random pattern of multinational activity, a macro instead of a micro approach, and perfect diversification and risk avoidance. However, using unconventional cases or outliers does not constitute disproof. While more exactness is needed in formulating and testing the theory, the present verdict on the theory must be "not disproven."

Horaguchi & Toyne (1990) reported that the rise and development of transaction cost economics made Hymer's works a matter of controversy. The Hymer controversy originated in the claims of McClain who said that the new theories of foreign direct investment (FDI) that emerged in the literature in the 1970s did not provide any distinct alternatives to what Hymer and Kindleberger had already proposed. These new theories are the eclectic theory and the theory of internalization. Both emphasize transaction cost market imperfections. When Hymer's dissertation and the writings on Coase were read together, it is clear the Hymer envisioned the international activities of a firm as being determined as much by tests of market power as by objective factors. Hymer viewed large multinational enterprises as consisting of widespread internal markets that cross industries and countries.

Kim & Lyn (1987) used regression analysis to investigate whether industrial organization-oriented foreign direct investment (FDI) theories explain the recent phenomenon of reverse FDI in the U.S.A. Data were obtained for 2-digit Standard Industrial Classification (SIC) manufacturing industries for the period 1974-1983. The results indicate that both capital intensity and advertising intensity act as barriers to entry to foreign investment in U.S. manufacturing industries. There is also evident that

foreign multinational corporations were attracted by the US market size. Reverse FDI in the U.S.A. was heavy in industries characterized by innovation through extensive research and development combined with marketing efforts. The results support the existing theoretical arguments and the empirical evidence of earlier studies on reverse FDI in the U.S.A.

Tepstra & Chu (1988) investigated the impact of several factors on the foreign investment of U.S. advertising agencies. Using the theories on the determinants of foreign direct investment by manufacturing firms, supplemented with empirical findings in service industries, six hypotheses were derived that characterize US ad agencies. They are: 1. entering foreign countries with large market size, 2. not discriminating between countries because of their geographic location, 3. having a higher tendency to go abroad with larger firm size, 4. being more inclined to expand internationally with increasing international experience, 5. reacting oligopolistically in investing abroad, and 6. following their home country client firms abroad. All six hypotheses were supported. Also, an analysis of the impact of oligopolistic reaction on US advertising agencies' foreign investment suggests that such reaction may involve a larger number of players in service industries than in manufacturing industries.

Holland (1990) proposed a decision model for capital budgeting. The model is based on the adjusted present value (APV) rule, which focuses on each present value term to maximize the development and use of information. Some version of the capital asset pricing model should be used to calculate discount rates for systematic foreign risks. Cash flows were classified into project dependence-independence and contractual-noncontractual categories. Orthodox finance theory was adapted to account for imperfections in markets for international capital, foreign exchange, and goods and services. The APV approach was applied to: 1. the decision to invest overseas, 2. the identification of overseas capital budgeting projects and their unique cash flows, and 3. the incorporation of political risk analysis to identify the origin of market imperfections and the role of governments in their maintenance.

Factors and Constraints in the Dynamics of International Business Operations

International business differs from domestic business in strategic and operational environments. The differences lead to behavioral and managerial differences. Objectives of a company may remain the same when the firm expands its operations beyond its home country. Inevitably, strategies, policies, management, organization, and operations will undergo a multitude of adjustments or even complete revisions.

Ansoff (1986) stated that environment determines strategic and operating responses of a firm. In turn, the responses determine structure of authority, reponsibility, works flow, and information flows within the firm.

In relation to the complexity of international business today, turbulence obviously has serious implications for strategic planning, economic analysis, policy making, and plan implementation. Turbulence has even more serious implication for the conduct of individual businesses.

Kindleberger (1978) maintained that a state of turbulence involves the existence of shocks of varying kinds that either shift functional relationships and cause serious problems of adjustment to new conditions, or engender sufficient price variability in important markets to the

degree that the world can be flung into recession or, if the markets were financial, into the early stages of a financial panic by their volatility. Such shocks or market volatility can have their source either in national markets or in the international interfaces among national markets.

Sauvant (1986) suggested that the accessibility of information and the ability to analyze the data very quickly has enabled the multinational corporations to survive without serious damage in a world in which rates of exchange have been extremely volatile. Smaller firms with less sophisticated access to data, and which engage in international trade must, then, ensure that they have a safe (hedged) position in foreign exchange at all times.

Davidson (1983) termed analysis of such states affairs as assuming ergodicity and illustrated the dangers underlying such an assumption. Davidson's doubts about analyses that assume ergodicity are set in an evolutionary rather than in an explicity turbulent context but the distinction is one of degree: Too rapid an evolution can cause dislocation which is the major characteristic of turbulence.

Gowdy and Yesilada (1988), suggested that if the global economy is to be in a continuous state of flux or turbulence

as it responds to first one and then another shock or instance of market instability, national economics cannot be shielded from the turbulence. Analyses that rely on some set of dominating self-centering mechanisms will serve no relevant purpose, and management practices that depend on some accepted estimates of risk and probability distributions will not provide a good basis for corporate decision making.

The radical and rapid changes in international business environment have outdated orthodox theories of international trade and investment. For instance, Theory of Comparative Advantage was criticized by Kolde (1985:46-47) on the ground that it is too simplistic. It can cope fully only with a two country and two commodity world, that is, with the very minimum condition for any international trade. If it is applied to multicountry and multiproduct trade, the model becomes vague.

Kolde (1985) further specified sources of cross-national economic contrasts as follows: 1. government system, 2. enterprise system, 3. monetary system, 4. capital market, 5. demographic environment, 6. labor market, 7. physical environment.

Robinson (1984), in his model of international system, proposed a set of variables as follows: 1. national sovereignties, 2. national economic conditions, 3. national values and institutions, 4. timing of national industrial revolution, 5. Geographical distance, 6. areas and population.

In conducting international business, there are many variables and constraints to be considered. Those factors and constraints are illustrated in the following review:

Chernotsky (1987) stated that Japanese foreign direct investment in the US increased due to internal and external factors. The forces operating within Japan that contribute to the entry of Japanese businesses into the US market included: 1. constraints on corporate expansion in Japan, 2. evolving Japanese international business strategies, and 3. shifting conditions in other investment areas. The increasing attraction of the U.S.A. involved several important factors, such as, 1. size and accessibility of the market, 2. bilateral trade frictions that threaten to disrupt the flow of Japanese exports, 3. fluctuations in dollar-yen exchange rates, 4. relative product costs, and 5. rates of return on Japanese investments. Japan's strategy in the US also was flexible enough to allow a growing number of joint ventures with American firms.

Tschoegl (1987) used Hymer's (1976) and Kindleberger's (1969) conceptual framework to assess the viability of a bank's strategy of entering into retail banking worldwide, wherever regulations permit, via a review of the literature and evidence on foreign direct investment (FDI) in banking. The relevant issues include the roles of regulation, the costs of operating at a distance and in an unfamiliar environment, and the advantages or offsetting factors that foreign banks may possess relative to local competitors. The factors examined are uncompetitive host markets, product differentiation, economies of scale, management and technology, cost of capital, government support, and vertical integration. The arguments and evidence reviewed suggest that international banking is the result of many factors. Generally, the foreign banking that exists appears to be the result of historical accident and of parent banks taking advantage of opportunities in individual countries.

Sabi (1988) used a supply-demand model in assessing the determinants of multinational banks (MNB) into less developed countries (LDC). Pooled data for the period 1975-1982 were used to estimate the model. The analysis indicates that 57% of the variation in MNBs'assets in LDCs stem from market size, the presence of multinational corporations (MNC) from the home country, the extent of economic development, the balance of payments, and the

tightness of the local banking system. The geographic distribution of MNBs'assets was strongly influenced by supply and demand factors. The evidence strongly shows that the presence of US MNCs in LDCs significantly influences the U.S. international activities in developing areas, reaffirming the follow-the-client hypothesis. Local market opportunities also have a significant impact on U.S. branch banking involvement in LDCs. Regulation and risk apparently did not have any significant effect in explaining MNBs'growth in LDCs.

Ryans (1988) reviewed market share literature to identify situational and marketing strategy factors linked to market share achievement. The depth interview was carried out with 15 executives, government agencies, representatives of trade associations, and the Japan External Trade Organization. The results support the hypotheses suggested by the literature review, namely, the products introduced into a high growth served market were more likely to achieve high market shares. However, the concentration of end-user demand was not supported, and the product differentiation received only limited support.

In terms of communication confidentiality, Heffernan (1990) maintained that the changing worldwide markets and the need for instant international business communication

left businesses at risk every day because these communications could be inadvertently or deliberately intercepted by competitors. Every effort to minimize the exposure of sensitive information and reduce the chance of communication compromise should be explored. This process includes evaluating a company's communications security as part of an overall program to safeguard proprietary information. Technical surveillance counter-measures (TSCM) inspections should be conducted in locations where proprietary or classified information was discussed.

Cairns (1989) reported that the International Accounting Standards Committee (IASC) was a force to be reckoned witn in the world of standard setting. IASC was in the business of developing and promoting international accounting standards and improving and harmonizing financial reporting by business enterprises. The IASC board has identified three key objectives that will determine IASC's priorities for the following five years,i.e., to develop truly international standards of accounting and disclosure that meet the needs of international capital markets and the international business community, to develop accounting standards that meet the financial reporting needs of developing and newly industrialized nations and assist with the implementation of those standards, and to work for greater compatibility between national accounting

requirements and international accounting standards and the removal of differences between those requirements and international accounting standards.

Meek & Gray (1989) examined the extent to which the disclosure requirements of the London Stock Exchange in relation to company annual reports that complied with or exceeded by continental European firms listed on the exchange. The company annual reports surveyed included nearly all of the Swedish, Dutch, German, and French firms listed on the exchange as of December 31, 1986. It was found that the firms exceeded the exchange's requirements through a wide range of voluntary disclosures, which in some cases were substantial. The significance of the requirements of the London Stock Exchange appeared to be minimal compared to competitive pressures associated with the need to raise capital in the international capital markets. At the same time, persistent national characteristics were evident in the pattern of items voluntarily disclosed. For instance, there was concern about forecast information in Sweden, changing price information in the Netherlands, employee disclosures in France, and social reporting in Germany.

Language can be a barrier in conducting international business. Dupecher (1990) emphasized that if Americans

wanted to sell abroad, they must bridge linguistic and cultural chasms. One essential link in that bridge is the interpreter they choose to convey their message from one language to another. If an international business is anticipated, companies should establish a relationship with a reliable interpreter agency.

Holden (1989) surveyed eighteen Japanese firms in an attempt to get a picture of the provision of foreign-language training in Japanese commercial organizations. It was found that massive sums of money were invested in foreign language training and other forms of international management development in order to sustain and develop international business activity. This shows that the Japanese language abilities is not a result of multilingual prowess. It is, rather, a further example of Western commentators ascribing superhuman capabilities in a further effort to unlock the secrets of Japanese success. While the Japanese show growing determination to speak the language of their customers, the U.K. and U.S.A. rely on the universal service ability of the English language. This tackling of language and cultural barriers reveals key factors about the Japanese, such as commitment to internationalization, ability to get close to and interpret customer requirements in specific market environments, the type of integration sought with other markets, and the status of international

management development.

Consumer's perception is a key success factor in international marketing. Han & Terpstra (1988) studied the effects of country-of-origin and brand name cues on consumer evaluations of uninational and binational products and estimates of the perceived values of such cues by interviewing a quota sample of household residents in a midwestern city. Participants were 18 years of age or older; non-US residents and residents of group living quarters were excluded from the sample. Color televisions and subcompact automobiles were targeted since they were often binational and their country images were expected to be considerably different. For the country stimuli were the U.S.A., Japan, Germany, and Korea. Results indicate that consumer perceptions of product quality, at the level of individual product dimensions as well as the overall level, vary across product modes, and sourcing country stimuli were found to have greater effects than brand name on consumer attitudes toward binational products.

Choa (1989) investigated consumer evaluations of product quality and purchase intent of two electronic products presently imported into the US from a company in a newly industrialized country and one electronic product currently not manufactured by the same company. The three

products were a television, a videocassette recorder, and a stereo component system. The data were collected from two suburban shopping malls in a large midwestern city, with a total sample size of 240. The results suggest that reverse investment in the U.S.A. may be a viable strategy for companies in newly industrialized countries traditionally engaged only in export activities if they pay careful attention to price and retail distribution in the U.S.A. It is prudent for manufacturers from newly industrialized countries to consider adopting strategies specific to each product instead of a blanket strategy. It is likely that substantial differences in treatment effects will be observed for products in different product categories.

Darling & Wood (1990) conducted a longitudinal study comparing perceptions of U.S. and Japanese consumer products in Finland, a third/neutral country. The data were collected from consumers living in the Finnish metropolitan areas of Helsinki, Tampere, and Turku during 1975, 1980, and 1985. The results indicate that, while Finnish consumer perceptions of U.S. products and marketing efforts have improved over time, the corresponding perceptions of the Japanese alternative have improved substantially more. In areas where U.S. competitors had initial advantages, the results indicate that, by 1985, Japanese firms were able to overcome such advantages and were perceived as superior in

all categories. While the U.S. share of Finnish consumer imports remained relatively constant from 1970 through 1987, the corresponding Japanese share steadily increased.

Decision making depends on information available to the executives in the company. Davidson (1990) suggested that executives must have vital information about global forces and ensure that their businesses reflect competitive and profitable operation. Early insight into emerging international developments provides a critical advantage in business planning and positioning. The U.S. media was an inadequate source of information on international trends. Executives must develop their own sources of relevant information. Ultimately, an organization needs to develop its own network of information, covering a variety of different information sources.

Risks in the currency exchange rate can be critical in international business decision. Kwok (1987) argued that many financial managers think that foreign exchange hedging decisions were mainly a choice between hedging or not hedging. Researchers applied Ederington's portfolio approach and found that, even for risk minimization, a complete hedge does not lead to the lowest risk. Instead, there exists an optimal hedging ratio that produces the lowest variance. However, these studies concentrated on a

single foreign currency cash flow. In the real world, multiple cash flows arriving at different times even for the same currency are more the case. The issue was whether financial managers should hedge these cash flows independently or combine them under one integrative hedging scheme. It was demonstrated that, while the independent approach did not lead to the lowest risk, its hedging effectiveness was close to that of the integrative approach. Given the time and resource constraints of financial managers, the simpler independent method appears to be a better choice.

Baxter (1989) studied the relationship between the statistical character of business cycles and a country's choice of exchange-rate systems to determine how the choice of exchange-rate systems affects the character of economic fluctuation, and to develop a set of facts regarding the character of international business cycles for use in future investigations. Postwar data from 23 Organization for Economic Cooperation and Development (OECD) countries and from 21 non-OECD countries were used to compare fluctuations in output, consumption, and trade variables in fixed- and flexible-rate regimes. A comparison was made of countries using fixed and cooperative schemes with countries using floating schemes during the post-1973 period, and 2 episodes of exchange-rate system changes involving Canada and Ireland

were studied. There was greater variability of exchange rates in flexible systems, but little evidence of systematic macroeconomic differences among the alternative systems.

Lee & Kwok (1988) examined whether U.S. based multinational corporations (MNC) had different capital structures than U.S. domestic corporations (DC) and, if so, what causes the differences. Empirical tests utilized for analysis attempt to decide if MNCs and DCs had the same amounts of agency costs, bankruptcy costs, and debt ratios. The foreign tax ratio was used as an alternative measure of mutlinationality, and only companies of assets totaling over $10 million were included in the samples. The DC sample consists of 421 firms that had an average foreign tax ratio of less than 1% from 1964-1983; the MNC sample consists of 231 firms with a foreign tax ratio greater than 25%. An additional sample of MNCs with a ratio greater than 10% was made because of the vast difference in sample sizes between DCs and MNCs. The results indicate that MNCs do not have lower bankruptcy costs and tend to have lesser debt ratios than DCs. Further research is needed to examine the interaction between industrial effects and capital structure determinants.

In international business, nothing is bought or sold until the total landed cost is determined. This cost

includes all transportation charges, duties, brokerage fees, packaging costs and other factors that go into an international transaction. The key to good landed cost calculation is learning the important differences in terms of sale for exports and terms of purchase for imports. In the export area, the two most important terms are Free on Board at the U.S. port, and cost, insurance, and freight at the foreign port. Experienced importers do not try to estimate landed costs; they supply their foreign buyers with cost sheets for partial completion. The final calculation of transportation cost, duty rate, and carrier selection is made by the importer's traffic department. Some of the items that were the importer's responsibility include buying commission, the letter of credit, customhouse brokerage fee, marine insurance, and local drayage charge.

Success factors in exporting also has been studied. Christensen, da Rocha & Gertner (1987) investigated the possibility of differentiating successful exporters in Brazil from those who ceased to export during the period 1978-1984 on the basis of 3 firm profiles, i.e., company characteristics, export management practices, and perceptions and attitudes of the top managers. A time-series research design involved the collection of data in 1978 and again in 1984. The study found that, based on the 1978 profiles, it would have been possible to predict

whether a given firm would still have been exporting in 1984. The successful exporters were found to have better quality control departments, larger in size, more diversified, more likely to be growing, produce standardized industrial products, delegate key marketing decisions, and have less idle capacity than ex-exporters. The study also found that successful exporters used different practices associated with exporting and that they relied less on government incentives than ex-exporters.

Political risk can be a main influencing factor in making decision. Friedmann & Kim (1988) stated that political risk is an inescapable reality of international business. Thus, it is argued that there is a need to address the issue from an international perspective. In this argument, two basic issues become apparent. First, the topic of political risk is a rich and complex one, with tremendous diversity of viewpoints regarding everything from definitions of political risk to the nature of political risk events, the different conceptualizations and theoretical frameworks, and the variety of political risk assessment techniques available. This diversity of viewpoints provides both a challenge and an opportunity. Second, in both an aggregate and a more specific manner, politics is the utmost importance to global marketing. Political risk should be considered a variable of market

segmentation, pricing, distribution strategy, and product strategy.

In a study by Tallman (1988), the proposition that home country political risk factors influence outward foreign direct investment (FDI) was investigated by using data from the U.S. Department of Commerce to model investment activity in the U.S.A. Multiple regression techniques were used on a pooled time-series cross-sectional database of 14 industrialized countries with investment activity in the U.S.A. from 1974-1980, all of which were listed by the World Development Report of the World Bank for 1979. The years chosen show the period of overlap of the databases for FDI activity in the U.S.A. (1974-1983) and political risk measures (1948-1978). The model is estimated with three estimation techniques, ordinary least squares, least squares with dummy variables, and error components. Results indicate that investment activity from industrialized countries in the U.S.A. was dependent on home country economic and political conditions. Further, bilateral international political relationships were important in determining the level of FDI from a source nation to a given host country.

Gillespie & Alden (1989) developed the parameters of a life-cycle model for consumer product exports to

liberalizing less developed countries (LDC). Such exports were thought to be minimal prior to liberalization and to rise rapidly in the early stages of liberalization and then decline, sometimes steeply, several years later. These hypotheses were tested using consumer import data from Chile, Egypt, and the Peoples' Republic of China. Shift share analysis was employed. The analysis was undertaken at the 4-digit level of the Standard International Trade Classification code aggregation. The results support the notion of an import life cycle for consumer products in liberalizing LDCs. Several explanations for the rapid growth of consumer imports upon economic liberalization have been advanced, including pent-up consumer demand, realignment of income distribution, and government policies sympathetic to the demands for consumer products.

Upon interactive business negotiation, culture play an important role in decision making. Adler & Graham (1989) maintained that international management studies had been used mainly in the comparison of managerial behavior in countries around the world. Often, these studies have implied that businesspeople behave similarly with their domestic colleagues as with their foreign counterparts. Using a negotiation simulation, the behaviors of four culturally distinct groups, i.e., 190 Americans, 72 Japanese, 100 Canadian Francophones, and 100 Canadian

Anglophones, were compared across intracultural and cross-cultural situations. Negotiators in each of the 4 groups made changes. U.S. negotiators were more satisfied in cross-cultural interactions. The Japanese were more attracted to US negotiators than to their fellow Japanese, even though their profits were reduced when bargaining with Americans. Francophone Canadians behaved much more cooperatively with Anglophone Canadians. The Anglophone Canadians spent more time and achieved lower joint profits in cross-cultural interactions.

Cultures also play important role in business visit. Remington (1990) criticized that the gift giving in doing international business, Canadians must be carefully researched and planned to avoid embarrassing or offending the recipient. In many nations, customs and social mores were often steeped in generations of traditions, legends, folklore, and suspicions. In some countries, it would be considered exceedingly impolite not to take a gift; in others, to ask what is proper would be considered not only rude, but dishonorable as well. In Islamic countries, visitors should never give gifts of alcoholic beverages or photographs, paintings, or sculptures depicting women. In Arab countries, a gold fountain pen would be a good choice. In Latin America, as in some European nations, guests should never give 13 of anything, black or purple items, knives, or

handkerchiefs. In Japan, gift giving is often taken as an obligation, but the Japanese do not like to open gifts in front of the giver.

In addition, culture can influence the perception of debt and risk taking. Sekely & Collins (1988) studied to determine if some broad cultural influence exists on the determination of capital structure by examining the debt structure of 677 firms in 9 industries in 23 countries. The results confirm and strengthen the conclusion, reached in previous studies, that cultural differences contribute to the significant country and minimal industry influences. There also appeared to be some intercountry influences caused by underlying cultural patterns among groups of countries. Such cultural patterns could influence the development of financial institutions, attitudes toward risk, and attitudes toward debt.

However, it is controversial that culture influences management attitude. Kelley, Whatley & Worthley (1987) performed cross-cultural analyses by differentiating cultural from other environmental influences. The researchers attempted to isolate the influence of culture by studying individuals from the same industry and management level. They also control many organizational variables. Japanese, Chinese, and Mexican managers, their

ethnic-American counterparts, and Anglo-Americans were used to test the model. The sample consists of 314 middle managers in financial institutions in the U.S.A., Japan, Hong Kong, and Mexico. The US sample was drawn from Hawaii and New Mexico. The results indicate unique persistent cultural characteristics, with the cultural effect varying among the three managerial groups. The results suggest that the issue was not whether management attitudes were a function of culture, but rather which attitudes correspond to which culture.

In dealing with different cultures, a person can learn to adjust to new conditions by a variety of ways. Mitchell & Lewis (1987) argued that international misunderstanding and misbehavior take place because people in one country do not accurately perceive the basic ways in which other people live. Business people make unacceptable, offensive, and costly errors due to the fact that they were unaware of cultural differences. An inter-cultural education model was proposed. The model is based on the Republic of Korea and includes knowledge of the areas in which most inter-cultural differences were likely to occur. They were geography, religion, history, communication, contemporary political setting, and the Korean military. Success in using the model is dependent on a positive attitude on the part of corporate management toward its implementation.

Shaeffer(1989) maintained that the emerging process of managing internationally calls for different information, different perspectives, different skills, and a much greater tolerance for ambiguity and uncertainty. Human resources planners have to be aware of the competitive imperatives underlying international business development in order to make strategic change occur. Companies worldwide were being forced to change and to manage their affairs in a much more flexible, dynamic way. The new approach to managing provides greater autonomy at lower levels and is less rigid. Human resources professionals should be aware of the competitive imperatives underlying international business development. They must strive to help the company achieve profitable growth by responding effectively to the opportunities and challenges posed by the changing environment.

Blocklyn (1989) suggested that corporate executives must develop an international business perspective. They must go abroad to work, preferably in a number of foreign subsidiaries, to gain the experience they need to help their companies compete internationally. A number of firms has developed and implemented successful international executive relocation programs. Relocating executives and their families must be alerted to the cultural shock they will encounter in their new environment.

Education can be used as a tool to introduce the global changes to people. Akers (1989) stated that three forces that drive the global marketplace were the worldwide flourishing of science and technology, foreign investment, and the relationship between world peace and world trade. The biggest problem in America was public education in kindergarten through the 12th grade. To improve schools, there must be better partnership among education, business, government, families, and social service agencies.

Suzuki (1988) reported that the growth of Japanese foreign investment created demand for a specially educated corps of international managers. Some Japanese companies sent their up-and-coming executives to the U.S.A. to study for a master of business administration (MBA) degree. However, a number of problems arose using this strategy, partly from ill-defined objectives and partly from the reactions of the students. Cultural differences made these problems more acute. A study was conducted by using questionnaires and interviews, in which 153 Japanese holders of American MBAs participated. The MBAs were divided into two groups, i.e., the company-loyal, who return to the firms sponsoring their foreign education, and the company-mobile, who change employers before or after their return home from the U.S.A. The Japanese students specialized in such areas as marketing/international business, finance, accounting,

and organizational theory. Recommendations from the study include arrangements to make the new MBA's return to the sponsoring organization smooth, and efforts to create an appropriate atmosphere for resettlement.

Tax benefit is another attracting factor in conducting international business. Zink & Mezzo (1989) stated that a number of S corporations contemplated operations abroad for many reasons, for instance, increasing competitive investment in the U.S.A., using the Canadian free trade agreement, entering Europe 1992, and favorable investment conditions abroad. There were various factors that must be carefully considered in structuring a closely held S corporation's mode of operations if tax benefits were to be maximized. For instance, an S shareholder cannot be a nonresident alien. In addition, it may not be necessary to adopt a complex structure if the company can conduct its affairs abroad through a licensing agreement or by direct exporting from the U.S.A. A number of strategies is available for other kinds of consideration as a company's activities become more complex, for instance, operating as a branch, a 79% owned foreign corporation, a foreign sales corporation, and an interest charge domestic international sales corporation.

Al-Eryani, Alam & Akhter (1990) studied the influence of environmental and firm-specific variables on the selection of international transfer pricing strategies. The findings show that the legal and size variables were significantly associated with the use of market-based transfer pricing strategies. These results suggest that legal considerations, such as compliance with tax and custom regulations, were influential in the use of market-based transfer pricing. Economic restrictions, such as exchange controls and price controls, political-social conditions, and the extent of economic development in host countries were unimportant or secondary determinants of a market-based transfer pricing strategy. The results indicate that US multinationals closely abide by the US tax regulations.

Aronson (1987) pointed that the publication of a new decree authorizing US-USSR joint ventures announced on January 5, 1987 brought financial questions to US firms seeking joint ventures with the Soviets. These include conflict of interest as a result of divergence of priorities between export production and import substitute production, the lack of the structure necessary to finance a guarantee of foreign exchange, and difficulties in valuation and pricing. Operational problems in the US-Soviet joint ventures might face include such issues as ownership, management, labor relations, the relationship to the state,

the bureaucracy, and dispute resolution. Political issues involve export controls and Soviet international trade status. The new Soviet legislation provides only a guideline for the structuring of US-USSR joint ventures and needs more detailed provisions to prevent misunderstanding and dispute.

International law and agreement can influence business operations in trade regions. McDermott (1988) reported that the Council of the European Community adopted Regulation Number 1761/87, which allows antidumping duties to be imposed on products produced from imported components and assembled inside the European Community using basic "screwdriver assembly" methods. The extension of antidumping laws apparently was an attempt to stop the invasion of Japanese goods into Europe. Some critics feel that the Regulation assesses duties without a finding that the components have been dumped, and that it violates Article VI of the General Agreement on Tariffs and Trade (GATT), article 11 of the GATT Antidumping Code, and GATT provisions on equal national treatment. Some of the provisions were vague, and some people have labeled the Screwdriver Regulation as unfair and discriminatory. The effect of the Regulation would not be apparent until it had been refined or used several times. The Regulation's imprecision allows for great discretion in applying the law,

and circumspect use would increase respect for the Regulation.

Neeley (1989) stated that while the nonmarket economy (NME) provisions of trade law had seen relatively light use since the Trade Agreements Act of 1979, such cases were likely to become more frequent in the years ahead. With the economic reforms occurring in the Peoples' Republic of China, perestroika in the USSR, and economic changes in Eastern Europe, companies from the U.S.A. and other Western countries were entering joint ventures and other arrangements with their counterparts in NME nations. The use of the anti-dumping laws as the main means of regulating imports from NME countries has proven a failure because of the problems that arise in applying market concepts to nonmarket entities. The final solution to the regulation of NME imports should be a Section 406 injury-based system that eliminates, as much as possible, discretion in imposing relief.

Coulson (1988) contended that disputes quite often arise in international business, and many executives prefer private arbitration to foreign court systems. International arbitration systems did not achieve total credibility because they were identified with a particular culture or region. An informal international federation

formed by about 50 national arbitration agencies, had the potential of creating a network to provide administration on a global basis.

Newman (1989) wrote that the Omnibus Trade and Competitiveness Act of 1988 included several important amendments to Section 337 of the Tariff Act of 1930, which has been used by U.S. patent holders to protect themselves against infringement by imports. The 1988 amendments reflect concern about the increasing ineffectiveness of Section 337 in protecting U.S. intellectual property rights. The amendments were aimed at making investigative procedures less expensive and more accessible to U.S. owners of intellectual property. Under the amended Section 337, issues in an investigation of an intellectual property-based complaint have been streamlined, to validity and/or enforceability, infringement, a minimal U.S. presence, public interest, and remedy. The injury and industry requirements were dropped, converting the International Trade Commission from a body regulating international trade matters to an international patent court.

Rosenthal & Gilbert stated that Section 201 of the Trade Act of 1974 is an escape clause provision that allows U.S. firms to petition for government relief if it proves to the International Trade Commission (ITC) that increased

imports were a substantial cause of serious injury or threat to a domestic industry. ITC actions spurred Congress to amend Section 201 in 1984. One amendment made it clear that the ITC is to consider the closing of plants and underutilization of production capacity when analyzing injury. The Commission was also directed that the absence or presence of any one factor was not dispositive for purposes of the ITC's determination. The case of Heavyweight Motorcycles and Engines and Power Train Subassemblies (1983) was an example of a relatively successful use of Section 201, particularly in terms of promoting industry adjustment.

Hirschhorn & Tasker (1989) reported that the Omnibus Trade and Competitiveness Act of 1988 significantly changed the Export Administration Act (EAA) and created a new category of U.S. sanctions against non-U.S. firms committing no violation of U.S. law. In 2 highly publicized cases, those sanctions were applied to Toshiba Corp. of Japan and Kongsberg Vaapenfabrik of Norway, whose subsidiaries had sold products to the USSR that would allow the Soviets to build extremely quiet submarine propellers. The U.S.A. claimed the sales violated rules set up by the Coordinating Committee (COCOM), which coordinates national security export control policies of its members. The sales did not violate U.S. export control law. An analysis of the

situations indicates that EAA amendments passed in the wake of the Toshiba-Kongsberg incident were a step toward rationalizing U.S. export controls on dual-use items.

Internal government organizations in the home country can facilitate international business. For example, Piernick, Wilbert & Campbell (1988) reported that the Greater Detroit-Southeast Michigan area created the Business Attraction & Expansion Council (BAEC) to promote economic development and employment in southeast Michigan. The objectives of BAEC's international component were to implement reverse investment trade missions to Japan, and the Republic of Korea and to Europe, to monitor foreign trade missions of other Michigan economic groups to decide whether BAEC should participate, to implement an export promotion program for area businesses, to develop promotional materials needed for achieving these objectives, and to implement activities and functions needed to support the overall international business development program. BAEC had conducted 13 international trade missions in six years, and the results were favorable.

International business may involve selling to target country government. Luqmani, Habib & Kassem (1988) used managerial framework to examine factors that could influence government decision making in less developed countries (LDC)

in the context of government markets. To successfully market to these buyers, a series of hurdles or screens must be cleared. They are meeting eligibility which often involves paying a large bidding fee or being part of a select group of suppliers, following procedures which have been complicated by an unprecedented growth of bureaucracy in LDCs, establishing critical linkages for situations in which governments prefer foreign firms, developing competitive offers, which requires a longer term perspective in marketing to LDC governments, and exerting appropriate influence in the areas of contractual, local firm, and outside consultant influence. It was concluded that international business firms should seek a proper match between their capabilities and experience and the particular characteristics of the LDC governments that were their clients.

Kolde (1985) maitained that a government has four administrative levers with which to encourage or discourage an enterprise, whether foreign or domestic, to do something it would not otherwise do, including the international transfer to technology. The four levers were regulation, tax incentive, subsidy, and action or increase of uncertainty. The subject of government policy toward foreign investment has become more important as developing nations have increasingly turned to the private sector as a

means of promoting industrialization. Governments would evaluate the effects of the policy mix they choose, but they found it difficult because data were scarce and unreliable, too many of the variables were unmeasurable, and the relationships between the independent and dependent variables were dubious. The most direct means of assessment would be to examine the net inflow of investment after different policy changes were placed in effect. This could be achieved from statistics or tables of data or illustrated by means of a time line. Problems with the assessment paradigm include the inadequacy of data, difficulty in measuring foreign investment flow, quantification of significant policy events, and the problem of causation. An analyst can seek explanations from opinion evidence, but the raw results were more difficult to organize than numerical data.

Jain & Nigh (1989) examined the political relationships between a bank's home country and a borrowing country which affected the lending behavior of banks by analyzing the exposures of U.S. commercial banks to 49 developing and semi-industrialized countries and 9 centrally planned countries for 1977 and 1978. As part of their foreign policy, governments would like to encourage their banks to lend to nations that were perceived as friendly and discourage loans to nations perceived as hostile. The

results indicate that banks seem to look at the behavior of their government when lending to countries. This is particularly true for countries that borrow large sums of money or countries whose export earnings were small. Both of these groups of countries may require assistance from creditor nations or international organizations in case of a crisis.

Guisinger (1989) stated that host country interventions in goods markets (e.g., tariffs and quotas) and factor markets (e.g., tax holidays and training grants) were recognized as having an impact on the profitability of foreign direct investments. Two new measures were proposed, i.e., total protection and an internationalized version of the marginal effective rate of taxation. The measures incorporate all government interventions in a single, common denominator readily applicable to empirical research. One approach is the selection of a standard partial indicator as numeraire and then translation of all interventions into units of this numeraire. The measure created by summing together the values of the trade and nontrade interventions expressed in the numeraire is called "total protection." The second approach involves selecting a single common denominator. Empirical estimates of the total protection measure for Europe indicate that, for new investments, government interventions in factor markets increase

profitability more than trade interventions.

Agarawal & Agmon (1990) tried the concept of vertical dynamic comparative advantage to model three stages of government-business relations in the process of firm internationalization that has accompanied the economic development of newly industrialized countries. India, Singapore, and the Republic of Korea represent different stages of the transition process from phase one of import substitution to phase two of export-based international business activities to phase three of foreign direct investment. In each case, the corporate sector took government-directed macroeconomic conditions as an input in developing its own long-term international strategy. In the model, the process of developing international business activities in firms is shaped by two major factors, i.e., government policy and profit maximizing behavior by firms. The government may initiate the process and control its initial stages, but the role of government diminishes as the country and the corporate sector move successfully through the three stages.

Gray (1990) reported that government officials in China were informed that the factory of a leading toy manufacturer was engaged in labor law violations and ask the managers to respect the law. The managers refused and threatened that

if they were unable to operate the way they wanted, they would close their Chinese factories and move to Thailand. The same attitude prevails among many employers in international business. They often import employment practices into Third World countries that they would not follow in their home countries. The resurgence of economic nationalism is guaranteed if Third World governments fail to pay greater respect to the human rights of their most vulnerable citizens that was treated as commodities.

Environmental concerns may influence international business operations. Krauer (1990) maintained that the global awareness of environmental issues was continually increasing. Conducting business efficiently and effectively in a mere technocratic sense was insufficient to be accepted as business leaders. Environmental considerations must become an integral part of the managerial decision-making process as financial, production, legal, and human resource considerations. Leadership under these circumstances requires business executives to take the initiative to search for solutions to environmental problems rather than waiting to be legislated into compliance. Business practitioners must assume appropriate responsibilities if they want to preserve entrepreneurial freedom.

Huntoon (1989) stated that the producers of hazardous waste in industrialized countries were finding treatment and disposal increasingly expensive because of tighter domestic regulations and decreased availability of suitable disposal facilities. Developing countries, desperate for foreign exchange, began to accept hazardous waste at cheaper rates. As a result, the transfer of hazardous waste increased. Several domestic, regional, and international measures emerged to regulate international hazardous waste transfers. Since an internationally imposed ban on transfers was not politically feasible at that time, management of these transfers could only be achieved through a combination of domestic controls by developing countries on imports of hazardous waste, stricter hazardous waste export controls and enforcement by industrialized countries, and implementation of the approved global convention to control international transfers.

An apparent factor influencing international business is the progress of technology. Keller & Chinta (1990) stated that high-technology industries led the way in the globalization of international business. Success depends on how well a firm transfers technology to another firm or market in a foreign country. International technology transfer usually faces greater problems than in a domestic situation due to differing cultures, norms, laws, and tax

policies. Information is provided to instruct managers in what they should focus on and what some of the strategies to achieve technology transfer abroad were. Unfortunately, many important factors are ambiguous by nature and difficult to measure. The technology to be transferred and the target markets may be changing, estimating costs and prices can be difficult, and the competition may consist of only a small number of firms or governments. Several critical factors may be external to the firms involved, such as political, cultural, and economic conditions. Under these conditions, management must have a good understanding of international technology transfer process and the barriers and bonds that determine success.

In dealing with technology transfer, Robinson (1988) stated that the commercial success of an international technology transfer is influenced by the intervention of governments, singly or collectively. The parent governments of the technology supplier and the technology recipient both may actively intervene in ways which influence the perceived costs, benefits, and risks associated with international technology transfer. The intervention of multigovernment organizations became more importance.

Young (1990) examined technology transfer from the perspective of the selling and negotiating processes for

practical implications for engineers, scientists, and managers. In the technology transfer process, relationships with the home and host governments and with other institutions enter the equation, as well as those between buyer and seller. As technological buying becomes more popular in international business, companies were reminded to learn how to deal effectively internally. Firms must realize that technological buying differs from the usual industrial buying. To treat them identically would be an inaccurate assumption. Due to the differences, marketing strategies must be changed, i.e., sellers must be willing to provide related services to the buyer. Sellers also need to realize the inherent risk involved in technological buying, therefore, buying process will be lengthy, more complex, and involve more parties. Sellers must be able to deal with technical issues, as well as political and social issues.

Labor cost is a major factor in moving production across national borders. Woodword (1990) reported that as computer memory became increasingly inexpensive, more companies transferred data to online systems. This was a labor-intensive process and it forced countries in high-priced labor markets to turn to less developed countries for these services. Centers then operated in the Caribbean, the Philippines, Mexico, and Japan. Since 1987, the Peoples' Republic of China, building on a network of

computers established for the census in 1981, had been actively pursuing international data entry business. The size of China's labor pool was an advantage but lack of expertise in typing, English, and careful quality control had been a problem. Despite predictions of its demise, data entry was a viable business and China was sure to play a role in its future.

A firm's size and strategic location may be considered in investment. Kimura (1989) proposed a model that relates variation in foreign direct investment (FDI) behavior among firms within an industry to the variation in their strategic advantages, based on internationally mobile strategic assets, and to the variation in the locational conditions specific to the locations where FDI is undertaken. A pooled set of firm-level data on FDI activities and strategic advantages from the 9 largest Japanese semiconductor firms for the period 1978-1982 was used to estimate the model. The results show that the firm's technological lead in particular semiconductor technology areas drives it to engage in FDI, particularly in the advanced countries. The strategic advantages associated with a broad breadth of product line and partially internalized vertical linkages may transfer to foreign locations and have some impact on the size of the firm's FDI activities. The results also imply that the firm's domestic size in part reflects the

strategic advantages that are also important to make it large in foreign locations.

Ball & McCulloch, (1990) provided a definition of the environment in international business as the sum total of all forces surrounding and influencing the life and development of the firm. External forces, which may be called uncontrolable forces, consist of competive force, distributive force, economic force, financial force, legal force, physical force, political force, socio-cultural force, labor force, and technological force. Internal forces, which may be called controllable forces, consist of the elements which management has some command, e.g., capital, raw material, and people, and the activities of the firm, e.g., production, marketing, and personnel. Management must admininster the controllable forces to adapt to changes in the uncontrollable environmental variables.

International Business
Management and Operations

Gazely (1990) maintained that company managers are responsible for managing the business so that employees are motivated to contribute to the formulation and execution of organizational goals. Entrepreneurs take the responsibility for ensuring the long-term vitality of the company by shaping its direction, optimizing its profit results, moving it into new businesses, and adapting it skillfully to changing external forces. The four main elements of the business manager's responsibility, i.e., financing, purchasing, production, and marketing will be affected by global considerations as the world moves toward increased economic interdependence. To compete in an international business environment, the successful business manager will need good rounding as a far-sighted generalist. In the 1990s, management will need to play the dual role of corporate manager and entrepreneur. To avoid stagnation, more attention should be given to maintaining vigorous and competitive activity.

Inter-cultural adaptation to global environment is inevitable for international management. Barnum (1989) maintained that the U.S. business executives about to enter the international arena must be less competitive and more cooperative, more of a win-win strategist, more aware of

geopolitical trends, more future-oriented, and more worldly. To acquire these skills the changes must come from within. An expanded concept of self must be developed that is more tolerant, more adaptable, and more polite. They should learn the rules of etiquette and protocol for formal and informal situations on a country-by-country basis.

Decision making in international operations is crucial to the survival and growth of the company. Hunt et al. (1989) studied the relations between decision making and individuals' cognitive styles. A standardized decision task was simulated according to a specific multiphase model of decision process. A scenario was portrayed in which different pairs of advisers of contrasting cognitive styles (analytic-intuitive) proposed strategies to a manager for handling payoffs in international business dealings. Participants, whose cognitive styles were measured prior to the test, were asked to select one adviser's proposals in each of three meetings corresponding to various phases of the decision process. An analysis of variance demonstrated a congruence of subjects' cognitive style (analytic-intuitive) and preferred strategy over phases of the decision process. The findings support that decision processes and decision makers' personality are dependent and the model can be used to specify the decision process.

Norburn, Birley, Dunn & Payne (1990) studied the ways in which senior executives characterized their firm's marketing effectiveness, corporate culture and beliefs in four countries that share a common language, i.e., the U.K., the U.S.A., Australia, and New Zealand. At the international management level, contributions to theoretical development have emanated from different perspectives, i.e., contextual, behavioral, and environmental. The results support those theorists who advance cultural specificity as the main moderator of top managerial attitudes. However, they also emphasize that the best predictor of marketing effectiveness is similar in all four nations - the primacy of the importance of people and quality. Across each of the four categories, variations in managerial attitudes, beliefs, and values suggested that national culture shapes individual behaviors into kaleidoscopic formats, each different in subtle patterning.

Competitiveness through market-driven changes would continue to be the means for survival, growth, and profitability for companies. Endowsman (1989) maintained that some U.S. industries lost their position of dominance in global competition. Japan and other Pacific Rim countries were constantly developing significant broad-based technology, service, and manufacturing capability. Facing the competition requires innovative methods of managing

changes in a market-driven economy. Managers must be carefully and continuously trained in the current concepts of supervision and management in a market-driven enterprise. Leadership, vision, courage, empathy, humility, and wisdom are necessary to implement a change. A participative management style was recommended for managers in the process of change which requires leading teams through both growth and nongrowth business environments.

Planning is an important task in international management. Sweet (1990) reported that a major Peat Marwick's study of more than 70 multinational companies underscores the importance of planning as users build or broaden global networks to support expanding international business efforts. The report was designed to give users insights into the future of global networks, as well as strategies for successful implementation of international net facilities. It also explored the impact of global deregulation, saying that the loosening of regulatory restrictions in other nations will boost international network deployment and make global nets more powerful business tools for multinational companies. The survey showed that careful planning is the key to successful international network efforts. The most effective global networks serve all levels of the corporate organization, enabling workers in every department and business unit to

communicate easily with one another.

Handy & Barham (1990) stated that to think and plan globally, and to act locally, demands that the transnational firm sets a broad strategic framework that promotes a common vision for the future throughout the organization. The objective is for managers everywhere in the organization to know enough about the common framework and vision to be able to translate them into action at the local level. In developing an organizational culture, attention must be directed to such things as the international language of the organization, the composition of the board, and international communication processes, meetings, and remuneration policies of the organization. Developing international managers calls for a multifaceted approach that builds on both on-the-job development and off-the-job education.

Control is a critical concept for successful management and performance of international IJV). Contractor (1990) presented a review and synthesis of prior studies which suggest to distinguish 3 dimensions of international joint ventures (IJV) control, i.e., the focus of control, the extent of control achieved by parent firms, and the mechanisms that parent firms use to exercise control. Most studies on IJV control have had a limited perspective on the

control concept, or they have only looked at one of its dimensions. Empirical evidence regarding the control-performance relationship in IJVs is limited. A model of the study of IJV control was proposed, based on an integrative concept of IJV control that takes into account its different dimensions. It is organized around the concept of strategy. In the model, IJV performance is mainly a function of the fit among the international strategy of the parents, the IJV strategy, and the parameters of control.

International environment necessitates personnel staffing policy. Boyacigiller (1990) used a multilevel analysis of environmental and organizational factors to explain the differential utilization rates of U.S. citizens in overseas professional positions of a major U.S. bank with 84 branches in 43 countries. Results suggest that a single staffing policy may be inappropriate for the affiliates of a multinational corporation that operates in environments with differing levels of political risk, cultural distance, and competition. The operations take place at different levels of complexity and interdependence. Both organizational and environmental characteristics influence the use of U.S. citizens in overseas operations. Complexity, political risk, and cultural distance increase the uncertainty of doing business in the foreign country and appear best managed with U.S. citizens acting mainly as sources of

information and unobtrusive control.

Martinez & Ricks (1989) presented empirical evidence on the relationship between the degree of influence U.S. parent firms have over the human resources decisions of Mexican affiliates and the affiliates' resource dependencies on the parent firm and importance to the parent firm. It was found that resource dependence was the factor most closely related to parent firm influence over affiliate human resources decisions. The importance of an affiliate to a parent firm, the nationality of the affiliate managers, and the type of ownership arrangement were also found to affect parent influence, but to lesser extent than resource dependencies.

Recruitment policy for international staff is determined by the nature of work requirements. Beamish & Calof (1989) surveyed 122 major firms in Canada for the views on the importance of various management skills and international courses, as well as their opinion on the mechanisms (institutions and academics) for delivering them. The respondents indicated that international business skills were of greater relevance after some work experience had been obtained. However, they only moderately agreed that international awareness among recruits was important. Business degrees and engineering were ranked highest for students preparing for an international career. Courses

deemed most important were international marketing and sales, international finance and capital markets, and international trade and export management. The respondents indicated a slightly negative opinion of academia's international business competence.

Reynold & Rice (1988) surveyed the preferences for educating international managers in 127 US firms with international operations. Questions covered descriptions of the firm's operations, predictions of future developments in the international field, practices and procedures involving international management assignments, the relative importance of seven functional fields of specialization within international business, and ways of gaining knowledge about those fields. Results show that the majority of firms prefer international managers who have had overseas experience, but international business finance, accounting and law, academic or special executive development training serves as a close substitute for overseas experience. It was also apparent from this study that the relative availability of American managers with overseas experience was falling.

Kimura (1989) maintained that team work is the main work style of the Japanese, while a fundamental goal of U.S. and European business schools is to develop individual

skills of problem analysis. Multinationalization of the operations of Japanese companies has caused the need for management decision-making skills that are not readily available via traditional Japanese management education. Japanese managers often lack the skills to formulate and describe the problems in an analytical framework and business language that are customarily used in the community of experienced international business managers.

Walle (1990) stated that executives generally became more accepting of the ways of other people, and overt ethnocentrism was declining. However, as Westerners have become more worldly in their interpersonal dealings with other people, they have embraced a strong global marketing orientation. This global paradigm contains a "covert ethnocentrism" because it presupposes that the entire world is being changed in the same way by technology. While this might be true in the long term, global theories usually are not relevant to short-term analysis on strategic planning. Thus, it is important to avoid covert ethnocentrism. Those people in international business must resist an uncritical acceptance of the broadened, deepened marketing paradigm and must replace it with a cultural relativistic orientation that views other people from their own perspectives.

Management style might not be effective or transferable between East and West. Adler, Campbell & Laurent (1989) used an instrument developed in the West and used extensively in Europe and North America to investigate managerial behavior in the Peoples' Republic of China. A total of 103 Chinese managers were asked to describe their style of management on the Laurent Management Questionnaire. For several reasons, the instrument failed to produce a valid and reliable description of Chinese managerial behavior. It was concluded that Western models cannot be blindly applied. Given the great amount of within-country variance, comparing the Chinese with other countries' managers was premature. Descriptions of the apparently different and potentially changing styles of the Chinese were needed. Grounded theory or similar anthropological techniques may be required to create new instrumentation based directly on the Chinese managers themselves. There may not be one dominant style shared by most Chinese managers, and a mean may be the most significant statistic.

In the Economist, Vol. 311, Iss 7608 (1989) it was reported that learning to operate in truly global fashion was the largest barrier facing Japanese companies. Only a handful of Japanese firms took the first steps toward becoming full-fledged multinationals. Japanese companies would have to devolve large amounts of responsibility and

authority to far-flung operations and then leave it to their local or regional managers to adjust to the culture, tastes, and business practices of the countries where they compete. Japanese firms showed signs of developing their own blend of ideas borrowed from established multinationals and new management structures invented by themselves. The role model for many of Japan's new merchant adventurers has been IBM Corporation, but copying the form alone will not be sufficient. Some observers believe that multinationalism has come too late to Japan. In fact, Japanese companies risk losing more than they gain from wholesale changes in the way they conduct international business.

Kobayashi (1990) stated that Japanese way of doing business can be difficult for overseas partners to understand. However, Japan can be a constructive partner for global strategic alliances. In the present world market, interdependence among companies of diverse nationalities is increasing, so the growing common ground can be shared by major Japanese and Western companies. The five stages in the progress of the internationalization of business activities are business is centered around the activities of company headquarters, foreign operating units develop as export substitution industries, managerial perspectives of foreign operations are expanded beyond a country's borders, the international business of a company

is organized and managed with a global perspective, and the global perspective is substantiated by global logistics for the optimization of worldwide opportunities.

As international business increases, more companies are moving employees to foreign locations. Van & Wolniansky (1990) reported that keeping employees and their families at a foreign work site each year costs most companies between three and five times the employee's annual base salary. To help decrease the chances of an expensive early return, employees and their families were screened carefully prior to an international assignment. Training for the assignment included study of the customs and language of the foreign country. Financial counseling was also provided to help employees understand their salary allowances and the tax laws that they would be responsible for following in the receiving country as well as back home. Other costs involved in sending an employee to a foreign location include allowances for home maintenance, education, tax return preparation, and emergency leave.

Harpaz (1990) conducted a study to determine the relative importance of work goals. The data were collected between 1981 and 1983 from random samples of the labor force in Belgium, the U.K., West Germany, Israel, Japan, the U.S.A., and Netherlands. The results indicate that

interesting work was by far the most preeminent work goal. With slight variations, it appears as the most salient facet among all seven nations. Following closely behind in overall ranking was "good pay," an indication of this facet's worldwide importance for workers. The predominance of these work dimensions suggests that the typical orientation of people toward their work may be quite complex. What was revealed was a picture of employees who are neither exclusively expressive nor completely instrumental in their attitudes, but who are highly concerned with both aspects of work.

International management involves different moral and ethical norms and standards. Vincent (1990) reported that survey studies of business ethics were increasing rapidly in universities, and the ethical dimension was seen more as an integral part of organizational culture. Some kinds of business activity would appear to have more surface ethical issues than others, and this is certainly true in the international domain. The domestic situation is more containable as more restricted systems boundaries may be built around domestic ethics. Ethical issues were explored starting with international business, then narrowing the focus to domestic business, and finally to professional ethics. Areas such as bribery and corruption, social marketing, ethics education, capitalism versus socialism,

freemasonry, the religious dimension, and professional codes of ethics were discussed. An analysis of real-life ethical situations leads to the formulation of 3 models of corporate codes of conduct, i.e., regulatory, aspirational, and educational. All three elements may be desirable, but the educational code model was recommended as the one with the most potential.

The growth of international business in many companies brought unexpected problems. For example, Schobel (1989) reported problems involving social security coverage and benefits. The U.S.A. had international social security agreements in effect with several countries. In the absence of such an agreement, social security law requires social security contributions to be paid on the earnings of U.S. citizens or residents working for American employers anywhere in the world. No social security contributions were payable to the U.S. system for Americans employed outside the U.S.A. by strictly foreign employers. Americans employed by a U.S. employer in a foreign country may be subject to double coverage - and double contributions. The international social security agreements can provide an exemption from paying U.S. social security contributions if the employment is covered by the social security system of another country.

International Marketing and Market Entry

Jain (1989) presented a framework for determining marketing program which involves synthesizing theoretical and empirical works in marketing, international business, and strategic planning. Program standardization was proposed to be a function of target market, market position, nature of product, environment, and organization factors. The framework is likely to be useful in directing future studies attention to key variables and relationships. It also has implications for domestic marketing decisions, international corporate management, and subsidiary management. The framework implies that corporate managers can influence certain variables to produce a climate where a greater degree of standardization would be feasible. These variables include establishing a geocentric orientation in the organization and providing opportunities for an ongoing parent-subsidiary dialogue.

Pricing is a crucial issue in international marketing. Lancioni (1990) stated that in international marketing, price can be defined as the value that a product or service contains based on the intangible and tangible factors that comprise it. Price setting should be carried out on two levels in international marketing, i.e., the external market level, which includes such factors as customer price

sensitivity, competitive price levels, and government regulation, and the internal level, which considers cost reduction objectives, return on investment (ROI) goals, sales volume requirements, and production volume quotas. When prices are being set in international marketing, both environments must be considered.

Lancioni (1990) further suggested some pricing goals a firm can set in international marketing as follows: 1. return on revenue, 2. price stability, and 3. market prestige and image. The way to respond to a competitive price change in an international market is one of the most difficult decisions a company has to make. This decision is affected by the nature of the market, the level of competition, the life cycle stage of the product, and the firm's management philosophy.

Kirkconnell (1988) presented seven principles to assist companies in developing and implementing global strategies and to provide a framework for applying the market entry approaches to individual markets in a way that creates a coherent global strategy. These principles are, clarifying any international business mission, challenging assumptions about "closed" markets, maintaining host country contacts for successful market assessment, fitting market entry strategies to host country needs and company capabilities,

obtaining a clear understanding of partners' goals to achieve successful international business partnerships, testing "competitiveness" and "fairness" through feasibility analyses, and allowing local executives to manage once the strategy is set.

In export planning, Kir & Kirkconnell (1989) suggested that it need not be a high-risk undertaking for small businesses. Developing a viable export plan involves product analysis, fact-finding, and an in-depth understanding of the target market. To provide direction and a framework for initiating the venture, three basic steps are required, i.e., the market must be researched, a firm's export potential must be assessed, and a written plan must be developed. To begin, a company must measure its marketing capabilities in terms of production facilities, human resources, and financial reserves. The two main approaches to selling in foreign markets are direct selling and indirect selling. Direct selling involves a higher degree of commitment and exposure than indirect selling.

Business contacts and business partners are key factors in market entry. Fadiman (1989) stated that Arabian, African, and Asian business techniques have endured for centuries. However, most U.S. firms prefer to conduct international business ventures along familiar Western

lines. Upon arriving in a non-Western nation, the first step that a project leader should take is to enlist key foreign contacts as company allies. There are several strategies that non-Western businesspeople use to cultivate allies, for instance, make repeated visits, place other people under obligation, usually through private or commercial favors. Used judiciously, generosity can create receptive marketing conditions among local groups or institutions to which company allies have connections. Product acceptance should be extended beyond the sample population and into related groups of clients. One technique is to promote product lines through individuals within the sample group.

Douglas & Rhee (1989) examined the nature of generic competitive strategies in an international context, based on a sample of industrial businesses serving markets in the U.S.A. and Europe, drawn from the Profit Impact of Market Strategy database. Two subsamples were constructed, one with 250 firms with corporate headquarters in the U.S.A., serving U.S. markets, and another with 187 firms serving European markets, of which 120 were headquartered in Europe and 67 in the U.S.A. The basic components of competitive strategy and the same general competitive strategy types seem to occur among firms in the US as in Europe. Some differences, however, were found with regard to certain

aspects of strategy, especially with regard to the integrated marketer groups. Differences were also found in the performance and business characteristics of the strategy types. These were especially marked with regard to the integrated marketer and the low quality group. The levels of financial performance appear to be higher in high growth markets, especially in European markets.

Chakravarty (1989) reported that for more than a decade, Pepsi wanted to enter the Indian market. In the USSR and the Peoples' Republic of China, Pepsi offered to export 1 U.S. dollar of locally made products for every 1 U.S. dollar of materials it imported. In 1988, Pepsi won the rights to sell its sodas in India, but it had to offer an export-import ratio of 5 to 1. Pepsi also had to promise to take on Indian partners.

McDougall (1989) studied international entrepreneurship by classifying 188 new venture firms in the computer and communications equipment manufacturing industries according to the percentage of their sales in the international market. Results indicate that the strategy and industry structure profiles of international new ventures are considerably different from domestic new ventures. The international ventures pursue much broader strategies by developing and controlling numerous distribution channels,

serving numerous customers in diverse market segments, and developing high market or product visibility. The international firms also emphasize a more aggressive entry strategy. The domestic venture is distinguished by its emphasis on a production expansion strategy and customer specialization strategy.

Litvak (1990) studied the corporate motivation that caused 29 small and medium-sized enterprises in Canada to go international. The group was surveyed in 1970, and interviews were conducted in 1980 and 1989. Most of the group initiated their export marketing strategies during the formative stage of their companies' development. By 1989, ten of the 29 owner-operated firms were still in operation and were actively involved in international business; 10 companies had been acquired, mostly by U.S. and European multinationals; the remaining 9 had failed. A distinguishing feature of the group is that all the companies received substantial government support and assistance toward research and development, as well as support in export marketing and procurement. The commercial performance of the firms was enhanced and the company life cycle was extended by going international.

Forms of International Business Operations and Results

Go & Chritensen (1989) stated that franchising was an attractive vehicle for international expansion because it requires less capital than ownership. The traditional methods of franchising are master license, direct license, branch or subsidiary operation, and joint venture. The choice of methods depends upon the franchisor's willingness and ability to devote resources and the availability of suitable potential licensees, franchisees, or partners in the target territory. Companies participating in a study by the International Franchise Association noted that expansion affords growth and increased revenue, along with the benefits of increased brand recognition and larger market share. However, it also presented certain problems, including increased costs, varying governmental regulations, and cultural differences. The decision to expand depends upon international business trends and the availability of suitable markets, among other factors. The top four factors in achieving success in the international arena are supporting, recruiting, training, and controlling the activities of the international partner.

Hennart (1989) explained the features of new contractual alternatives to foreign direct investment to assess their efficiency, and to forecast their future development by using Transaction costs theory. One way to

tap the assets of multinational enterprises without losing political independence is to contract for them through the market, while leaving the ownership of production facilities in the hands of domestic nationals. The new contractual forms include licensing, franchising, management contracts, turnkey contracts, and production-sharing contracts. While the new forms may be efficient in organizing some types of trade, the government-mandated replacement of equity ties by contracts would be inefficient in others. At the limit, transaction costs would become so high as to absorb all potential gains to trade. As countries gain experience with these contracts and become more aware of their drawbacks, they will start to relax their previous ban on inward investment, as well as their reluctance to undertake direct investments abroad.

Kogut & Singh (1988) analyzed three kinds of entry modes namely, acquisitions, joint ventures, and wholly owned greenfields (start-ups), to find support for the belief that national culture affects entry choice. Firm-level variables are diversification, country experience, multinational experience, and U.S. and non-U.S. asset size. Industry-level variables are research and development (R&D), advertising, manufacturing, and services. Country-level variables are cultural distance from the US and uncertainty avoidance. The analysis shows that, the more culturally distant from

the U.S. the nation of the entering firm, the more likely the firm will choose a joint venture. The greater the size of the U.S. partner, the more likely the entry will be a joint venture. The more uncertainty-avoiding a culture is, the more likely it is to prefer joint venture or greenfield entry. Manufacturing firms were more likely to prefer greenfield entry. R&D-intensive firms prefer joint venture and greenfield entry.

Gripsrud (1990) studied the process that occurs when active exporters, reacting to new opportunities, enter or increase exports to psychologically distant markets. A model was formulated in which firm and product attributes, as well as perceived barriers and opportunities, were proposed as determinants of attitudes toward future exports. The model was tested in a two-step procedure with multiple discriminant and regression analysis. The data were taken from a survey of Norwegian exporters of fishery products; 49 of them had experience with the Japanese market and 65 did not. The empirical results support the idea that the product submarkets in which the firm operates have an independent effect on its export experience and its attitude toward future exports. The larger firms have moved into the Japanese market to a larger extent than have the smaller firms. However, when controlling for export experience, the smaller firms have tended to show a more positive attitude

toward future exports than did the larger ones.

Hennart (1990) studied countertrade, one of the major developments in international trade in the past decade, which has been the spread of a range of unconventional trade practices. Countertrade was used to describe six types of transactions, i.e., barter, clearing arrangements, switch trading, buy-back, counterpurchase, and offset. Some of the implications of recent theories of why countries impose countertrade obligations were compared with data obtained from Countertrade Outlook, a comprehensive database of countertrade transactions. The findings indicate that the relationship between a country's credit rating and its propensity to countertrade is not as strong as commonly held. On the other hand, the data support the rival hypothesis that some forms of countertrade, such as buy-back and counterpurchase, are substitutes to foreign direct investment. Each countertrade type seems to have its own separate motivations.

Collins (1990) studied the foreign direct investment (FDI) diversification. Three groups of U.S. firms were examined, i.e., those without significant international operations, those with international operations in developed countries, and those with international operations in developing countries. Risk-return performance analysis was

performed on the three groups. The findings reveal that, while developing country FDI results in inferior performance, there are no statistically significant differences in market performance among the three groups. The results indicate that U.S. multinational firms do not benefit their stockholders by diversifying into developing countries.

Kim & Lyn (1990) conducted a univariate analysis which show that foreign firms operating in the U.S.A. were less profitable than randomly selected U.S. firms. These foreign- based multinational corporations spend more on research and development and less on advertising than U.S. firms, and they have higher debt levels combined with higher liquidity. Japanese firms exhibit more homogeneity than other foreign-owned firms and tend to be more R&D and advertising intensive. Western European firms were more efficient and more profitable, but they also have a lower growth rate. Canadian firms have high growth rate, but they have low profitability measures. Regression analysis shows that the determinants of excess market value for foreign MNCs in the U.S.A. are the leverage ratio, the liquidity ratio, and firm size. For U.S. firms, the determinants are advertising and R&D intensity, the growth rate, the leverage ratio, and the liquidity ratio.

Dichtl, Koeglmayr & Mueller (1990) provide a good future perspective of international business that every nation, especially one that depends to a large extent on foreign trade, must be prepared to exploit all its export opportunities. In the 1990's, opportunities in international business open to every economy.

In terms of study in international business, Dunning (1989) presented that the relative importance of foreign trade and production increased in almost all major economies together with the foreign component of national economic decision making at the macro and micro level. The uniquely foreign attributes of the study of the practice of international business became more important.

Dunning (1989) further contended that scholars need not only to draw upon different disciplines, but to do so in a coordinated way. The greatest challenge to scholars was within the international business profession itself. There is a need to determine if the organization of the study is efficient, if its ownership is appropriate, and if it is properly focused to meet the need of its customers in the 1990s. These problems should be addressed on the levels of the individual scholar, the faculty, and the Academy of International Business.

Theory and Model Construction

In order to provide a basic understanding of the theory and model construction, this section of Chapter 2 provides the literature review on a variety of methods for theory and model construction which were employed in the present study.

A theory is a set of interrelated constructs, definitions, and propositions that presents a systematic view of phenomena by specifying relationships among variables, with the purpose of explaining and predicting the phenomena. Parsons (1961: 137) stated that:

> Theory . . . consists of a logically integrated set of propositions about the relationship of variables, that is, abstract conceptual entities, in terms of which many statements of fact can be systematically related to each other and their meanings for solution of empirical problems interpreted. Besides the all important empirical relevance, the principal criteria of good theory are conceptual clarity and precision and logical integration in the sense not only of the logical compatibility of the various propositions included in a theoretical scheme, but of their mutual support, so that inference from one part of the scheme to other parts becomes possible.

Instead of trying to explain each and every separate behavior, science seeks general explanations that encompass and link together many different behaviors because the basic aim of science is to develop a theory. Albert Einstein

(1960: 83) proposed two goals of science. The first goal is for humans to make as complete as possible their comprehension of the connection between sense experiences in their totality. The second goal of science is to achieve the first goal by the use of a minimum of primary concepts and relations. Primary concepts are those directly connected with sense experience and are presumably reduced in number by developing logically derived concepts which require primary concepts to deduce all others.

Carl Hempel (1952: 1) formulated objectives for empirical science, of which business and economics form a part, as follows:

> Empirical science has two major objectives: to describe particular phenomena in the world of our experience and to establish general principles by means of which they can be explained and predicted. The explanatory and predictive principles of a scientific discipline are stated in its hypothetical generalizations and its theories; they characterize general patterns or regularities to which individual phenomena conforms and by virtue of which their occurrence can be systematically anticipated.

A possible distinction between two goals has led to the idea of two types of science, normative science and positive science. Normative science is concerned with what ought to be. Much of normative science, however, is concerned with

the development of criteria which involves value judgments. Positive science is a systematized body of knowledge about what is, including a description and explanation of existing relationships. Positive science is useful in predicting on the basis of derived propositions.

Bannister and Fransella (1971: 160) stated that:

> One of the prime effects of carrying out research within a specific theoretical framework is that the theory helps us to decide the questions that are to be asked. A well elaborated theory should not only provide the research with a language (and should not only help to find a suitable methodology), but also should indicate what issues are fundamental.

Though theories are generally of a high-order conceptual nature, they are susceptible to testing, modification and rejection at all times. They may be obsolete because of the formation of a new theory which leads to a better or more universal explanation. Theories are not the absolute truth. They are only more or less useful for integrating observations and making predictions which subject to test. Turner (1976: 176) remarked:

> Theories are useful and they are "contextually true," but only to the extent they generate well-confirmed hypotheses. Their extensions are empirically determined and provisional. They make no claim to an absolute truth status that would enable us to prejudge the world and retire from ontological quest.

The full value of a theory and model as the foundation for international business studies and management requires an elaboration of a systematic integration of formal knowledge versus informal knowledge or intuitive thinking, and the philosophical bases that provide the underpinnings of the formal knowledge.

Marx (1970) employed the dynamic interplay between a system of symbols, on one hand, and observational data, on the other hand, to classify modes of theory construction in behavioral science. The interaction results in four types of theory, namely, deductive theory, inductive theory, functional theory and model.

A deductive theory represents a two-way interaction between a system of symbols and observations. Deductions from the logically related propositions of the theory are derived and then tested under controlled conditions of observations, and in turn, the propositions are modified either in whole or in part by the results of those tests (see Hull's 1943 approach, for example).

In an inductive theory, there is no interplay between symbols and data. The direction of influence is from data to theory, namely, to integrate particular observed instances into more general expressions. There is no return

from theory to data (see, Skinner's 1938 approach, for example).

A functional theory is more closely tied to the data, that is, it may be restricted to some behaviors of some kinds of problems with rather short-term inferences from data to theory and from theory to data. Most of the theories in business and management today can be classified in this functional mode of theory construction (see Vernon's 1966 approach, for example).

A model involves almost no interaction between the system of symbols and observations. It is simply an analogy, which might include a pictorial representation, that is used to organize observation to provide suggestions for research in some area (see Robinson's 1985 approach, for example). However, models are more complex than the usual hypotheses and are quantitative in nature in their most useful forms, thus, such models might represent theories in science.

Ideally, a theory must be developed to guide the design of the study, thus, the explanation comes before the data collection to verify the explanation. In practice, often only part of a theory is developed in advance and other parts are left to be filled in after the data analysis.

The Method of Path Analysis

A research may be perceived as the construction and analysis of two models; namely, a measurement model and a causal model. The researcher builds causal models among variables. The variables of interest must be measured according to the measurement model and their indicator variables.

Hunter & Gerbing (1982:282) stated that . . .

> The most common form of explanation is to postulate a set of "causal relations among the variables." The classic question in elementary statistics is, "If X and Y are correlated, then (1) does X cause Y, (2) does Y cause X, or (3) are X and Y correlated because both are the causal consequents of yet another variable Z?" When answers to such questions are integrated into a theory of relations among all the variables in a study (or some important subset of them), then the resulting theory can be stated in the form of a "path diagram." If the relations among the variables are all linear, then that path diagram can be interpreted in a series of equations called a "path model" or "structural equation model."

Hunter & Gerbing (1982) defined a causal model or a structural equation model as an explicit network of causal relations among variables. The causal relations may be shown by the correlations among the variables. A path diagram is a pictorial form of the causal model in which the parameters of the model represent the causal impact that variables have on one another. A path model represents a

set of predicted relationships derived from a theory and is not the theory itself. The theory is a specification of the underlying causal processes, not a description of the correlations between the variables. The theory is explanation rather than description.

For the construction of a path model, Hunter & Gerbing (1982) suggested to begin not with a list of the variables but with a list of the important causal processes that take place in the setting under consideration. If an arrow representing causal impact is drawn from one variable to another, then that arrow represents the net impact of all those causal processes that carry differences in the value of the first variable into differences in the value of the second. On the other hand, the same causal process may influence several variables and may thus be represented within several arrows. There is a one-to-one relationship between causal arrows and underlying causal processes.

In reality, especially in business behaviors, the one-to-one relationship between two variables hardly exists. The concept of multiple causation must be introduced. For instance, an accurate prediction of a stock price from the corporate profits cannot be expected unless the model contains all other causal antecedents. Therefore, the scope of the path model is increased and improved to the extent

that other relevant causal antecedents are added. The method of reasoning a causal process often proceeds from chains of events, and the statistical nature of those relations must be taken into account. The identification of additional causal antecedents can greatly increase the quality of estimation within the path model.

According to Hunter & Gerbing (1982), causal model can be divided by the distinction between those models that are "recursive" or "hierarchical" or "unidirectional" and those that are "nonrecursive." A nonrecursive model contains one or more circular causal chains. In a recursive system, certain variables are used to explain other variables but that are not themselves explained. These "starter" variables, whose causal antecedents are regarded as outside the scope of the given system, are called "exogenous" variables. All other variables are called "endogenous" variables, that is, the endogenous variables are those that are explained inside the system. In path analysis, Hunter & Gerbing (1982) stated that:

> If a model is recursive, and if all the relations between variables in the model are linear; then each arrow in the model can be associated with a number called a "path coefficient." Every correlation between variables in the path diagram can then be predicted from a set of path coefficients. This set of predicted correlations can then be compared to the obtained correlations in order to generate a test of the path model. The process of 1. constructing the model,

2. estimating the path coefficients from the data, and 3. testing the path model is called "path analysis" or "structural model construction."

Accordingly, path analysis is a procedure for combining partial and multiple correlations to specify and test the causal relations among a set of variables. The set of all variables in a discourse is called a system. Within a system, a variable may be an independent variable if it is used to explain some other variables. However, that independent variable may in turn be explained in terms of other variables to which it is related as a dependent variable.

In drawing a causal diagram, Hunter & Gerbing (1982) proposed two kinds of diagrams, namely, a qualitative causal diagram and a quantitative causal diagram. The qualitative diagram uses arrows pointing from one variable to another to indicate causal influence. The quantitative diagram has numbers on each link that represent the strength of the causal impact. Furthermore, within a path diagram there are three different ways that two variables can be linked: 1. by a direct causal relation, 2. by indirect causal linkages, or 3. by a spurious relationship to a common causal antecedent variable.

Hunter & Gerbing (1982:268) further suggested that the causal and measurement models share several conceptual and statistical similarities in their analysis. In either case the researcher must: 1. construct the model, 2. estimate the values of the parameters of the model from the data, the observed correlations among the variables in the model, and 3, test the fit of the model to the data by comparing the observed correlations with the correlations among the variables predicted by the model.

Quantitative Methods of Literature Review

The traditional method of literature review is descriptive, narrative and subjective. Wolf (1986: 10) summarized potential problems with traditional literature review as follows:

1. selective inclusion of studies, often based on the reviewer's own impressionistic view of the quality of the study,
2. differential subjective weighting of studies in the interpretation of a set of findings,
3. misleading interpretations of study findings,
4. failure to examine characteristics of the studies as potential explanations for disparate or consistent results across studies, and
5. failure to examine moderating variables in the relationship under examination.

Glass et al. (1981) asserted that the fundamental problem is the inability of the human mind to address this task reliably and validly given the enormous amount of data that must be gathered, processed, assimilated, and synthesized in many disciplines.

The above criticism on the limitations of human mind leads to various attempts to develop quantitative methods of research integration. Hunter et al. (1982: 26) pointed out clearly about the needs for a method of research integration which became the core of meta-analysis. They concluded that:

> What is needed are methods that will integrate results from existing studies to reveal patterns of relatively invariant underlying relations and causalities, the establishment of which will constitute general principles and cumulative knowledge.

Matrix Analysis

Salipante, Notz & Bigelow (1982) proposed a general model of literature review methods. They introduced the concept of matrix analysis. In matrix analysis, information from a number of studies is arranged into a form of array allowing integration of findings. Then, an assessment of the validity of findings emerging from the array is undertaken. The matrix has three dimensions. The first dimension identifies the studies, each of which may contain several findings. The second dimension categorizes the findings themselves. The third dimension of the matrix contains threats to the validity of each of the findings.

Matrix Creation

After identifying the variables investigated in each study, the next task is to organize the studies' findings into homogeneous groups. Collapsing variables into coarser groupings is desirable not only when the multiple variable problem is encountered but also when the number of differing variables is large relative to the number of studies.

Salipante, Notz & Bigelow (1982) maintained that in quasi experiments, the criteria for classification are justified if these classifications satisfy two conditions: 1. strong similarities in the variables manipulated by all studies grouped under one treatment (low within-group variance) and 2. strong differences across these grouped under one treatment abstracted treatments (high between-group variance) in terms of the variables manipulated.

The completion of the matrix creation is to collect and to assemble information on the validity threats to each study. To assess threats not controlled by the design, information should be sought from the study itself.

Matrix Assessment

In matrix assessment, there are two steps as follows:

1. The reviewers generate findings by integrating the findings across the studies (within each finding's group) into a review finding.
2. The reviewers assess the validity of each review finding by analyzing the threats to validity across the studies (i.e., the validity threat array, which shows the expected degree of variance associated with different treatments).

The matrix assessment phase begins by determining the tentative review findings. Having generated the review findings, the next step for the reviewer is to assess the findings' validity. In general, the average magnitude of the effect identified in the review findings and the percentage of null and negative results should also be reported. Salipante, Notz & Bigelow (1982) stated that the percentages on the criterion variables are useful in two ways. First, questions of validity temporarily put aside, the percentages indicate whether a particular treatment had a positive effect on a certain criterion. Second, the criterion percentages may be compared across treatments to estimate their relative efficacy.

According to Salipante, Notz & Bigelow (1982: 327) the heterogeneity of contexts and threats is important in matrix assessment as follows:

> A review's matrix assessment methods must address the variation across studies (1) in contextual variables and (2)in the threats to validity that are not controlled. The greater the variation in these, the greater the confidence in the review finding. If the reviewer discovers that a particular relationship has been consistently found across a wide range of settings and populations, the possibility that the relationship is highly contingent on some unidentified variable is lessened. Similarly, if individual studies in a set vary in the validity threats that they do not control, the possibility that one or two of those threats account for the observed relationship (making the relationship spurious) is

> reduced. To state the same argument conversely: among studies reporting similar findings, the reviewer should seek to identify uncontrolled validity threats that run through many of the studies, thereby offering plausible alternative explanations to the findings. The fewer that are found, the greater the validity that can be assigned to the relationship. In other words, the more heterogeneous is the distribution of uncontrolled validity threats in a set of similar findings, the greater is the validity of the findings from the set.

By analyzing the distribution of validity threats, the reviewer can better assess a review finding's validity and also identify which threats should be attended to in future research. The above argument also implies that reviewers cannot assess the validity of a review finding as a sole function of the validity of individual studies.

Jackson (1980) found that most reviewers handled methodological weaknesses in studies either by simply saying the review findings were unreliable or by discarding the inadequate studies. A bias in the assessment of validity can result from exclusion of studies. Hunter & Schmidt (1978) pointed out the large Type I bias in review findings that can result from exclusion of studies.

According to Cook & Campbell (1976), in matrix analysis there are four kinds of validity, namely, internal, external, construct validity of causes (independent

variables), and construct validity of effects (dependent variables). The relationships between the different classes of validity are such that studies high on one kind of validity tend to be low on another. Just as the priority ordering of the types of validity carries with the goals of a single study, so will their relative importance vary with the objectives of different reviews.

With correlational designs, according to Cook & Campbell (1976), studies suffer inherently from several threats to internal validity and each might occur prior to observations. Any relationship observed between variables may be subject to alternative explanation by innumerable third variables. However, correlational studies on a given topic typically outnumber experimental studies, and therefore offer a potentially rich source of information to the reviewer. In particular, knowledge can be gained on whether a specific relationship holds up across a number of different settings and populations (external validity), and even across different measures of the same construct (construct validity). Even a single correlational study can give important insight into contextual or population contingencies through explicit tests for interaction effects.

Salipante, Notz & Bigelow (1982) suggested that a reviewer may use correlational studies in three ways: 1. to investigate external validity and contingencies by analyzing similarities and differences in findings across studies performed in a wide range of contexts, 2. to investigate construct validity by examining the findings resulting from use of differing measures thought to represent one underlying construct, and 3. to eliminate certain third variables as plausible threats to internal validity. The choice of review procedures depends on which these uses the reviewer wishes to emphasize.

The reviewer may limit the validity analysis of correlational studies to those studies that have investigated variables related to the threats identified in the analysis of experimental studies. It is not necessary for the reviewer to analyze and array validity information for all the correlational studies in one findings group.

Conflicting Results

In matrix analysis, many of the most important reviews analyzed findings that conflict across studies which led the reviewers to develop new hypotheses. The analysis of conflicting results is an analysis of validity. That is, validity issues become of primary importance in reviews that

find conflicting findings.

Salipante, Notz & Bigelow (1982) stated that results that conflict across studies can be the result of chance variation (i.e., statistical conclusion validity), weak internal validity in at least some of the studies, differences across studies in operationalizing the variables (construct validity), the operation of important contingency variables (external validity).

It seems clear that validity assessment of review findings could greatly improve the general conclusion of the review. Reviewers should strive to derive richer review findings by applying better analytical techniques. In the past, issues of validity have been seriously addressed only by a few reviews that investigated conflicting findings. Past reviews have overly emphasized summarizing individual studies and reporting the degree of agreement among them. In comparison with the quite powerful analytical techniques that are commonly employed in individual studies, the techniques used by most reviews have been rudimentary.

The reviewer, in deriving findings and assessing their validity, is inevitably bound by the studies available. The reviewer, and consumers of reviews, must recall that another

level of threats exists to entire sets of studies. Waters, Salipante, and Notz, (1978) maintained that there will often be a reporting bias in terms of the types of studies that are published with studies having nonsignificant results most likely to be underreported. Similarly, there is often bias in the choice of results that are reported within a single study, and their level of significance may be inflated by data massaging.

Matrix Analysis and Theory Construction

Matrix analysis can be used for theory construction or concept formulation. The review's objectives will strongly influence the types of studies selected for review, the relative importance of the differing threats to validity, and the cost/benefit ratio of obtaining data on the relevant threats to validity from the individual studies. Salipante, Notz & Bigelow (1982: 343) wrote as follows:

> If the review is considering a topic that is new, fragmented, and only poorly conceptualized, the reviewer will probably wish to emphasize the formulating function of the review: raising hypotheses and tentative constructs rather than testing or screening them. Such a review might therefore look at case studies and perhaps correlational studies. Given this kind of research literature and concern with the development of practical or theoretical constructs, attention should be focused on the threats to the construct validity of the review findings. Each of the review findings should be evaluated against the eight threats to construct

validity identified by Cook and Campbell (1976), with the reviewer's confidence in any given finding again being determined by the distribution of threats within the set of studies.

Apparently, that matrix analysis for literature review could be one of the principle means by which sets of findings are integrated to provide building blocks and foundation for the theory construction in social science and business which contain enormous literature beyond the boundaries of a single study and an area of specialty. The reviews could be strengthened by giving more attention to the search for contingencies and by utilizing analytical procedures, such as meta and cluster analysis, more powerful than merely counting the number of findings. In general, meta-analysis of validity threats is more conservative than the matrix analysis because it can identify a combination of threats that explain the review findings. Rosenthal (1976) performed a meta analysis indicating that the effects of experimenter expectancy (the treatment variable) were greater in studies having more carefully controlled designs. Subject to the caveats attending any cross-sectional, multivariate analysis, meta analysis seems to have strong potential, as yet largely ignored, for analyzing the validity of review findings.

Meta-Analysis

Interest in the quantitative reviews and synthesis of the research literature can be traced back at least to the works of Tippett (1931), Fisher (1932), Pearson (1933), and Cochran (1937). These early works stemmed from the desire to combine evidence from different agricultural studies. One approach focused on testing the statistical significance of the combined results across primary research studies, while the other approach focused on the estimation of the magnitude of the experimental effect across the studies. The former has become known as combined tests and range from various simple counting procedures involving either significance levels (probabilities or their logarithmic transformations) or raw or weighted test statistics such as t's or z's. The other approach refers to measures of effect size and are based on developing standardized, scale-invariant indexes of the magnitude of effects that are independent of the various scales of measurement used in the original studies.

The approach has been developed gradually as illustrated chronologically in the following publications: Wallis, 1942; Pearson, 1950; Jones & Fiske, 1952; Good, 1955; Liptak, 1958; Sterling, 1959; Glass & Hakstian, 1969; Light & Smith, 1971; Glass, 1976; Glass & Smith, 1979;

Pillemer, 1980; Rosenthal 1984; Hedges & Olkin, 1985; Hunter & Schmidt, 1990.

An early attempt to quantify research domains focused on what have become known as "voting-counting" methods (Light & Smith, 1971), in which reviewers sort the results of each study into positive significant, nonsignificant, and negative significant categories. Conclusions are then based on the resulting tallies. The vote-counting approach is no longer recommended because of the poor statistical properties associated with its use. Hedges and Olkin (1980) found the power of this procedure to be low and actually decrease as the number of studies reviewed increases, and to have a high probability of a type II error; failing to conclude that there is a positive effect when in fact there is.

Glass (1976) gave the name to the field: meta-analysis. He distinguished among the primary, secondary and meta-analysis of research (Glass, 1976:3):

> Primary analysis is the original analysis of data in a research study . . . Secondary analysis is the re-analysis of data for the purpose of answering the original research question with better statistical techniques, or answering new questions with old data . . . Meta-analysis refers to the analysis of analyses . . . the statistical analysis of a large collection of

> analysis results from individual studies for the purpose of integrating the findings. It connotes a rigorous alternative to the casual, narrative discussions of research studies which typify our attempts to make sense of the rapidly expanding research literature.

Glass's (1976) contribution was the introduction of "effect size," which means the standardized mean difference. In meta-analysis an estimate of the index of effect size is obtained for each study. The effect size estimates, then, can be averaged to obtain an overall estimate of effect size. Since theoretical constructs or concepts in psychology and business are measured in different ways and by different scales, the estimate effect size is the solution proposed by Glass (1976) to be scale-free indices for further statistical analysis. Two scale-free indices were suggested, namely, the standardized mean differences (effect size), and the product-moment correlation coefficient. Hedges & Olkin (1985) used the term "effect magnitude" to refer to differences other than means. However, the term "effect size" is being used as a generic term to indicate standardized differences, whether the differences are means, correlations, proportions, and so on.

Cohen (1977:9-10) provided a definition of the effect size as follows:

> Without intending any necessary implication of causality, it is convenient to use the phrase "effect size" to mean "the degree to which the phenomenon is present in the population," or "the degree to which the null hypothesis is false." Whatever the manner of representation of a phenomenon in a particular research in the present treatment, the null hypothesis always means that the effect size is zero.

Cohen (1977: 20) further elaborated that the goal of meta-analysis is to obtain a . . .

> pure number, one free of our original measurement unit with which to index what can be alternatively called the degree of departure from the null hypothesis of the alternative hypothesis, or the ES (effect size) we wish to detect. This is accomplished by standardizing the raw effect size as expressed in the measurement unit of the dependent variable by diving it by the (common) standard deviation of the measures in their respective populations, the latter also in the original measurement unit.

The introduction of an effect size had the positive effect of moving away from p-values and vote counts to parameters and models. This was a critical step forward. At times combinations of estimates were made when the underlying populations were different, however, it led to a variety of biased results.

Hedges (1990) maintained that the most significant contribution of meta-analysis is the focus on methodological

rigor in research reviewing. Methodological standards in original research help ensure the validity of the research. They exist because it is known that some methodological procedures are subject to biases that render research results invalid or at least uninterpretable. For example, post hoc hypothesis formulation, purposefully biased or nonrandom sampling in data collection, eliminating subjects whose behavior contradicts the research hypothesis, failure to use statistical methods to evaluate stochastic evidence, and failure to describe procedure clearly, may lead to difficulties in interpretation or to invalid research results. The methodological standards which are familiar to most researchers are an attempt to constrain variations in procedure in order to control biases and improve the validity of original research studies.

Hedges (1990) stated that research syntheses provide a survey of the available research evidence relevant to a specific problem. In that case, they serve a retrospective function. Research syntheses also have a prospective function that has been largely ignored. By identifying inadequacies in the research literature, syntheses may suggest efficient allocation of resources for future research. The inadequacy of resource studies may be revealed when there are too few relevant studies with

adequate controls to permit precise estimation of an overall average treatment effect or its variation across studies. A second sort of inadequacy arises when variations in study characteristics are too highly correlated to permit independent assessment of their association with treatment effects. A paradigm example is research area with both laboratory studies and field studies of a similar treatment. The laboratory studies have excellent control over treatment and assignment, i.e., high internal validity, but are removed from context and hence have low external validity. The field studies have less control over treatment and assignment, i.e., low internal validity, but are a representative of the context in which the treatment is expected to be used and hence have high external validity.

Meta-analysis can provide the understanding of the structure or pattern of the phenomenon being studied and to clarify the areas where subsequent studies will be most informative. To take advantage of the large number of studies being conducted, the complete descriptions of the studied and more detailed summary statistics published should be considered. Results may be obtained in a variety of forms, e.g., the most significant results in repeated studies, results that have a high surprise factor, in the sense of being contrary to folklore or expectations.

Olkin (1990: 6) provided a good analogy of the meta-analytic process as follows:

> What we should focus on are the insights that meta-analysis might provide. I like to think of meta-analytic process as similar to being in a helicopter. On the ground individual trees are visible with high resolution. This resolution diminishes as the helicopter rises, and in its place we begin to see patterns not visible from the ground. Indeed, astronauts have stated that the earth's beauty is unimaginable from ground level.

The use of meta-analysis has expanded dramatically in recent years. Guzzo, Jackson, and Katzell (1986) tabulated the number of journal articles and dissertations in Psychological Abstracts from 1967 to 1984 that were key words as meta-analysis. No entries were found from 1967 to 1976; after that period the rate of increase was rapid and consistent.

There have been over 500 applications of our meta-analysis methods alone in just the one area of the validity of personnel selection procedures; and applications have been made of these methods in many other areas in industrial-organizational psychology and organizational behavior (Hunter & Hirsh, 1987), as well as in other areas such as medical research (Baum et al., 1981; Halvorsen, 1986) and finance (Coggin & Hunter, 1983, 1987; Dimson &

Marsh, 1984; Ramamurti, 1989). The rapid growth of meta-analysis is likely to continue. In concluding his review of meta-analysis methods, Bangert-Drowns (1986:398) stated:

> Meta-analysis is not a fad. It is rooted in the fundamental values of the scientific enterprise: replicability, quantification, causal and correlational analysis. Valuable information is needlessly scattered in individual studies. The ability of social scientists to deliver generalizable answers to basic questions of policy is too serious a concern to allow us to treat research integration lightly. The potential benefits of meta-analysis method seem enormous.

Procedures in Meta-analysis

Johnson (1989) stated that meta-analysis, or quantitative reviews, utilizes statistical procedures to combine two or more empirical studies relating one variable to another. Meta-analysis combines studies' outcomes to see what effect one variable has on another, on an across-study basis. In the analysis, the effect sizes are averaged (integrated), and the composite effect size is tested to see whether it differs significantly from zero. Importantly, a test is also conducted to see whether the studies in question consistently find the overall result. An effect size of exactly 0.00 implies that there is exactly no -Y relationship in the study. Whether the effect size is positive or negative is defined in such a way that studies

whose outcomes are conflicting will have opposing signs.

Johnson (1989: 7) summarized steps to conduct a meta-analytic review as follows:

Step 1	Conceptualize relationship. In detail, specify the relationship to be examined, giving attention to the major theories and methods important in the literature.
Step 2	Gather relevant source reports. As completely as possible, locate and retrieve pertinent reports containing tests of the relationship specified.
Step 3	Code studies' qualities and compute effect sizes. Record the important qualities of each retrieved study, and if possible, compute an effect size for each test of the relationship reported.
Step 4	Analyze the data. Determine overall mean and consistency of effect sizes; use study qualities to explain any inconsistencies.
Step 5	Write report. Express the meta-analytic review in written form.

Johnson (1989) further elaborated that in the process of conceptualizing the relationship and the conditions under which it should vary in magnitude (or direction), the study qualities to code should become apparent. After the sample of studies is collected, the next step is to code them for their qualities and calculate effect sizes. Each study must be reliably entered into a data set such that its important characteristics and test(s) of the X-Y relationship are both explicated. In order to further describe the literature being integrated, it is also important to code the studies

for other qualities. For example, have the studies on the topic been published only recently or have they been around for a long time? Are there other qualities that can be useful to describe the literature? If so, they should be coded so that they can be displayed when the review is expressed in written form.

In regarding to the reliability of coding. Johnson (1989) suggested that to enhance the reliability of the coding of study qualities, a small subset of the studies to be coded can be used as a trial-run for the dimensions on the coding form. Two or more independent analysts should code the studies. If agreement is low for any of the dimensions, then the criteria for each questionable dimension should be more closely defined, and the process repeated.

To compute the study effect sizes, Johnson (1989) stated that each study in the meta-analytic sample should contain some statistic or statistics regarding the X-Y relationship. In the best case, these reports should be precise (e.g., means and standard deviations, F-tests, etc.), but these reports are often quite ambiguous (e.g., "group A did not differ from group B"). Regardless of the precision of study-outcome reports, the goal is to convert

the summary statistics in the source reports into standardized effect sizes so that they can be statistically integrated.

In general, studies report the examined relationship via one or more of the following statistics:

1. means (M) and standard deviations (SD);
2. t-tests;
3. F-tests (ANOVA);
4. r-values (point-biserial, Pearson product moment);
5. X^2 (chi-square) values;
6. proportions or frequencies; and
7. p-values.

Each of these statistics can be converted to a g-value in meta-analysis. The most precise information includes means and standard deviations, and t-, F-, and r-values (parametric tests). Other (nonparametric) tests can yield effect sizes but may be relatively imprecise. These tests include chi-square-values and tests of proportions (Cohen, 1977; Glass et al., 1981; Winer, 1971). However, if only imprecise information is available, Rosenthal (1984) suggested that it should be used so that potentially valuable study-outcome information will not be lost.

Interpretation of the Effect Size Values

Once an effect size has been calculated, the next step is to interpret what it means. Wolf (1986) suggested a method to construct a 95 or 99 percent confidence interval

around the average effect size to examine whether it encompasses zero. It is customary to report the standard deviation associated with the average effect size across studies to provide some index of the variability associated with it.

So far, no such distribution of effect size in a given field is available, and often there is no standard against which to evaluate an effect size. Cohen (1977) provides rough guidelines to interpret the effect size as follows: d = .2 (small effect), d = .5 (medium effect), and d = .8 (large effect), with the caution that it is better to obtain these standards for comparison from the professional literature than to use these somewhat arbitrary guidelines.

Rossi and Wright (1977) maintained that a 0.50 standard deviation improvement in achievement scores is considered to be a conventional measure of practical significance. Tallmadge (1977) reported that the National Institute of Education's Joint Dissemination Review Panel observed that usually one-third (0.33 Sd_x), but at times as small as one-fourth (0.25 Sd_x), standard deviation improvement is considered to be educationally significant.

Cohen (1977) provides a table for translating the effect size d into measures of nonoverlap. In this approach, the average effect size is transformed into a graphical representation of the effect degree of overlap between the control and experimental groups. The percentiles of nonoverlap (U_3), corresponding to various values of the effect size d, are provided in Cohen's U_3 tabled values for a power analysis. These values are essentially equivalent to the values obtained from a normal distribution table.

For meta-analysis of correlational studies, it is difficult and controversial to interpret the effect size. Cohen (1977) provided rough guidelines for small (r = .10), medium (r = .30), and large (r = .50) effect sizes.

While not resolving the problem of interpretation of correlational effects, Rosenthal and Rubin (1982) provided a more insightful, and perhaps practical way to evaluate the importance of correlation coefficients. This procedure is based on the mathematical transformation of a correlation coefficient to chi square and provides what Rosenthal and Rubin (1982) called a "Binomial Effect Size Display" (BESD) in a form of 2 x 2 tables. The BESD is the estimated difference in success probabilities between treatment and

control. The success rate is based on the increment and decrement around chance, namely, 0.5 ± (r/2). Practically, this transformation is simple to calculate and easy to interpret r in terms of the effect on success or improvement rates attributable to treatment procedures.

According to Hedges and Olkin (1985), if the results of the reviewed studies are inconsistent, meta-analysis uses the samples' attributes to try to explain the inconsistency. In other words, the effect sizes are divided into two or more groups based on their distinctive study characteristics, and statistical tests are conducted to see if the division(s) explains the magnitude of effect sizes and substantially reduces the original inconsistency. This model-fitting procedure is repeated for as many study attributes as the analyst sees fit to examine.

Johnson (1989) stated that meta-analysts sometimes examine visual displays of effect-size information, and attempt to locate and remove outliers, or extreme cases, from among a class of inconsistent effect sizes. Studies yielding effect sizes identified as outliers can be examined to determine whether they appear to differ from the other studies. Outlier-identification and outlier-removal techniques can result in stronger conclusions regarding a

research literature. The use of visual displays, or graphs can assist the analyst in determining whether anomalies among the effect sizes exist. For example, these displays may show whether effect sizes vary in a curvilinear relationship to a predictor. These displays may also determine if there are outliers among a class of effect sizes.

The limitation in conducting meta-analysis is on the time and effort consuming task. Johnson (1989) maintained that even those who intimately understand meta-analysis and have conducted such reviews have to economize and/or simplify the process of conducting meta-analyses, which certainly tend to be exhausting endeavors.

Although it is becoming apparent that met-analytic reviews hold a number of advantages over narrative reviews, it should be emphasized that the very best literature review will combine the best of both of these emphases, and thus capture the full impact and richness of a literature. Masters, Cantor, and Hedges (1988: 3) stated that "a review with a careful meta-analysis but weak or irrelevant conceptualization offers little for the advance or consolidation of knowledge." Therefore, analysts should take great care to develop a theoretical framework and

justify to the fullest possible extent the decisions they make in the course of conducting a meta-analysis.

An Illustrative Example of Meta-Analysis

Willson & Putnam (1982) studied the effects of protest sensitization in experimental design by examining the contribution of pretests to variables assessing human educational or psychological performance. Over 160 separate statistical effects were initially examined from 32 studies. Then, 30 effects from the nonrandomized studies were eliminated as a result to their mean effect size differing significantly from the average randomized study effect size. Willson and Putnam argued that the non-randomized study effects exhibited systematic but unknown bias and therefore should be excluded from further analysis. One of the conclusions drawn from the remaining 134 study effects was that, on the average, pre-tests had a general elevating effect on post-tests of 0.22 standard deviation units. The elevating effect was greater for cognitive and personality outcomes and less for attitude outcomes. Period of time between pre- and post-testing was related to the magnitude of the effect sizes, with smaller effects associated with durations less than one day to more than one month.

These findings may be compared to an earlier traditional literature review by Welch & Walberg (1970) which summarized the significance of the individual study results. Welch and Walberg concluded that long-term cognitive effects are small or nil, although there may be short-term effects. Welch and Walberg suggested that the effect is greater for attitude rather than for cognitive tests, in contrast to the empirically derived results of Willson and Putnam's meta-analysis. Willson and Putnam's results suggest that researchers need to include pretest as a design variable when it is present and to estimate its effect, particularly in situations where its effects are strongest.

Criticisms on Meta-Analysis

Olkin (1990) maintained that the methodology of meta-analysis is straightforward and has often been attempted by novices both in the substantive field and in statistics. This led to an overuse, often accompanied by abuse. Consequently, there was a swell of opposition to meta-analytic techniques. Abuses in statistical analyses are rather common and occur even with very standard statistical procedures, such as analysis of variance and covariance, log-linear analysis, and multivariate analysis.

As anticipated with the introduction of any new approach, meta-analysis has not been free from criticism. Glass et al. (1981) grouped the criticisms into four categories as follows:

1. Logical conclusions cannot be drawn by comparing and aggregating studies that include different measuring techniques, definitions of variables (e.g., treatment, outcomes), and subjects because they are too dissimilar.
2. Results of meta-analyses are uninterpretable because results from "poorly" designed studies are included along with results from "good" studies.
3. Published research is biased in favor of significant findings because nonsignificant findings are rarely published; this, in turn, leads to biased meta-analysis results.
4. Multiple results from the same study are often used which may bias or invalidate the meta-analysis and make the result appear more reliable than they really are, because these results are not independent.

The first criticism was referred to as the "apples and oranges problem" (Glass, 1976). It is argued that diversity makes comparisons inappropriate. This issue may be dealt with empirically by coding the characteristics for each study and statistically testing whether these differences are related to the meta-analytic results. The second criticism can be handled by coding the quality of the design employed in each study and examining whether the results differ for poorly and well designed studies.

Hedges (1990) asserted that the published literature is susceptible to the claim that it is unrepresentative of all studies that may have been conducted. There is considerable empirical evidence that the published literature contains fewer statistically insignificant results than would be expected from the complete collection of all studies actually conducted (Bozarth and Roberts 1972). There is also direct evidence that journal editors and reviewers intentionally include statistical significance among their criteria for selecting manuscripts for publication (Bakan 1966; Greenwald 1975). The tendency of the published literature to overrepresent statistically significant findings leads to biased overestimates of effect magnitudes from published literature (Lane and Dunlop 1978; Hedges 1984), a phenomenon that was confirmed empirically by Smith's study (1980) of ten meta-analyses, each of which presented average effect size estimates for both published and unpublished sources.

In relation to the third criticism that the bias in favor of significant results in published research, Glass (1980) suggested that it can be dealt with in two ways. One approach is to review results in books, dissertations, and unpublished papers presented at professional meeting and compare them to the results for published articles. Another

approach is to estimate the number of additional studies with nonsignificant results that would be necessary to reverse a conclusion drawn from the meta-analysis, thus providing some estimate of the robustness and validity of the findings.

Perhaps the most promising strategy for dealing with missing effect size data is to use many new analytic techniques that have been developed for handling general missing data problems (e.g., Dempster, Laird, and Rubin 1977; Little and Rubin 1987). Many examples of work in this tradition can be found in applications to sample surveys (Madow, Nisselson, and Olkin 1983; Madow, Olkin, and Rubin 1983; Madow and Olkin 1983; Rubin 1987). These strategies, as applied to research synthesis, would involve using the available information (including study characteristics) to estimate the structure of the effect size data and the relationships among study characteristics and effect sizes (Hedges 1988). They can be used to study the sensitivity of conclusions to the possible effects of missing data.

The fourth criticism concerns the number of results from the same experimental study that should be used. Some meta-analyses (Kulik, 1983; Mazzuca, 1982) choose to perform separate analysis for each different outcome (criterion or

dependent variable), while others, including Glass, choose to lump them into the same analysis. Alternatively, some reviewers choose to limit themselves to a fixed number of results, perhaps two, from each study (Gilbert, McPeek, and Mosteller, 1977), while other take the average of all results from the same study. Again, this is an empirically answerable issue that may influence the obtained results.

The criticisms on meta-analysis include the assertion that interaction effects are ignored at the expense of main effects (Cook and Leviton, 1980). This issue can be dealt with by examining the potential mediating effects of substantive and methodological characteristics of studies.

The Role of Meta-Analysis in The Model and Theory Development in this Study

To construct theories, one must first know some of the basic facts, such as the empirical relations among variables. These relations are the building blocks of theory. Meta-analysis provides these empirical building blocks for theory construction. Meta-analytic findings tell us what it is that needs to be explained by the theory. The results of meta-analysis are indispensable for theory construction; but theory construction itself is a creative process distinct from meta-analysis.

If science is viewed as the accumulation and refinement of information and knowledge (Hunter et al., 1982; Pillemer and Light, 1980), it then becomes critical to establish guidelines for reliable and valid reviews, integrations, and syntheses of studies examining similar research questions (Cooper, 1982; Jackson, 1980). The body of knowledge in the field of international business also may be accumulated and refined in the same manner. An attempt to integrate research findings for theory construction in international business can be undertaken by using procedures in meta-analysis which permit quantitative reviews and synthesis of the research literature.

Chapter Summary

According to the literature review on the current status of international business, it is evident that the sector of business transactions and operations is globalized. In the 1990's, opportunities open to every economy. The importance of foreign trade and production increased in almost all major economies together with the foreign component of national economic decision making at the macro and micro level. The foreign attributes of the study of the practice of international business became more important. The complexity of business transactions and operations suggests the need for a model that is global. Dunning (1989) maintained that scholars need not only to draw upon different disciplines, but to do so in a coordinated way.

Apparently, international business is a dynamic phenomenon which exists in the global economy today. To explain and to predict this phenomenon, it is inevitable to specify the relationship among variables and to hypothesize a conceptual system, namely, to develop a theory or a model. Theory and model construction can be undertaken in a number of ways. Marx (1970) classified modes of theory construction in behavioral science which resulted in four types of theory, namely, deductive theory, inductive theory,

functional theory and model.

One of the tools to conceptualize the causal relations among a set of variables is called "path analysis." In drawing a causal diagram, Hunter & Gerbing (1982) proposed two kinds of diagrams, namely, a qualitative causal diagram and a quantitative causal diagram. The building blocks of a theory or model can be obtained by a variety of ways. Salipante, Notz & Bigelow (1982) proposed "matrix analysis" for literature review to integrate sets of findings to provide the building blocks and foundation for a theory construction in social science, which contains enormous literature beyond the boundaries of a single study and an area of specialty. The reviews could be strengthened by giving more attention to the search for contingencies and by utilizing analytical procedures, such as "meta-analysis" proposed by Glass (1976). In general, meta-analysis of validity threats is conservative because it can identify a combination of threats that explain the review findings. Meta-analysis provides these empirical building blocks for theory construction. However, the theory construction itself is a creative process distinct from path analysis, matrix analysis, and meta-analysis.

Chapter 3

RESEARCH METHODS AND PROCEDURES

Research Approach

The present research attempts to develop a conceptual framework to integrate the tremendous amount of data and information related to international business in order to deal with the complexity in business operations, practically and theoretically. To operationalize the attempts, a number of research methods was employed to build a model, to develop a measure of success in international business operations, to demonstrate the versatility and applicability of the index, to test a set of hypotheses derived from the model, and to formulate a theory.

The approach used in the first section of this study is an inductive method, i.e., relevant research findings in international business, discovered in previous empirical studies, were integrated to build a total picture of international business operations. In particular, the method is based on the inductive modes of theory construction (Marx, 1970). The path of relationship among variables was derived by using path analysis (Hunter & Gerbing, 1982). The building blocks of the model and theory were identified by using matrix analysis (Salipante, Notz & Bigelow, 1982).

The integration of statistical findings, which used the same set of variables in different studies, was undertaken by using meta-analysis (Hedges & Olkin, 1985) to draw a general conclusion.

The research approach in the second section of this study is based on a method called factor analysis, by which a defined set of empirical data, from a defined group of companies, was employed to develop a new measure of success in international business operations. Kerlinger & Pedhazur (1973), stated that factor analysis is a method for reducing a large number of variables to a smaller number of presumed underlying unities called factors. Factor analysis explains many variables, usually without independent and dependent variable distinction, by showing the underlying structure, similarities, and differences. In addition, the factor analyst can literally discover categories, unities, and variables. Factors are usually derived from the inter-correlations among variables. In this study, a success index was derived from three profit-related financial variables by using factor analysis.

In the third section of this study, the newly developed index was employed to measure and compare financial success levels of the top-ranked companies in twenty four countries across four selected industries. This part of the study is

a fact-finding venture concerning the business success of the companies ranked in the Business Week's Global 1000 between 1987-1990. It is an application of the newly developed index in the real world. Four thousand sets of financial data were entered, computed, categorized and analyzed. A comparative graphic approach was employed in this part of the research.

The research approach in the fourth section of this study is based on a method called multiple regression analysis. In this section, a hypothesis was derived from the findings in the first section (the model) and the third section (the study of financial success). The hypothesis stated that the level of financial success of a global company linearly relates to the economic conditions in its parent country. Multiple regression analysis was employed to test this hypothesis. Levin & Rubin (1991) stated that the principal advantage of multiple regression is the utilization of more information available to estimate the dependent variable. Simple, two variable correlations may be insufficient to determine a reliable estimation equation. The addition of data from more independent variables may describe the relationship with greater accuracy. Multiple regression is designed to test explicit hypotheses about the relations between several independent variables and a dependent variable. Therefore, this method was employed to

test the hypothesis and to illustrate the validity of the construct of a success measure.

In the last section of this treatise, all findings from the first to the fourth sections were inclusively integrated to formulate and refine the theory of international business operations. A deductive method of theory construction was employed in this section. According to Marx (1970), a deductive theory represents a two-way interaction between a system of symbols and observations. Deductions from the logically related propositions of the theory are derived and then tested by means of observations under controlled conditions. In turn, the propositions are modified either in whole or in part by the results of those tests. Ideally, a theory must be developed to guide the design of the study. The explanation thus ideally comes before the data collection needed to verify the explanation. In practice, often only part of a theory is developed in advance, and other parts are left to be filled in after the data analysis. The approach in the current study follows the latter method of model and theory construction.

Research Design

The present study is designed to carry out at least a full cycle in the process of model and theory development. This process can be illustrated as shown in Figure 3.1. The observed data were collected, analyzed and integrated to be employed as the building blocks for the model and theory development. Then a set of hypotheses was derived to be tested. Next, instrumentation was undertaken. Data collection and data analysis were performed in order to test the derived hypotheses. The results from the analysis and the overall findings then become the observed data to be used as the input to refine the model and theory.

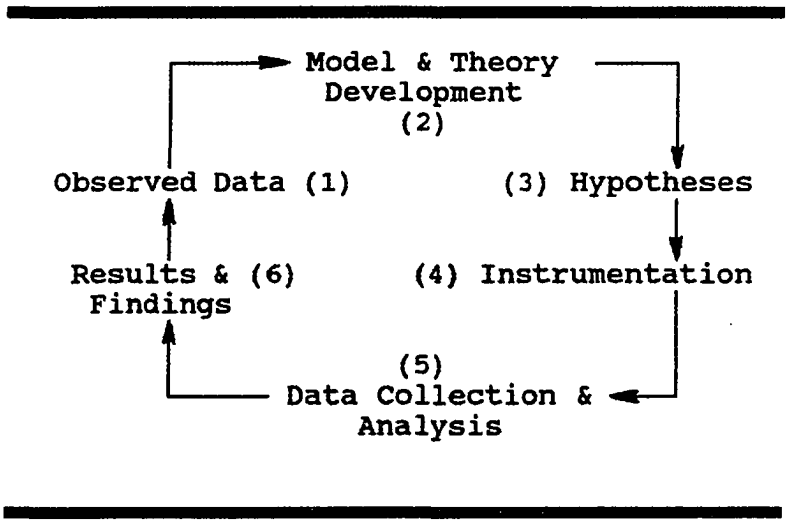


Figure 3.1

The Research Design of the Present Study

On the practical side of this study, the newly developed success measure was employed to compare business performance of the global companies in twenty four countries across four selected industries including the country composite.

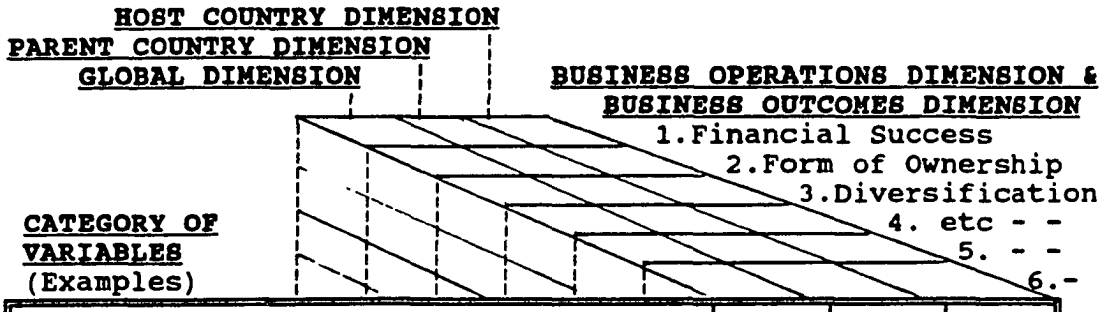
Research Instrumentation for the Integration of the Findings about Relationships Among Variables in International Business Operations in Prior Studies

In the first part of this research, two matrices were created to accommodate the variety of variables from the previous studies. The most important function of these matrices is to categorize systematically and identify the relationships among variables. The domain of each variable was specified. These domains are termed "dimensions." They are as follows:

1. Parent country dimension,
2. Host country dimension,
3. Global dimension,
4. Business operations dimension,
5. Business outcomes dimension, and
6. Multinational enterprise dimension.

The definitions of the six dimensions are provided in the section of Definitions of Terms in Chapter 1, page 15-26.

The pictorial diagrams of the matrices are as shown in Figure 3.2 and 3.3. The matrices were designed to contain essential data and information of the statistical results and the findings of the previous studies (not shown in the pictorial diagrams). These data and information were used in further analysis.



1. Resource Advantage			
2. Marketing			
3. Technological Transfer			
4. Labor Cost			
5. Currency Exchange Rate			
6. Trade Policy			
7. Political Stability			
8. Tax, Tariff and Duty			
9. Business Laws and Regulations			
10. Cultural Differences			
11. etc.- - - - - - - - -			
12. - - - - - - - - - - -			
13. - - - - - - - - - - -			
14. - - - - - - - - - - -			
15. - - - - - - - - - - -			

Figure 3.2

The Matrix of Variables with Specified Dimensions focused on Parent Country, Host Country, Global and Business Dimensions.

MULTINATIONAL ENTERPRISE DIMENSION CATEGORY OF VARIABLES (Examples)	BUSINESS OPERATIONS DIMENSION & BUSINESS OUTCOMES DIMENSION 1. Financial Success	2. Form of Ownership	3. Diversification	4. etc. - -	5. - -	6. - -
1. Technological Advantage						
2. Research & Development						
3. Corporate Culture						
4. Human Resources						
5. Human Relations in Organization						
6. Product/Service Quality						
7. Budgeting & Control						
8. Staffing System						
9. Compensation & Rewards						
10. Organizational Politics						
11. etc.- - - - - - - - - -						
12. - - - - - - - - - - - -						
13. - - - - - - - - - - - -						
14. - - - - - - - - - - - -						
15. - - - - - - - - - - - -						

Figure 3.3

A Matrix of Variables with the Specified Dimensions focused on Multinational Enterprise Dimension and Business Dimensions

The matrices, as shown in Figure 3.2 and 3.3, served as a structural guideline for database design to collect statistical and descriptive information from previous studies. The database was designed and arranged as shown in Figure 3.4.

1	TITLE
2	AUTHOR(S)
3	YEAR
4	JOURNAL
5	DIMENSION OF VARIABLE
6	SET OF VARIABLE
7	INDEPENDENT VARIABLE
8	DEPENDENT VARIABLE
9	TYPE OF STUDY
9	DEGREE OF RELATIONSHIP
10	SAMPLE SIZE
11	SIGNIFICANCE LEVEL

Figure 3.4

The Database Categories used for the Collection of Statistical and Descriptive Information from Prior Studies.

Figure 3.4 shows a database design for collecting statistical data and descriptive information from prior studies related to international business operations.

Criteria for Selecting Sources of Statistical and Descriptive Information

The literature review in Chapter 2 revealed a substantial body of research in the area of international business operations. The richness of data sources was available for further integration to develop a total picture of international business operations. To identify the building blocks of the theory and model, statistical and descriptive information related to the relationship among variables could be drawn from previous studies. Criteria for the selection of a study were as follows:

1. The study must relate to international business.
2. The independent and dependent variables of the study must be clearly specified, and must be able to categorized into one of the following dimensions:

   1.1 parent country dimension,
   1.2 host country dimension,
   1.3 global dimension,
   1.4 multinational enterprise dimension,
   1.5 business operations dimension, and
   1.6 business outcomes dimension.

3. The study must have been published in an academic journal or other publication during 1986-1991.
4. The selected case discussion must base on direct experience or secondary data analysis, to be included to enrich the qualitative information.

Procedure to Collect Statistical and Descriptive Information

STEP 1. Via computer search and library catalogues, five hundred and eighty nine articles were identified and located.

STEP 2. The abstract of each article identified in step 1 was studied to see if it met the criteria for selection.

STEP 3. One hundred and fifty nine articles which met the criteria for selection were traced to the original publications.

STEP 4. By using a form as shown in Figure 3.4, statistical and descriptive data were collected from the original publications. The statistical information consisted of:

1) sample size study,
2) significance level, and
3) degree of relationships among the variables.

The important descriptive information consisted of:

1) type of study,
2) description of the independent variable,
3) description of the dependent variables,
4) conclusions,
5) year of publication.

STEP 5. Out of 159 studies, 77 sets of statistical and descriptive information were found to have sufficient information for their entry into the database for further analysis.

Analysis and Integration of the Statistical and Descriptive Information

STEP 1. Seventy seven sets of statistical and descriptive information were entered into the database in the format shown in Figure 3.4, page 203.

STEP 2. The data were sorted and arranged in the structure as shown in Figures 3.2 and 3.3, pages 201 and 202.

STEP 3. The relationships among variables in the matrix were

located in the cells.

STEP 4. Matrix analysis was undertaken, using a procedure described by Salipante, Notz & Bigelow (1982).

STEP 5. An integration of the statistical information, in any cell having more than one study, was undertaken by means of meta-analysis as described by Hedge & Olkin (1985), and Johnson (1989). See the review and procedure of meta-analysis in Chapter 2.

STEP 6. The paths of relationships among variables were specified by using method of path analysis as described by Hunter & Gerbing (1982).

STEP 7. A model and theory of international business operations were developed by using the inductive methods of construction as described by Marx (1970). See the review in Chapter 2.

Research Design for a Development of the Financial Success Index

In the second section of this research, a rationale was established to underpin the design and development of a new success measure of business operations. This rationale was derived from the DuPont Model of Financial Analysis, in which three profit-related ratios were selected to be tested if they had the necessary degree of association to be combined for the development of a success measure. The modified DuPont Model is shown in Figure 3.5.

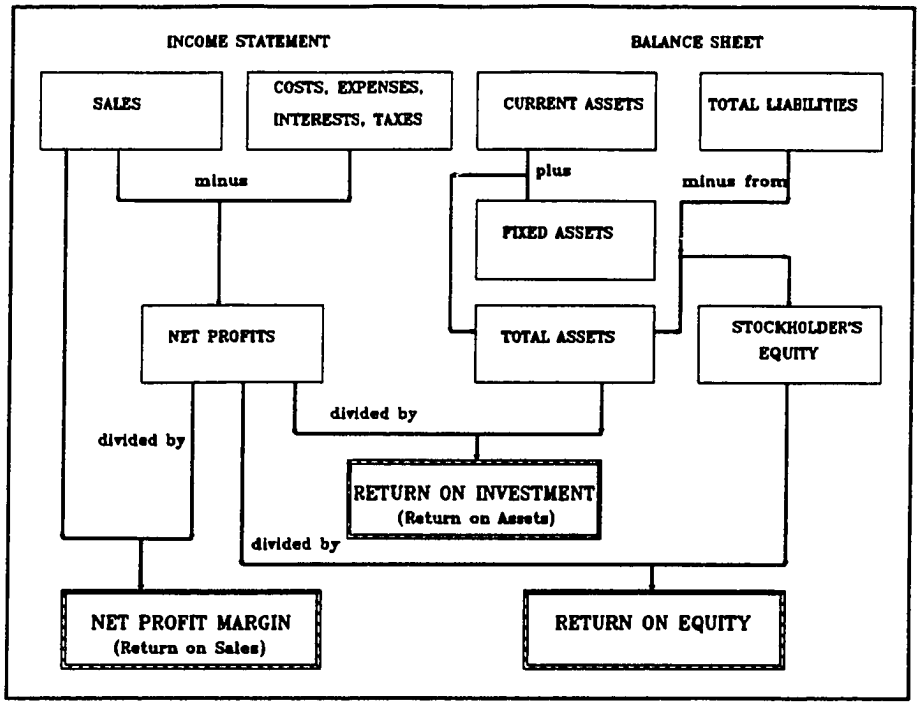


Figure 3.5

The Modified DuPont Model of Financial Analysis: the Foundation for Developing a new Financial Success Measure

Figure 3.5 shows three profit-related ratios, i.e., Return on Equity, Return on Investment, and Net Profit Margin in relation to other sources of financial data of a company. Although business practitioners in the Western world are more concerned about Return on Equity and Return on Investment in business operations, an overview of the empirical data showed that some global companies in the Eastern world also are concerned about Net Profit Margin. This was another reason, in addition to the fact that it is a profit-related ratio, to include the Net Profit Margin in

the analysis and synthesis.

Based on the Modified DuPont Model of Financial Analysis, a form was designed to collect financial data of 598 companies ranked in the Global 1000 between 1987-1990. This form also includes three columns for the three ratios which were calculated after the completion of data collection. The form is shown in Figure 3.6.

FISCAL YEAR 1987-1990						
No.	Sales	Net Profits	Assets & Equity	Return on Equity	Return on Invest-ment	Net Profit Margin
...	.....	.....	.....	....	....	....
...	.....	.....	.....	....	....	....
...	.....	.....	.....	....	....	....

Figure 3.6

A Form for Collecting Financial Data of the Companies Ranked in the Business Week's Global 1000 between 1987-1990

Criteria for Data Selection in Success Index Development

To develop a financial success measure from empirical data, 598 financial data sets were randomly sampled from 4,000 sets of data of the global companies. The criteria for selection were as follows:

1. The companies must be ranked and listed in the Global 1000 by the *Business Week*, published between 1988-1991 (fiscal year 1987-1990).
2. The available financial data must be sufficient for the calculation of the three profit-related ratios, i.e., Return on Equity, Return on Investment, and Net Profit Margin.
3. The currency of the data must be in US dollars, translated and adjusted for that fiscal year.

Data Collection and Analysis Procedures in Success Index Development

STEP 1. By employing the form shown in Figure 3.6, financial data for 598 companies were randomly sampled from a population of 4,000 data sets.

STEP 2. Three financial ratios, i.e., Return on Equity, Return on Investment, and Net Profit Margin, were computed for each case.

STEP 3. The three ratios from each of the 598 data sets were entered to be analyzed for intercorrelations.

STEP 4. Factor analysis was undertaken to obtain the factor loading of each variable on the common factor.

STEP 5. A new financial success measure was produced by means of taking a linear combination of the three **weighted** financial ratios. The weights were obtained from the factor loadings in Step 4.

STEP 6. A simplified formula to calculate the newly developed success index was obtained by appropriate rescaling of the results.

Research Design for Financial Success Comparison Among Countries Across Selected Industries

To illustrate the versatility and practicality of the newly developed index, the success index was employed to analyze and compare the levels of business success of the global companies in 24 parent countries across four selected industries, including the country composites. The four selected industries were: automobile, beverages & tobacco, health & personal care, and telecommunications. For practical purposes, the four year trends (1987-1990) of the success index were presented along with the sales trends in the

corresponding year. The criteria for data selection were the same as specified in the section on the development of the success index.

Data Collection and Data Analysis Procedures for Financial Success Comparison Among Countries Across Four Selected industries

STEP 1. Financial data about 4,000 companies ranked in the Global 1000 between 1987-1990 in 24 countries were arranged and categorized into four industry groups: country composite, automobile, beverage & tobacco, health & personal care, and telecommunications, and country composite. The arrangement was used for each fiscal year.

STEP 2. The combined financial data in each category were computed for Return on Equity, Return on Investment, and Net Profit Margin.

STEP 3. The three financial ratios of each category in Step 2 were entered to be computed for the success index by employing the formula obtained from the development designed on page 206.

STEP 4. The values of the financial success indices in four consecutive years (1987-1990) were transformed into line graphs along with the total sales of the corresponding year. Market shares and the amount of sales were also computed and presented to enrich the information for a comprehensive interpretation.

Research Design to Test for Linear Relationship between the Financial Success of Global Companies and the Economic Conditions in their Parent Countries

Results from the integration of the relationships among variables in international business operations suggest a hypothesis that the level of financial success in business operations has a linear relationship with economic conditions in the parent countries of the companies ranked in the Global 1000. Therefore, fourteen economic indicators of twenty countries were chosen to be independent variables. The indicators were selected on the criteria that they must be related to foreign trade and domestic consumption conditions of the parent country. All values were translated into US dollars and were adjusted for inflation and differential exchange rates. If the indicator is an index, it must have been calculated from the same base year (1987).

The success indices of the five categories from the previous part of this study served as the dependent variables for each category. Multiple regression analysis was employed to test the hypothesis.

Procedures to Test the Hypothesis

STEP 1. The success indices of the five categories presented in the third part of this study were arranged and transformed for multiple regression analysis.

STEP 2. Fourteen economic indicators of each parent country were obtained from the *World Tables*, published by World Bank in 1991 (see Appendix B).

STEP 3. A correlation matrix of the fourteen economic indicators was calculated to assure that the variables which were correlated with each other will not be used together to explain and predict a dependent variable.

STEP 4. A stepwise method of multiple regression analysis was undertaken for each category of the success index used as the dependent variable, i.e., country composite, automobile, beverage & tobacco, health and personal cares, and telecommunications.

STEP 5. Analysis of variance of the adjusted R square was undertaken to test the significance of the regression in each category.

STEP 6. The variables in the regression equation were tested for significance by using a Student's t test.

STEP 7. In each category, an equation was formulated to predict the financial success level of business operations in a country, based on a specific set of economic indicators in the parent country. The formulas were obtained from a linear combination of the independent variables (economic indicators) in a multiple regression equation, weighted by the beta weight of each variable.

Limitations

This research attempts to develop a new model and theory by synthesizing research results which were available as secondary sources in the database collected. There may be additional research findings not included in the

available databases, or neglected because they did not contain the terms used in the computer search to locate the published documents. Although the study was limited by available sources, it was the first to attempt to integrate research findings at the macro level of integration to achieve a comprehensive understanding of international business operations.

In the development of the success index and the comparison of success levels among countries across selected industries, a large amount of financial data were required. Due to the time horizon and budget limitations, it was impractical to obtain financial data directly from companies in twenty four countries. Therefore, the data used in this study came from published secondary sources.

The source of financial data indicated that data were translated and adjusted, however, restatement was not indicated. The researcher was aware that net profits, as reported by companies in their financial reports, were affected by different depreciation rates used, which varied from companies to companies and from country to country. However, profit-related ratios can be used as a measure of profitability which reflects financial success.

The economic indicators used in the multiple regression analysis were obtained from publications of the World Bank and the United Nations which indicated the adjustment for inflation and used 1987 as the base year.

Chapter 4

RESEARCH FINDINGS

The Arrangement of Presentation

The research findings presented in this chapter are arranged in four sections. The first section comprises six tables of the matrix results from an anlysis of prior studies related to international business operations, published between 1986-1991. This section provided a foundation for the construction of a grand model and a theory of international business operations, from which a set of hypotheses was derived for verification.

The second section of this chapter comprises results of an attempt to develop a new measure of business success by employing financial data from 598 companies ranked in the Global 1000 between 1987-1990. Based on the modified DuPont Model of financial analysis presented in Chapter 3, three profit-related financial ratios were integrated by using factor analysis. The new construct is termed the "Financial Success Index" or the FSI. A formula for the calculation of the FSI is also presented.

To illustrate the versatility and practicality of the newly developed index, financial ratios of 4,000 companies ranked in the Global 1000 between 1987-1990 in 24 countries were computed and arranged into categories to be calculated

for the FSI. The third section of this chapter presents the FSI of the country composite and four selected industries, namely, automobile, beverage & tobacco, health & personal cares, and telecommunications. The four-year FSI trends are presented along with the sales trends of each country. This section comprises ten tables and twenty three graphs.

From the results of the matrix analysis presented in the first section of this chapter, a pair of independent-dependent variables was selected to test the main hypothesis that the level of financial success in business operations has a linear relationship with economic conditions in the parent countries of the companies ranked in the Global 1000. Fourteen economic indicators of twenty countries were chosen to be independent variables. The FSI's in each of the five categories presented in the third section were used as the dependent variables. The results of multiple regression analysis are presented in the last section of this chapter, which comprises five tables of individual categories and a summary table of the overall results.

An interpretation of the overall results regarding the validity of the newly developed construct, FSI, is presented at the end of Chapter 4. The implications of the findings on the development of a model and theory of international business operations are arranged to be in Chapter 5.

4.1 Matrix Analysis of the Previous Studies Related to Multinational Enterprises and International Business Operations: The Studies Published Between 1986-1991

This section of Chapter 4 presents matrix tables of the results from an integration of research findings in previous studies published between 1986-1991. In the preliminary stage, 547 articles were traced and reviewed. The related articles were identified and categorized. There were 159 articles which fulfilled the initial requirement of being related directly to international business operations and business success or outcomes. The 160 articles were further classified and sorted by their methods of study. In the final stage, 77 studies fulfilled the requirement of being empirical studies or being written about the empirical results. Each study was extracted for the independent variable, dependent variables, sample size, statistical method used and the level of significance, interpretation and conclusion. The total number of samples used in all studies was 16,722 which included field survey, secondary data analysis and case study. Studies with the same set of variables were integrated by using meta-analysis. No contradictory result was found in the repeated studies.

The extracted information was then sorted by the categories of independent and dependent variables. The first category results are presented in Table 4.1.

Table 4.1

Matrix Analysis of Prior Studies on the Relationships among Dependent Variables in the Business Operations Dimension and Independent Variables in Parent Country, Host Country, Global and Multinational Enterprise Dimensions.

INDEPENDENT VARIABLES	CATEGORY	DIMENSION OF INDEPENDENT VARIABLE				DEPENDENT VARIABLES	CATEGORY IN BUSINESS OPERATIONS DIMENSION	SMP SIZE (N)	Ref. no.
		PARENT	HOST	GLOBAL	MNE				
Cost advantage	Cost		+*			Foreign Direct Investment	Investment	7	115
Competitors' FDI	Competitor		+**			Foreign Direct Investment	Investment	17	106
Competitors' FDI	Competitor		+*			Foreign Direct Investment	Investment	20	117
Influence on decision	Control				+***	Staffing	Human resource	115	78
Cultural type	Culture	+*				Decision process	Management	294	125
Cultural distance	Culture		+*			Marketing effectiveness	Marketing	478	160
Cultural differences	Culture		+*			Consumer's intention	Marketing	429	2
Cultural differences	Culture	+*	+*			Negotiation process/outcomes	Negotiation	462	81
Cultural differences	Culture	+*				Management attitude	Management	314	120
Cultural constraints	Culture		+*			Export attitude	Marketing	114	50
Cultural differences	Culture	+***			+***	Style and self-concept	Management	1126	83
Culture-based practices	Culture		+***			Wage	Rewards	41	36

Note: Statistical significance, * = .05, ** = .01, *** = .001, nr = not reported, ns = not significant
+ = positive relationship, - = negative relationship

Table 4.1 (continued)

Matrix Analysis of Prior Studies oN the Relationships among Dependent Variables in the Business Operations Dimension and Independent Variables in Parent Country, Host Country, Global and Multinational Enterprise Dimensions.

INDEPENDENT VARIABLES	CATEGORY	DIMENSION OF INDEPENDENT VARIABLE				DEPENDENT VARIABLES	CATEGORY IN BUSINESS OPERATIONS DIMENSION	SMP SIZE (N)	Ref. no.
		PARENT	HOST	GLOBAL	MNE				
Market trends	Consumer			nr		Marketing strategy	Marketing	nr	131
Presence of home customers	Consumer		+*			Branching	Market Diversification	30	158
Presence of home customers	Consumer		+*			Branching	Market Diversification	23	107
Exchange rate	Currency				nr	Methods of translation	Translation	37	105
Market size & economic development	Economic		+**			Foreign Direct Investment	Investment	23	107
Country characteristics	Distribution		+*			Partner selection	Form of entry	81	23
Partner for market access	Distribution		+*			Foreign Direct Investment	Investment	9	115
Country of manufacturing	Image	+***				Consumers' perception	Marketing	240	155
Leadership substitutes	Leadership				ns	Employee's performance and satisfaction	Human resource	195	124
Advertising information	Mass-media		+**			Uses of standardized information	Advertising	85	24
Political Risk	Politic		+**			Foreign Direct Investment	Investment	14	114
Product development over time	Product quality	+**				Consumer's perception	Marketing	1113	51
Information disclosure requirements	Regulations		nr			Information disclosure	Information control	28	79

Note: Statistical significance, * = .05, ** = .01, *** = .001, nr = not reported, ns = not significant
+ = positive relationship, - = negative relationship

Table 4.1 (continued)
Matrix Analysis of Prior Studies on the Relationships among Dependent Variables in the Business Operations Dimension and Independent Variables in Parent Country, Host Country, Global and Multinational Enterprise Dimensions.

INDEPENDENT VARIABLES	CATEGORY	DIMENSION OF INDEPENDENT VARIABLE				DEPENDENT VARIABLES	CATEGORY IN BUSINESS OPERATIONS DIMENSION	SMP SIZE (N)	ref no.
		PARENT	HOST	GLOBAL	MNE				
Country's specific conditions	Regulations	nr	nr			Global standard rules	Rules	36	65
Legal requirements	Regulations		+*			Degree of ownership	Form of ownership	47	72
Legal requirements	Regulations		+*			Market-based pricing	Marketing	164	52
Government economic control	Regulations	+*				Foreign Direct Investment	Investment	208	146
Regulations on data flow	Regulations	nr	nr			Problems in data flow	Communication	138	104
Firm's size	Characteristic				+*	Foreign Direct Investment	Investment	20	117
Firm's size	Characteristic				+*	Joint venture	Form of ownership	187	96
Firm's size	Characteristic				+*	Market-based pricing	Marketing	164	52
Technological advantage	Technology				+*	Foreign Direct Investment	Investment	9	80
Technological support, R&D	Technology	+*				Sales, Production	Productivity	686	25
Politic/economic control	Trade Policy		nr			Foreign Direct Investment	Investment	nr	145
Stage of liberalization	Trade Policy		+*			Export amount	Sales	3	93
Rewards and punishment	Reward system				+*	Employees' performance and satisfaction	Human resource management	195	124
Rewards and goals	Reward system				+*	Employee motivation	Human resource management	8192	71

Note: Statistical significance, * = .05, ** = .01, *** = .001, ns = not significant, nr = not reported
+ = positive relationship, - = negative relationship

Results of the categorization of prior studies that used dependent variables in the business outcomes dimensions are presented in Table 4.2 as follows:

Table 4.2
Matrix Analysis of Prior Studies on the Relationships among Dependent Variables in the Business Outcomes Dimension and Independent Variables in Parent Country, Host Country, Global and Multinational Enterprise Dimensions.

INDEPENDENT VARIABLES	CATEGORY	DIMENSION OF INDEPENDENT VARIABLE				DEPENDENT VARIABLES	CATEGORY IN BUSINESS OUTCOMES DIMENSION	SMP SIZE (N)	ref no.
		PARENT	HOST	GLOBAL	MNE				
Exchange rate system	Currency			ns		Output, trade, consumption	Economic growth	44	37
Economic ties	Economic	+*	+*			Loan	Revenues	46	157
Firm's size	Characteristic				+***	Survival	Financial success	152	123
Firm's size	Characteristic				+*	Bankruptcy, liquidation	Financial failure	85	3
Firm's age	Characteristic				+*	Bankruptcy, liquidation	Financial failure	85	3
Direct influence	Management				+*	Distributor relationship	Relations	74	37
R&D, Technological support	Technology	nr				Sales, Production	Revenues, Productivity	686	25

Note: Statistical significance, * = .05, ** = .01, *** = .001, nr = not reported, ns = not significant
+ = positive relationship, – = negative relationship

Results of the categorization of prior studies that used independent variables in the business operations dimension and dependent variables in the business outcomes dimension are presented in Table 4.3 as follows:

Table 4.3
Matrix Analysis of Prior Studies on the Relationships among Independent Variables in Business Outcomes Dimension and Independent Variables in Business Operations Dimension.

BUSINESS OPERATION DIMENSION		RELATIONSHIP (statistical significance)	BUSINESS OUTCOME DIMENSION		SMP SIZE (N)	ref no.
VARIABLE	CATEGORY		VARIABLE	CATEGORY		
Delegation of decision	Management	+*	Survival	Financial success	152	123
Quality control	Production	+*	Survival	Financial success	152	123
Form of entry	Mode of entry	+*	Bankruptcy, liquidation	Financial failure	85	3
Number of corporate representatives	Human resource management	+*	Sales	Revenues		10
Style and tradition of business operation (US vs. Japan)	Management	nr	Training, staffing	Human resource management	77	45
Data on overall performance	Financial success	+*	Satisfaction on success	Financial success	82	1

Note: Statistical significance, * = .05, ** = .01, ns = not significant, nr = not reported
+ = positive relationship, – = negative relationship

Tables 4.1, 4.2 and 4.3 show the relationships between independent variables and dependent variables in international business operations reported in the empirical studies published between 1986-1991. Based on the entire set of prior empirical studies, the percentages of independent variables in five dimensions are as follows:

Parent country	= 20%
Host country	= 40%
Global	= 4%
Multinational Enterprise	= 25%
Business Operations	= 11%.

Apparently, the host country characteristics were the most popular independent variables chosen for the study of international business in that period. It was about 40%, twice as much as the characteristics in the parent country dimension. Approximately 25% of the independent variables were characteristics of multinational enterprises. The styles, forms or strategies of business operations were about 11% of the independent variables used. Quite a few studies used variables in the global dimension.

More specifically, the five most popular categories of independent variables chosen were characteristics of MNE (11%), culture in the host country (9%), culture in the parent country (7%), regulations in the host country (9%) and regulations in the parent country (5%). Other categories were consumers, competitors, control, cost, currency, economic, distribution, leadership, mass-media, politic, image, product quality, technology, trade policy,

production, management, mode of entry, and human resource. Based on the entire set of prior empirical studies, the percentages of dependent variables in two dimensions are:

Business operations = 87%
Business outcomes = 13%.

Comparatively, variables in business operations were much more frequently chosen as dependent variables in the studies of that period. The business outcomes, which were defined as the resultants of business operations that show the level of accomplishment of a company in conducting business, were seldom chosen to study.

The three most popular categories of dependent variables chosen were, foreign direct investment (22%), marketing (17%), and management (13%). Other categories were forms of ownership, information control, negotiation, advertising, accounting, communication, productivity, rewards, revenues, and partner relationship. In terms of business outcomes, the most popular category of dependent variable is the financial success and failure.

To enrich the results for a practical purpose in developing the model and theory of international business operations, knowledge from business practitioners, published in the leading journals, were extracted and categorized by employing the same structure of matrix analysis. The first set of results is presented in Tables 4.4.

Table 4.4

Matrix Analysis of Prior Case Studies on the Relationship among Dependent Variables in the Business Operations Dimension and Independent Variables in Parent Country, Host Country, Global, and Multinational Enterprise Dimensions as Quoted in the Business Case Reports between 1986-1991

INDEPENDENT VARIABLES	CATEGORY	DIMENSION OF INDEPENDENT VARIABLE				DEPENDENT VARIABLES	CATEGORY IN BUSINESS OPERATIONS DIMENSION	Ref. no.
		PARENT	HOST	GLOBAL	MNE			
Cultural differences	Culture		+			Cultural adjustment	Staffing	121
Competitor's FDI strategy	Competitor		+			FDI strategy	Investment	155
Global network	Communication			+		Criteria to invest	Investment	41
Asset inflation	Economic	+				Foreign Direct Investment	Investment	41
Recession	Economic		+			Foreign Direct Investment	Investment	6
Demand, products	Economic			+		Market diversification	Marketing	67
Demand, products	Economic			+		Product innovation	Marketing	61
Bilingual employee	Human resource	+				Relocation	Location	9
Local employee	Human resource		+			Globalization in manufacturing	Production	46
EC'92 regionalization	Politic/economic			+		Threats and opportunities	Business operations	32
Political control	Politic	+				Market/service diversification	Marketing	133
Political pressure	Politic	+				Foreign Divestment	Investment	148

Note: + = a positive relationship between variables
- = a negative relationship between variables

Table 4.4 (continued)

Matrix Analysis of Prior Case Studies on the Relationship among Dependent Variables in Business Operations Dimension and Independent Variables in Parent Country, Host Country, Global, and Multinational Enterprise Dimensions as Quoted in the Business Case Reports between 1986-1991

INDEPENDENT VARIABLES	CATEGORY	DIMENSION OF INDEPENDENT VARIABLE				DEPENDENT VARIABLES	CATEGORY IN BUSINESS OPERATION DIMENSION	Ref. no.
		PARENT	HOST	GLOBAL	MNE			
Intellectual property rights	Regulations		x			Foreign Direct Investment	Investment	16
Deregulations of business	Regulations	+				Global market diversification	Marketing	52
Regulations on communication	Regulations			+		Communication expansion	Communication	75
Trade barriers	Trade policy		+			Foreign Direct Investment	Investment	44
Government support	Trade policy	+				Foreign Direct Investment	Investment	59
Government support	Trade policy	+				Globalization in manufacturing	Production	46
Strategic trade policy	Trade policy	+				Competency in global business	Business operations	55
Export control	Trade policy	+				Export amount	Sales	8
Economic reform policy	Trade policy		+			Foreign Direct Investment	Investment	108
Rewards for country	Trade policy		+			Negotiation process	Negotiation	38
Economic reform policy	Trade policy		+			Market diversification	Marketing	108

Note: + = a positive relationship between variables
– = a negative relationship between variables
x = no relationship from the study

Results of the categorization of prior case studies using dependent variables in the business outcomes dimension are presented in Table 4.5 and Table 4.6.

Table 4.5

Matrix Analysis of Prior Case Studies on the Relationship among Dependent Variables in the Business Outcomes Dimension and Independent Variables in Parent Country, Host Country, Global, and Multinational Enterprise Dimensions as Quoted in the Business Case Reports between 1986-1991

INDEPENDENT VARIABLES	CATEGORY	DIMENSION OF INDEPENDENT VARIABLE				DEPENDENT VARIABLES	CATEGORY IN BUSINESS OUTCOMES DIMENSION	Ref. no.
		PARENT	HOST	GLOBAL	MNE			
Debt payment	Economic			+		Insurance amount	Costs	64
Demand, products and markets	Economic			+		Revenues	Sales	122
War	Politic			+		Loan amount	Sales	5
Environmental protection regulations	Regulations			+		Demand/supply shift	Financial failure	119
R&D, Technological progress	Technology				+	Revenues	Sales	130
Export control	Trade policy	+				Long-term loss	Financial failure	143

Note: + = a positive relationship between variables

Table 4.6

Matrix Analysis of Prior Case Studies on the Relationships Between Dependent Variables in the Business Outcomes Dimension and Independent Variables in the Business Operations Dimension as Quoted in Business Case Reports Between 1986-1990

BUSINESS OPERATIONS DIMENSION		RELATIONSHIP	BUSINESS OUTCOMES DIMENSION		Ref. no.
VARIABLE	CATEGORY		VARIABLE	CATEGORY	
Partner relations	Relations	+	Revenues	Financial success	97
Supplier relations	Relations	+	Quality and cost reduction	Financial success	85
Customer needs	Marketing	+	Revenues	Financial success	76
Customer needs	Marketing	+	Revenues	Financial success	130
Product quality	Marketing	+	Revenues	Financial success	82

Note: + = a positive relationship between variables

Tables 4.4, 4.5 and 4.6 show the relationship between independent variable and dependent variable in international business operations as discussed in the case or experiences of practitioners in the field of international business, published in the leading journal between 1986-1991. Based on the entire set of prior case studies, the percentages of independent variables in five dimensions are:

Parent country	= 29.4%
Host country	= 26.5%
Global	= 26.5%
Multinational Enterprise	= 2.9%
Business Operations	= 14.7%.

According to the extraction of ideas and suggestions from the experiences of international business practitioners (managers, presidents, chief executive officers, experts and consultants), the independent variables discussed or emphasized by them distributed almost equally in three dimensions, i.e., the parent country, the host country and the global dimensions. This result is different from the pattern of percentages in the empirical studies in the same period as presented earlier that the percentage of variables chosen in the host country dimension is twice as much as the percentage of variables in the parent country dimension, and there was only few studies used variables in the global dimension. The empirical research lagged the ratio of study in the parent country and global dimensions as emphasized by practitioners.

Approximately, 14.7% of the independent variables were in business operation dimension. Quite a few of the case discussion emphasized the characteristics of multinational enterprises as the independent variables.

More specifically, the three most popular categories of independent variables discussed were the trade policy in the parent country (17.7%), economic conditions in the global dimension (17.7), and the trade policy in the host country (14.7%). Other categories were regulations in the host country, regulations in the parent country, world politic, war, technology of the MNE, human resource in the parent and host countries, culture, global communication, competitors, marketing, and partner relations. Based on the entire set of prior case studies, the percentages of dependent variables in two dimensions are as follows:

Business operations = 79%
Business outcomes = 21%.

Comparatively, variables in business operations were much more frequently discussed as dependent variables in the publications in that period. The business outcomes, which were defined as the resultants of business operations that show the level of accomplishment of a company in conducting business, were seldom chosen to be dependent variables. This pattern is similar to the pattern of percentages in the previous empirical studies.

The three most popular categories of dependent variables chosen were, foreign direct investment (23.5%), marketing (14.7%) and management (13%). Other categories were production, negotiation, staffing, relocation, communication, product, revenues, and insurance. In terms of business outcomes, the most popular category of dependent variable is the financial success (20.6%).

The list of variables, categorized into dimensions as presented in Tables 4.1 to 4.6, provides evidences to be used as the building blocks to construct a model and to develop a theory of international operations. The conceptual foundation is derived from the theories reviewed in Chapter 1, and the structural foundation is based on findings presented in this section of Chapter 4. The model and the theory will be presented in Chapter 5 after the criterion to measure business success is developed and its versatility and practicality is proved.

One of the difficulties in defining and measuring business success is the lack of a universal quantitative measure which can be employed to determine the level of success in business operations across industries. The next section of this chapter presents an initial attempt to develop a new financial index from empirical data of 598 companies ranked in the Global 1000 between 1987-1990. This index will be used in the model and the theory.

4.2 The Development of the Financial Success Index as a Measure of Success in Business Operations: An Integration of the Three Financial Ratios Derived from the Modified DuPont Model of Financial Analysis

This section of Chapter 4 presents the results from an integration of the three profit-related financial ratios, i.e., Return on Equity, Return on Investment and Return on Sales. The derivation of the three ratios based on the modified DuPont Model of Financial Analysis (see the model in Figure 3.5 in Chapter 3, p. 207).

Financial data from 598 companies ranked in the Global 1000 between 1987-1990 were entered for the calculation of the three ratios of each company. Then each set of data was transformed for further extraction by using Factor Analysis. One factor was extracted along with the factor loadings of each variable. The results are presented in Table 4.7 and Table 4.8. A formula for the calculation of the newly-developed is shown in Equation No.4.4. The term "Financial Success Index" was invented to designate the new factor, accompanied by the definition of this term.

To be qualified for employing Factor Analysis, correlation among the three financial ratios of 598 companies was calculated. The results are presented in Table 4.7.

Table 4.7

Correlation Matrix of the Three Financial Variables to be Used for the Construction of the Financial Success Index

Correlations			
	RT/EQUITY	RT/SALES	RT/ASSETS
RT/EQUITY	1.0000	.3551**	.6596**
RT/SALES	.3551**	1.0000	.5986**
RT/ASSETS	.6596**	.5986**	1.0000
Number of cases: 598			
Significance: * < .01 ** < .001			
RT/ = RETURN ON			

Table 4.7 shows a correlation matrix of the three financial variables to be used for further development into the Financial Success Index (FSI). They are; Return on Equity (RT/EQ), Net Profit Margin or Return on Sales (RT/SALES), and Return on Investment (ROI) or Return on Assets (RT/ASSETS). The financial data in the sample were obtained and calculated from 598 companies that were ranked in the Global 1000 between 1987-1990. Results indicate a correlation value of .6596 between Return on Equity and Return on Assets; a correlation value of .5986 between Return on Sales and Return on Assets; and a correlation value of .3551 between Return on Sales and Return on Equity. All values are significant at $p < .001$ in the test of significance. These values indicate the finding that the three financial variables relate to each other with a high level of significance. The findings suggested that the

three financial variables might share a common factor, thus factor analysis was performed in the next step.

In the next step, the data sets of the three financial variables of 598 cases were transformed for factor analysis. Results from factor analysis are summarized in Table 4.8.

Table 4.8

Factor Analysis of the Three Financial Variables for the development of the Financial Success Index (FSI)

Factor Analysis

(1) Principal-Components Analysis (PC)
Initial Statistics:

Variable	Communality	Factor	Eigen-value	Percent of Variation	Cumulative Percent
RT/EQ	1.00000	1	2.08527	69.5	69.5
RT/SALES	1.00000	2	.64735	21.6	91.1
RT/ASSETS	1.00000	3	.26738	8.9	100.0

(2) Principal-Components Analysis (PC)

PC Extracted 1 factors.

(3) Variables	Factor loadings
RETURN ON ASSETS	.91597
RETURN ON EQUITY	.80856
RETURN ON SALES	.76974

(4) Final Statistics:

Variable	Communality	Factor	Eigen-value	Percent of Variation	Cumulative Percent
RT/EQUITY	.65377	1	2.08527	69.5	69.5
RT/SALES	.59250				
RT/ASSETS	.83900				

The results in the first box of Table 4.8 are initial statistics before factor extraction. The communality or the

proportion of variance accounted for by each variable is 1.0 for each of the three variables. The variance is in a standardized form with a mean of zero and a standard deviation of one. There are three variables, so the total variance is three. The Eigenvalues in the fourth column of the first box indicate that extracting one factor can account for a total variance of 2.08527 (Eigenvalue in the first line) out of 3.00 or about 69.5 % of the variation. The other two factors or variables have Eigenvalues of less than one, thus they are no better than a single variable.

The results in the second box of Table 4.8 shows that the principal components analysis extracted one factor. The factor loadings of the three financial variables are displayed in the third box of Table 4.8. The weights of variables are as follows; .91597 for Return on Asset (RT/ASSETS) or Return on Investment (ROI); .80856 for Return on Equity (RT/EQUITY); and .76974 for Return on Sales (RT/SALES) or Net Profit Margin.

The final statistics shown in the fourth box of Table 4.8 indicates that the Eigen value or the proportion of variance accounted for by the factor extracted is 2.08527 out of the total variance of 3 (or approximately 69.5 %). In other words, the contribution of each variable to account for the total variance are as follows: Return on Equity = .65377 (21.79%) Return on Sales or Net Profit Margin = .5925

(19.75%) Return on Assets = .839 (27.97%) or Return on Investment. The linear combination of the three variable's communality values =.65377 +.5925 +.839 = 2.08527 (69.5%).

In sum, the proportion of the variance accounted for by the common factor extracted is about 70 percents. This newly developed common factor comprises three variables, namely, Return on Investment, Return on Equity, and Net Profit Margin with the weights of .91597, .80856, and .76974, consecutively.

The weights of the three financial variables were obtained from 598 sets of empirical data from the companies ranked in the Global 1000 in 1987-1990. Therefore, it may be practically employed to determine the financial success in nternational business operations. Technically, the three financial variables will be called by the popular names based on the DuPont model, i.e., Return on Investment (ROI) for RT/ASSETS, Return on Equity (REQ) for RT/EQUITY, and Net Profit Margin (NPM) for RT/SALES.

The newly developed factor can be obtained from a linear combination of the three weighted financial variables. The general equation is as follows:

Equation No.4.1
FACTOR = a(ROI) + b(REQ) + c(NPM)

where a, b, and c are the weights obtained from the factor loadings in Table 4.8.

In practice, the three financial variables are reported in the form of percents. The linear combination of the three variables will triple the magnitude of the numerical values. In order to reduce the range of scale of the newly developed factor back to the range which is normally apprehensible by business practitioners, Equation No.4.1 can be simplified by using the sum of the three weights as a denominator across the equation, thus, the general equation is modified to be as shown in Equation No.4.2.

Equation No.4.2
FACTOR = {a(ROI) + b(REQ) + c(NPM)} / (a+b+c)

where a, b, and c are the weights obtained from the factor loadings in Table 4.8.

The factor obtained from the modified equation is termed the "Financial Success Index" (or FSI) which is defined as **an overall-quantitative measure of the financial performance of a company based on three weighted financial variables derived from the modified DuPont Model of financial analysis, namely, Return on Investment, Return on Equity and Net Profit Margin.** In essence, the FSI is the overall integrated percentage of the return on business operations. It is an index for measuring and comparing business performance financially.

The original formula for obtaining the Financial Success Index or FSI is shown in Equation No.4.3.

Equation No.4.3
FSI = {.91597(ROI) + .80856(REQ) + .76974(NPM)}/(2.49427)

where FSI = Financial Success Index
ROI = Return on Investment
REQ = Return on Equity
NPM = Net Profit Margin

The numerical values in Equation No.4.3 were further simplified. The final formula for obtaining the Financial Success Index or FSI is shown in Equation No.4.4.

Equation No.4.4
FSI = {.92(ROI) + .81(REQ) + .77(NPM)} / 2.5

where FSI = Financial Success Index
ROI = Return on Investment
REQ = Return on Equity
NPM = Net Profit Margin

In addition, the results from factor analysis in Table 4.8 also suggest that, implicitly or explicitly, global companies may determine the overall financial success by assigning the highest weight on return of investment, followed by the weight of return on equity, and may include the weight of net profit margin in the last place. Further investigation on this issue is recommended.

4.3 An Illustration of the Versatility and Practicality of the Financial Success Index in Measuring the Overall Financial Success of Business Operations: Using the FSI to Compare Business Success among Countries in Four Selected Industries

To illustrate the versatility and practicality of the Financial Success Index (FSI), financial data of 4,000 companies ranked in the Global 1000 between 1987-1990 were calculated for the FSI. The FSI's were categorized by country and combined to show the Country Composite for each of the four consecutive years. The results are presented in Table 4.10. The FSI's trends are presented in Figure 4.6 to Figure 4.8 along with the country composite sales. The preliminary analysis of the market share and sales trends are presented from Figures 4.1 to 4.6.

Then the FSI's were categorized by industry and combined in each parent countries to show a comparison of the level of financial success among the parent countries for four consecutive years. The four selected industries are automobile, beverage and tobacco, health and personal cares, and telecommunication industries. The results are presented along with the total industry sales in each parent country in Table 4.11 to Table 4.18. These results were transformed into line graphs as shown in Figure 4.7 to Figure 4.23.

Table 4.9

Country Composite Sales Made by the Companies Ranked in the Global 1000 between 1987-1990 (Unit = Billions of US Dollars)

	1987	1988	1989	1990
US	2054.667	2346.625	2362.681	2681.559
JAPAN	1896.316	1924.236	1987.817	2464.560
BRITAIN	546.867	514.191	615.858	680.206
GERMANY	302.103	288.351	418.941	446.767
FRANCE	163.020	167.419	267.072	273.661
NETHERLANDS	154.288	155.608	183.610	208.916
SOUTH KOREA	N.A.	74.070	81.100	111.100
SWITZERLAND	59.573	79.313	118.039	114.098
ITALY	64.898	80.334	125.674	105.066
SWEDEN	63.198	77.496	97.246	99.927
CANADA	85.391	88.477	86.134	98.264
AUSTRALIA	53.456	48.582	59.359	57.806
BELGIUM	23.679	21.309	31.663	35.439
SPAIN	19.271	15.383	27.002	32.348
HONG KONG	8.834	11.289	17.360	24.188
TAIWAN	N.A.	8.230	14.400	18.400
MEXICO	N.A.	1.800	10.300	15.400
NORWAY	8.724	8.345	10.201	9.070
NEW ZEALAND	4.037	5.390	6.639	7.760
BRAZIL	N.A.	6.780	8.700	6.700
FINLAND	5.059	8.626	N.A.	5.709
SINGAPORE	1.724	2.050	2.749	2.804
DENMARK	1.391	N.A.	1.584	2.802
SOUTH AFRICA	2.481	1.639	2.301	2.095

The amount of annual sales in Table 4.9 is presented in bar graphs shown in Figures 4.1, 4.2, 4.3, and 4.4.

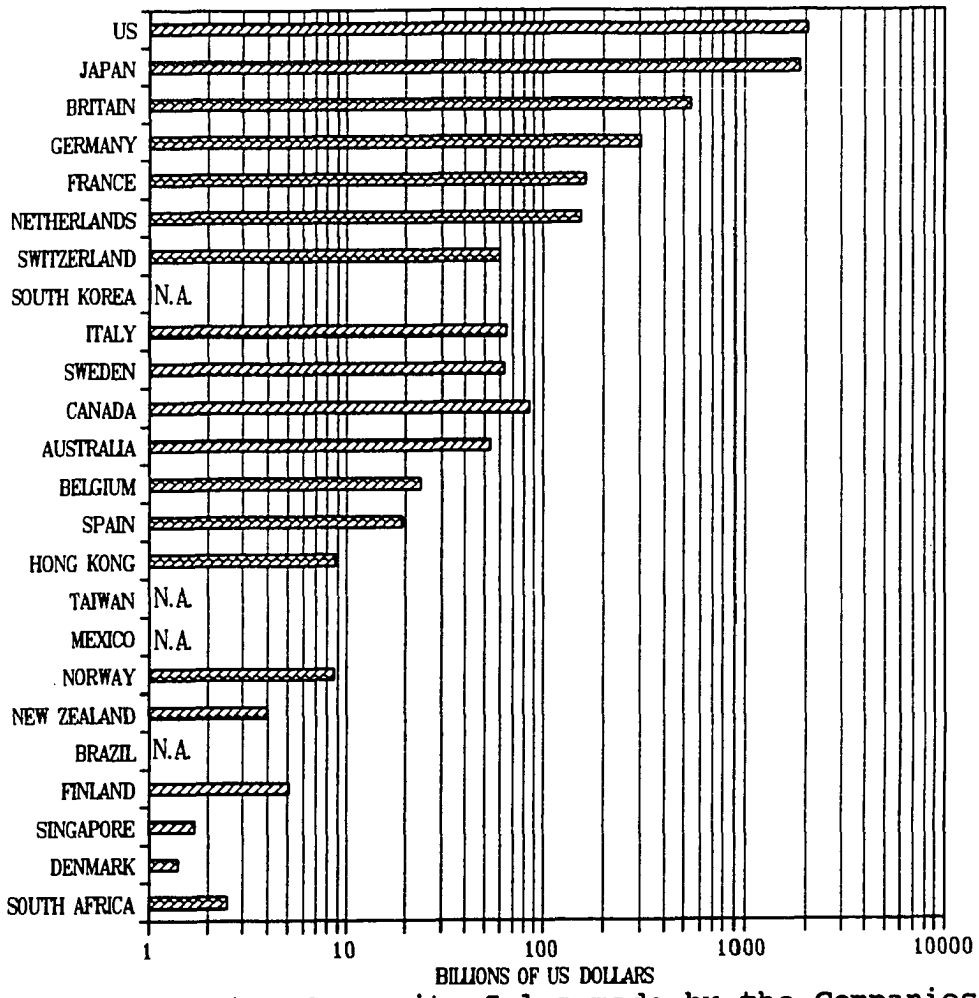


Figure 4.1 Country Composite Sales made by the Companies Ranked in the Global 1000 in 1987.

The country composite sales, plotted on a log scale shown in Figure 4.1, apparently indicates a separation of groups of countries. In 1987 the US and Japan led the world above the level of trillions. Britain, Germany, France, and Netherlands were in the scale of hundreds of billions. The moving up countries were Switzerland, Italy, Sweden, Canada, Australia, Belgium and Spain.

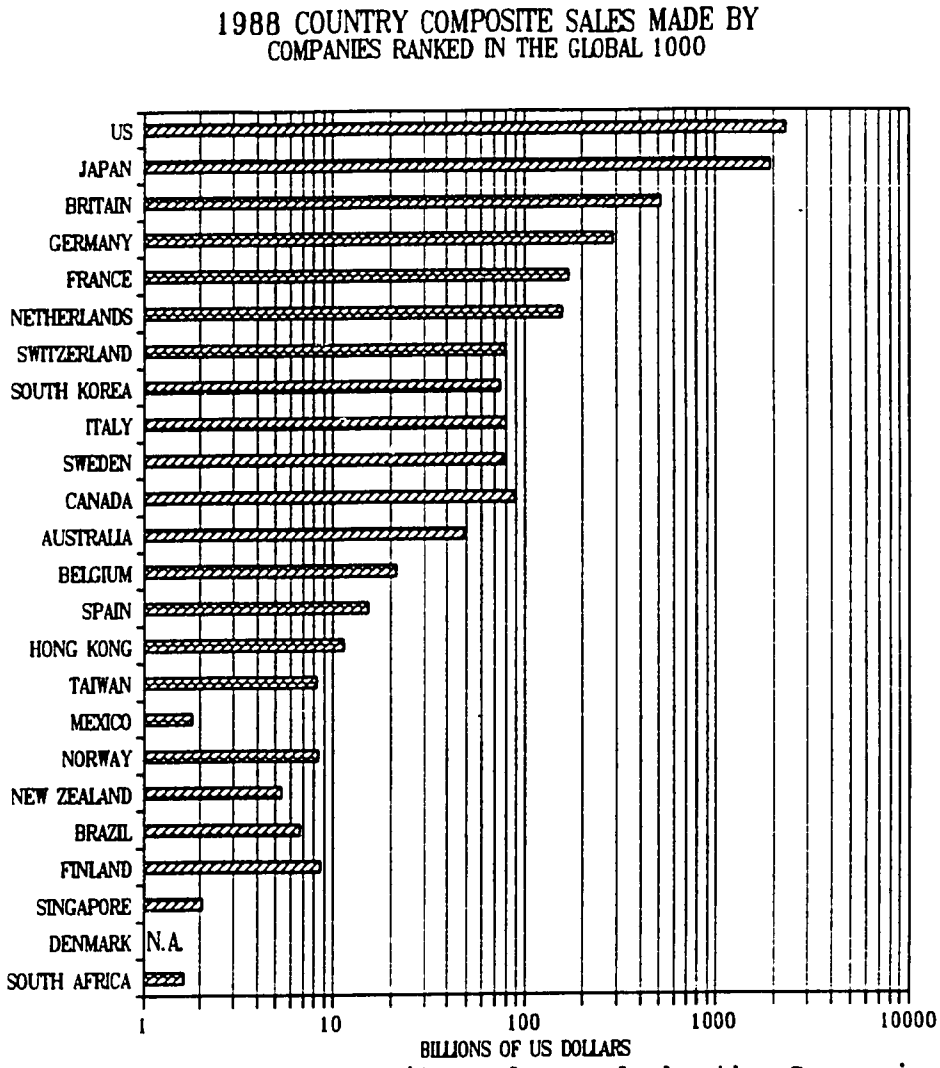


Figure 4.2 Country Composite Sales made by the Companies Ranked in the Global 1000 in 1988.

The country composite sales, plotted on a log scale shown in Figure 4.2, still indicates the same pattern of separation of the groups of countries. In 1988 US and Japan led the world in the scale of two thousand billions. Britain, Germany, France, and Netherlands were in the scale of hundreds of billions. The moving-up group comprised Switzerland, South Korea, Italy, Sweden, Canada, Australia, Belgium and Spain. Hong Kong also emerged to this level.

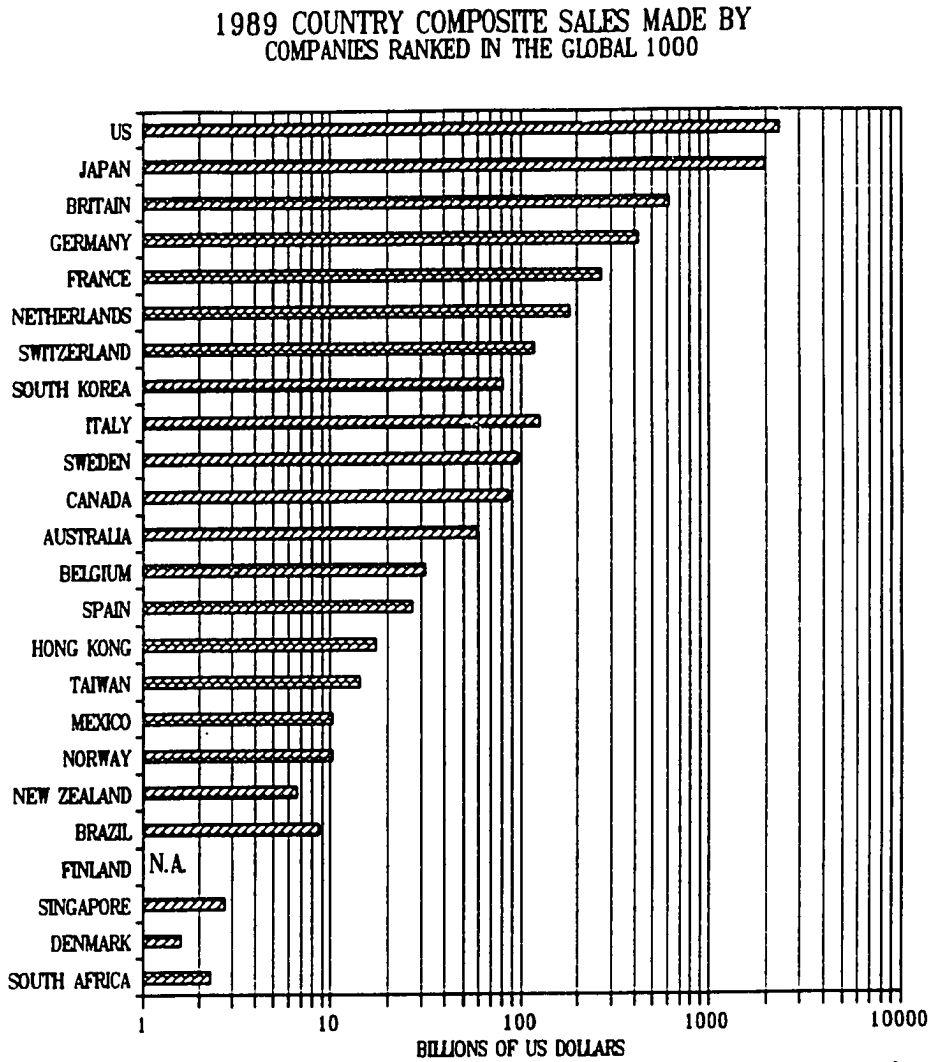


Figure 4.3 Country Composite Sales made by the Companies Ranked in the Global 1000 in 1989.

The country composite sales, plotted on a log scale shown in Figure 4.3, still shows the same pattern of groups of countries. In 1989 US and Japan led the world in the scale of two thousand billions. Britain, Germany, France, and Netherlands were in the scale of hundred billions. Italy lead the moving-up group, followed by Switzerland, South Korea, Sweden, Canada, Australia, Belgium, Spain and Hong Kong. Taiwan also emerged to this level this year.

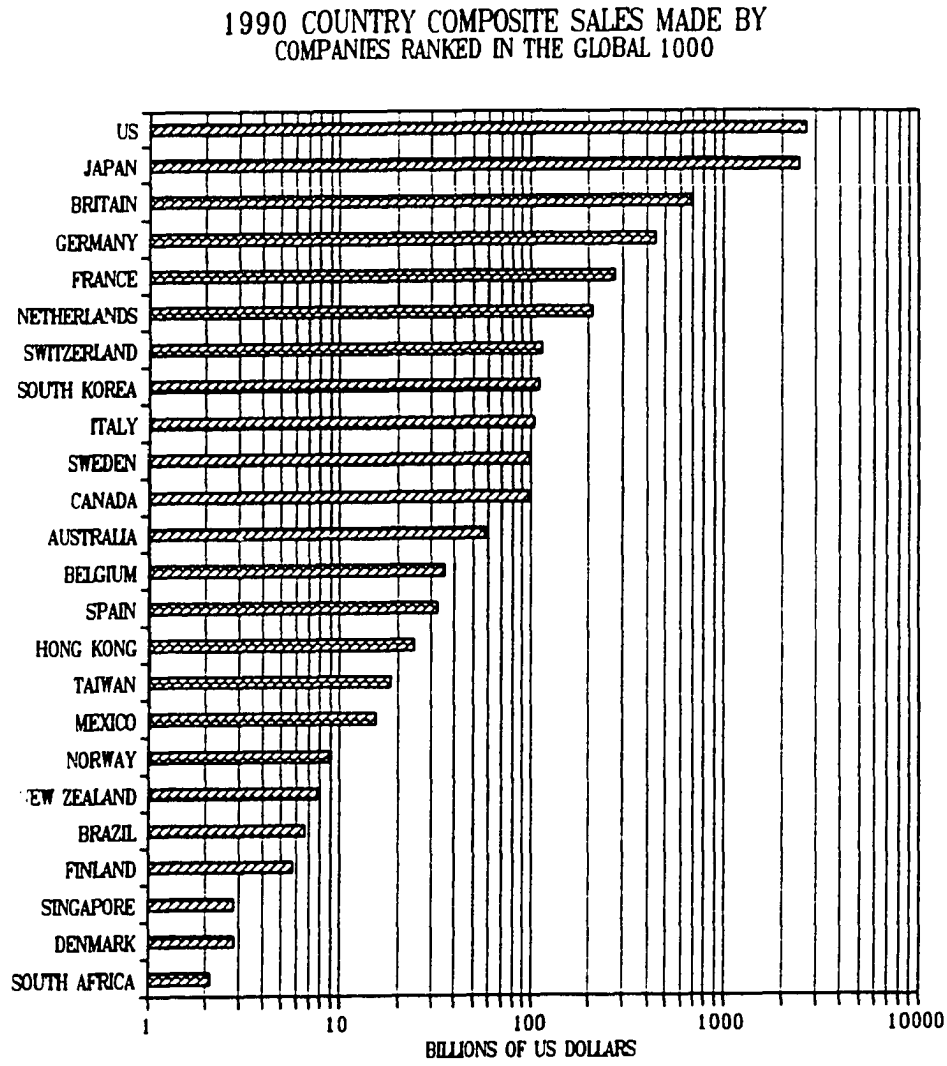
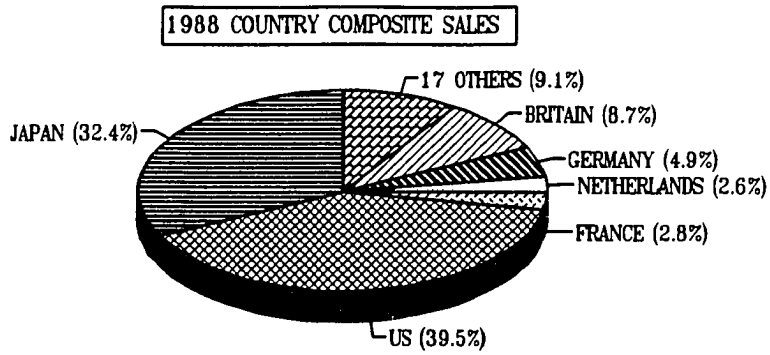
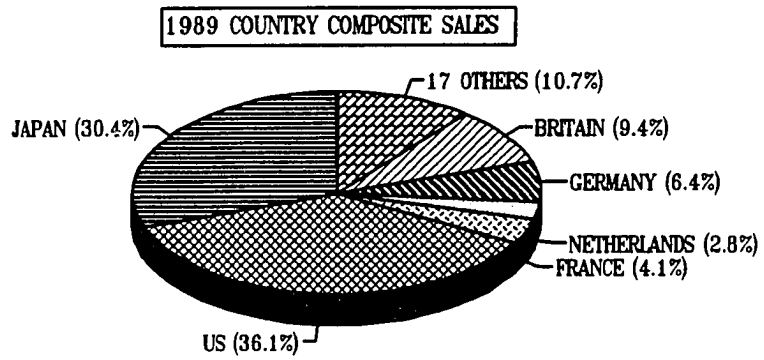


Figure 4.4 Country Composite Sales made by the Companies Ranked in the Global 1000 in 1990.

The country composite sales, plotted on a log scale shown in Figure 4.4, still shows the same pattern of groups of countries. In 1990 US and Japan led the world in the scale of two thousand billions. Britain, Germany, France, and Netherlands were in the scale of hundred billions. The moving-up group comprised Italy, Switzerland, South Korea, Sweden, Canada, Australia, Belgium, Spain, Hong Kong and Taiwan. Mexico also emerged to this level this year.





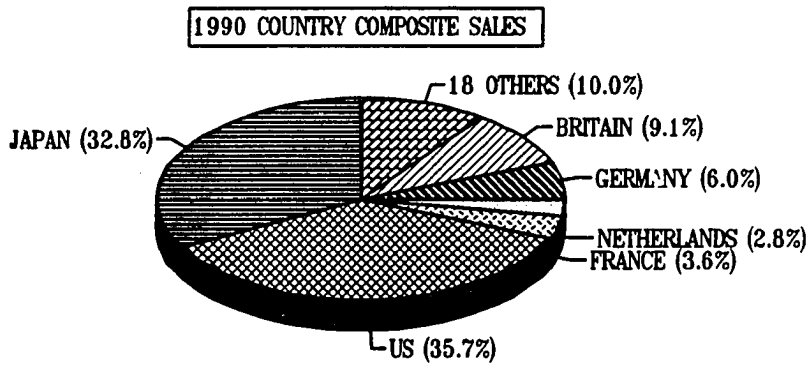


Figure 4.5 1988-1990 Market Share of 24 Parent Countries: Composite Sales made by Companies Ranked in the Global 1000.

Figure 4.5 shows the market share calculated from the country composite sales made by the companies ranked in the Global 1000 in 1988, 1989 and 1990. The U.S.A. has been the world leader with a total sales, made by leading companies, of 2681.559 billion US dollars in 1990. Apparently, the combined total sales made by leading companies in the US and Japan accounted for about 70% of the global market share. The combined total sales made by companies in the six leading countries, i.e., USA, Japan, Britain, Germany, France and Netherlands, accounted for about 90% of the global market share since 1988. Obviously, the combined total sales made by top companies in other 17-18 countries accounted for only 10% of the global market share. It may be interpreted that top companies in the six leading countries are the major agents who generate sales movement in the world. More interestingly, about 65-70% of the gigantic corporations, listed in the Global 1000, reside in the U.S.A. and Japan. Further studies is recommended to see how powerful they control the world market and their influences on political economy of a country and the world.

In terms of representing the population in the parent country in conducting international business, sales per capita were calculated for 1990. The country composite sales were divided by the 1990 population in the country. Results are presented in Figure 4.6.

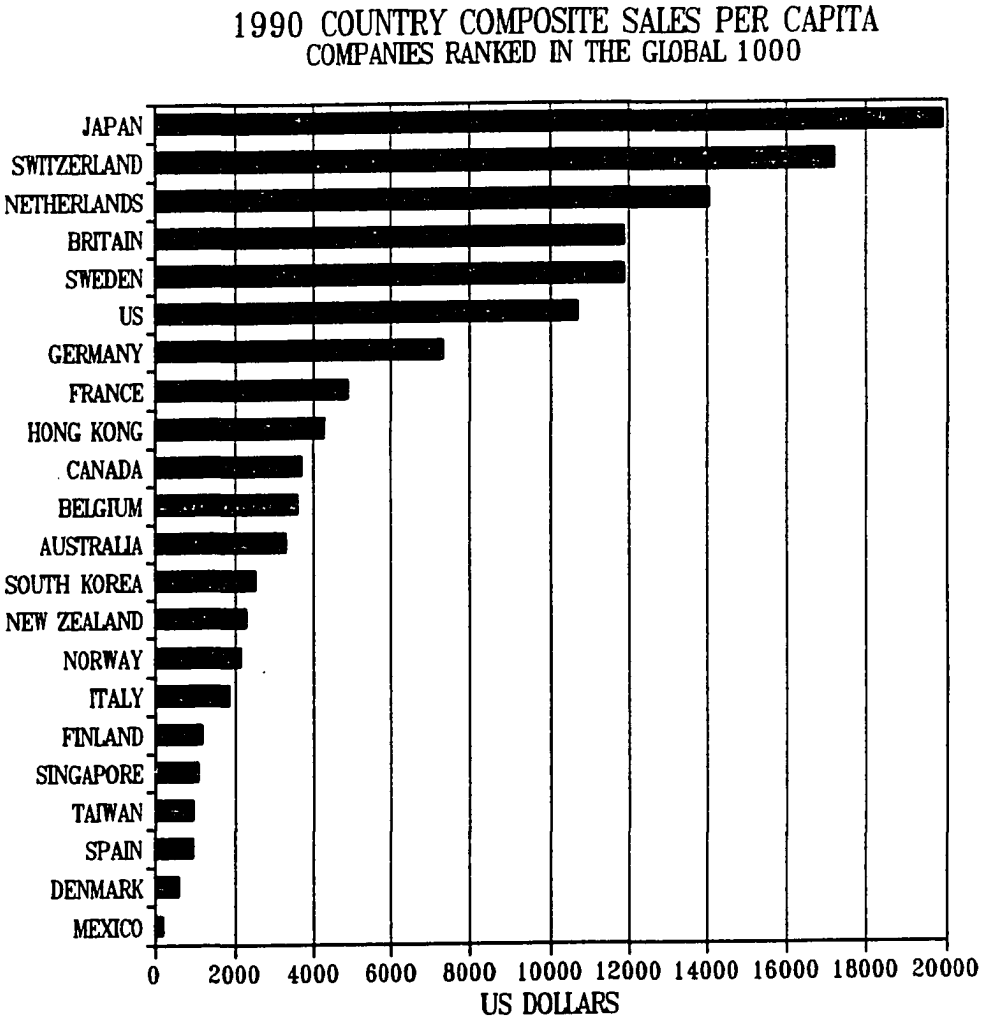


Figure 4.6 1990 Country Composite Sales per Capita Combined from Total Sales made by the Companies Ranked in the Global 1000 Divided by 1990 Population

Figure 4.6 shows the Sales per Capita made by the companies ranked in the Global 1000. These figures indicate the amount of revenues made by the big corporations representing the population in the countries. Japan led the group, followed by Switzerland and Netherlands. The sales per capita of these countries were close to the GNP

per capita of these countries were close to the GNP per capita. The sales per Capita of the leading companies in Britain and Sweden were at the same level. The US came on the sixth place, with the value of sales per capita at half of the GNP per capita. Germany and France were the next two countries. Hong Kong came close to France, followed by Canada Belgium and Australia. Hong Kong and South Korea are two promising economies with the sales per capita about half of the GNP per capita. The sales per capita of the top multinational enterprises in all other countries are far behind the GNP per capita, therefore, they have less influence on the economic growth.

The findings that the sales per capita, made by the companies ranked in the Global 1000, in industrialized countries are close to the GNP per capita indicate a pattern of business-economic development by the expansion of multinational enterprises. Evidently the huge multinational enterprises in Japan surpassed all countries by the same ratio of human resources. The prosperity of multinational enterprises can promote economic growth and accrue wealth of the nation.

To compare business success among countries, the Financial Success Index was employed to determine the level of financial success made by the global companies in twenty countries. The Country Composite Financial Success Index was calculated for each of the twenty leading countries by

employing 1,000 sets of data for each of the four years. The resulted FSI's values were categorized by country and by year. The composite values of the FSI combined from the top companies in each country were designated as the country composite indices which are shown in Table 4.10.

Table 4.10

Country Composite Financial Success Index combined from the Companies Ranked in the Global 1000 between 1987-1990

	1987	1988	1989	1990
US	8.85	9.50	9.05	9.05
JAPAN	3.25	4.05	4.06	3.92
BRITAIN	11.17	11.21	10.02	10.63
GERMANY	6.15	5.67	5.75	4.89
FRANCE	9.44	12.09	10.12	7.62
NETHERLANDS	11.11	10.52	12.11	11.12
SWITZERLAND	7.38	5.94	6.50	5.55
ITALY	6.84	7.70	6.92	6.61
SWEDEN	7.94	7.71	7.80	6.26
CANADA	9.12	10.82	7.81	6.31
AUSTRALIA	7.96	9.60	9.66	7.96
BELGIUM	8.42	7.70	10.30	7.98
SPAIN	7.06	10.10	10.04	9.10
HONG KONG	19.91	17.95	15.41	13.60
NORWAY	7.44	13.78	9.07	10.29
NEW ZEALAND	10.23	9.32	9.43	7.82
FINLAND	8.08	9.42	1.79	1.80
SINGAPORE	13.53	13.51	19.74	13.29
DENMARK	7.49	4.08	8.03	6.65
SOUTH AFRICA	30.01	39.59	38.12	36.05
MEAN	10.07	11.01	10.59	9.32
S.D.	5.61	7.33	7.32	6.77

Tables 4.10 shows the country composite FSI's of twenty countries. To compare their trends, the results were transformed into line graphs. The country composite FSI trends (1987-1990) are presented along with the country composite sales trends (1987-1990) in the next page.

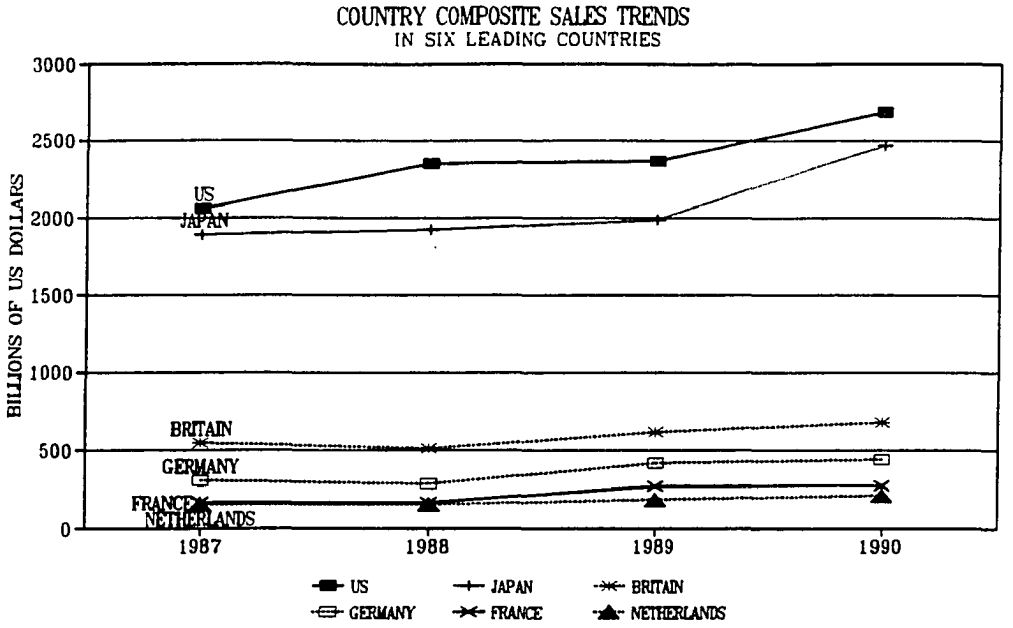


Figure 4.7 Country Composite Sales Trends of the Companies Ranked in the Global 1000; Compared among the Six Leading Countries

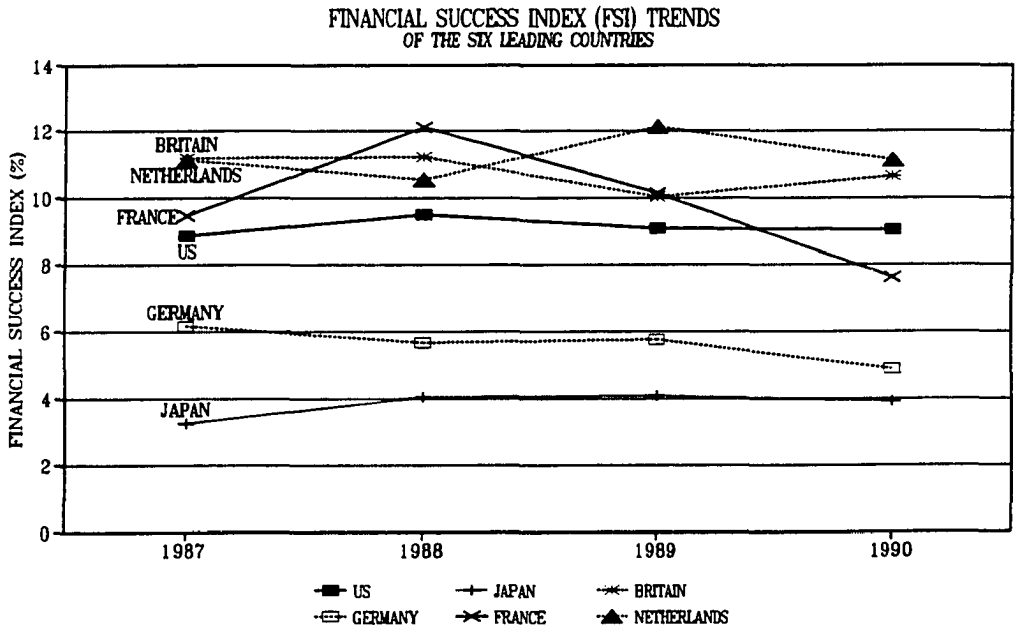


Figure 4.8 Country Composite Financial Success Index Trends of the Companies Ranked in the Global 1000; Compared among the Six Leading Countries

Figure 4.7 shows the country composite sales trends of the companies ranked in the Global 1000 in six leading countries. The U.S.A. led the world in the past four consecutive years, followed closely by Japan. In fact, the other four countries, i.e., Britain, Germany, France and Netherlands, were still far behind the two world leaders. The gaps were widened in 1990.

However, in terms of financial success in business operations, companies in Netherlands and Britain led the group at the FSI above 10% as indicated by the FSI trends in Figure 4.8. Companies in France had a moving-down trend from the leading group. On average, companies in the U.S.A. were stable at the FSI of 9 to 10%. Companies in Germany performed consistently at the FSI of 6% with a little drop in 1990. Companies in Japan had the lowest FSI at about 4%. These trends show different patterns of business goals and operations. The trends also indicate the existence of some underlying factors contributing to the different levels of financial success, e.g., capital cost, time horizon for the return, business objectives, socio-economic environment in business operations, and perhaps cultural differences in conducting business.

The country composite sales trends, along with the FSI trends of the six moving-up countries are presented in Figures 4.9 and 4.10.

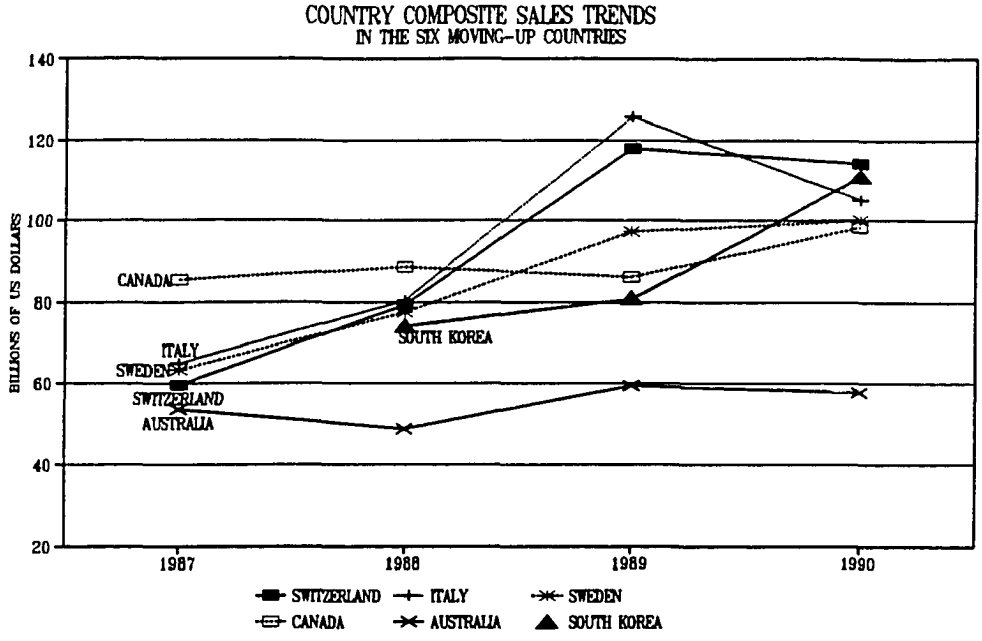


Figure 4.9 Country Composite Sales Trends of the Companies Ranked in the Global 1000; Compared among the Six Moving-up Countries

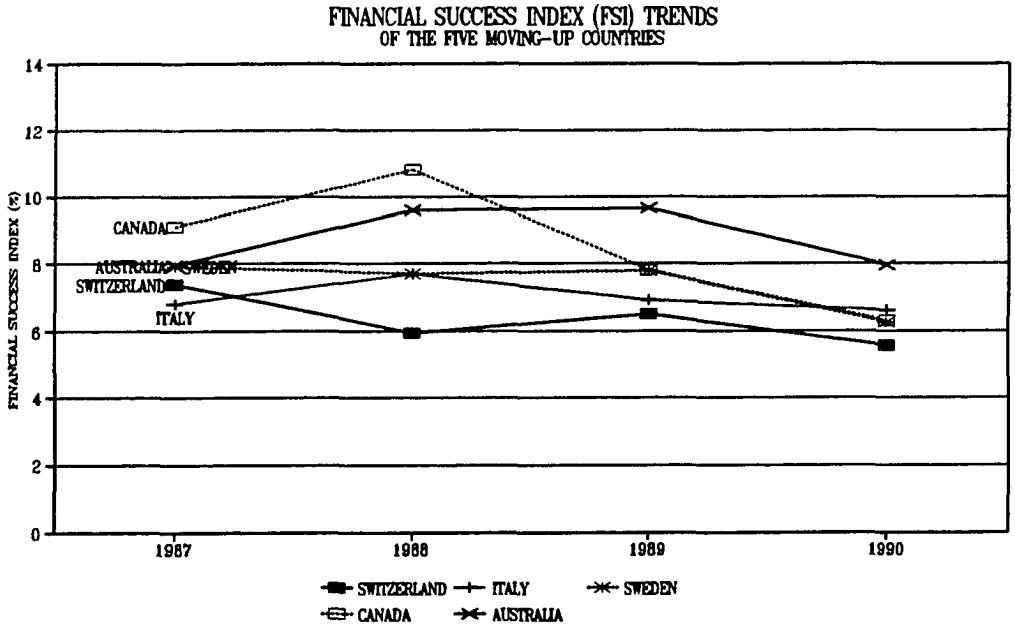


Figure 4.10 Country Composite Financial Success Index Trends of the Companies Ranked in the Global 1000; Compared among the Five Moving-up Countries

Figure 4.9 shows the country composite sales trends of the companies ranked in the Global 1000 in the six moving-up countries. Except for Australia, the giant companies in other five countries, i.e., Italy, Switzerland, South Korea, Canada and Sweden, were racing aggressively to reach the upper level. The companies in Australia seemed stagnant at the sales level of 60 billion US dollars. The gap has been widened since 1988.

In terms of financial success in business operations, companies in Australia still performed well in the group at the FSI above 8% as indicated by the FSI trends in Figure 4.10. Companies in Canada had a moving-down trend from the leader position in 1987 and 1988 at the FSI around 9-11% to 6% in 1990. On average, companies in Switzerland were stable at the FSI of 6%. Companies in Italy and Sweden performed at the FSI range of 7-8% with a little drop in 1990. Unfortunately, the country composite FSI for companies in South Korea could not be obtained due to the lack of financial data. The big corporations in South Korea were privately owned and/or the stock market was close to foreigners.

The country composite sales trends, along with the FSI trends of the six potential countries are presented in Figures 4.11 and 4.12.

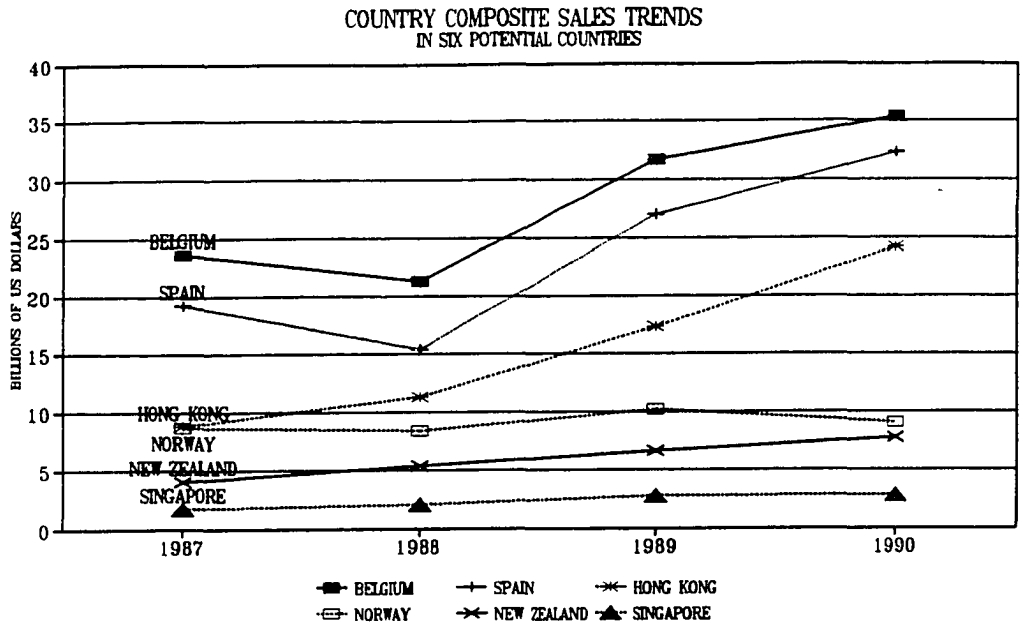


Figure 4.11 Country Composite Sales Trends of the Companies Ranked in the Global 1000; Compared among the Six Potential Countries

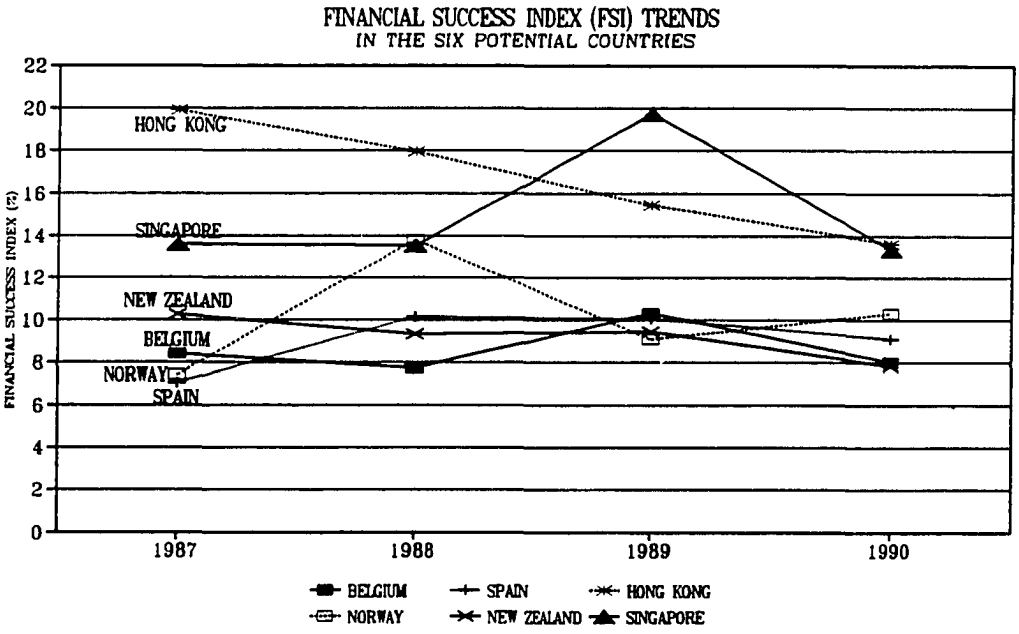


Figure 4.12 Country Composite Financial Success Index Trends of the Companies Ranked in the Global 1000; Compared among the Six Potential Countries

Figure 4.11 shows the country composite sales trends of the companies ranked in the Global 1000 in the six potential countries. Companies in Belgium, Spain and Hong Kong were racing aggressively. The big companies in Norway, New Zealand and Singapore seemed stagnant at the sales level of sales less than ten billions of U.S. dollars. The gap has been widened since 1989. It should be remarked that the big corporations in Hong Kong were striving to emerge to the higher level, thus, the sales soared steeply since 1988.

In terms of financial success in business operations, companies in Hong Kong led the group at the FSI much higher than average as shown in Figure 4.10 although the FSI trend indicates a decline since 1987. The decline may be resulted from capital movement to overseas investment because this territory will be returned to The People Republic of China In 1997.

The giant companies in Singapore also had an above average FSI trend. It should be noted that, on the average, the giant corporations in Hong Kong and Singapore conducted business at the highest rate of return as indicated by the high Financial Success Index. Companies in Belgium, Norway, Spain and New Zealand had the FSI trends in the range of 8-10%. They were relatively stable between 1987 to 1990.

The next presentation will be in the automobile industry, sales and the FSI are shown in Tables 4.11 and 4.12.

Table 4.11

Sales of the Automobile Companies combined in each of the Six Leading Countries between 1987-1990 (Unit = Billions of US Dollars)

	1987	1988	1989	1990
US	199.702	241.240	227.822	234.500
JAPAN	129.829	147.345	153.626	189.444
GERMANY	79.761	75.679	96.211	104.840
ITALY	30.027	30.737	41.931	44.702
FRANCE	20.303	20.438	26.830	27.318
SWEDEN	15.476	14.416	14.881	13.440

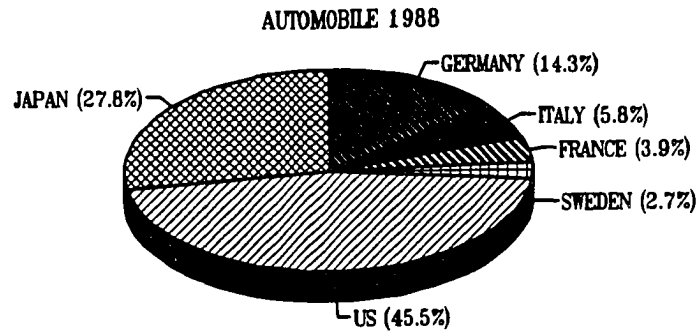
Table 4.11 shows the values of sales of the top companies in automobile industry, combined in each of the top six countries. The percentage of sales volume is presented in Figure 4.13. The sales trends are presented in a form of line graph shown in Figure 4.14.

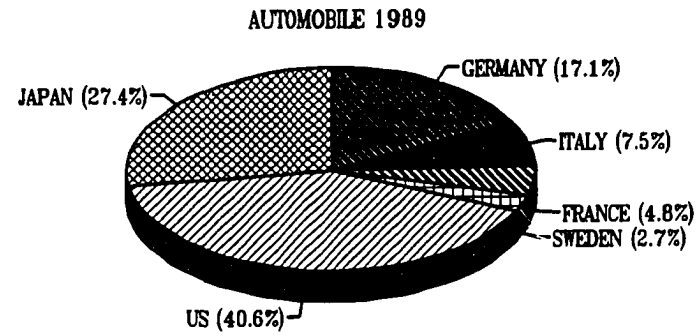
Table 4.12

Financial Success Indices of the Automobile Industry in Six Leading Countries 1987 - 1990

	1987	1988	1989	1990
US	9.81	7.08	4.99	- 0.14
JAPAN	4.28	3.97	4.02	3.46
GERMANY	9.70	8.27	10.29	6.32
ITALY	12.17	13.57	12.65	5.22
FRANCE	21.29	15.09	17.35	11.23
SWEDEN	10.65	9.37	7.68	-0.74
MEAN	11.32	9.56	9.50	4.23
S.D.	5.08	3.78	4.58	4.06

The Financial Success Indices (FSI) of the automobile industry in the corresponding countries are presented in Table 4.12. The trends of the FSI are presented in a form of line graph shown in Figure 4.15.





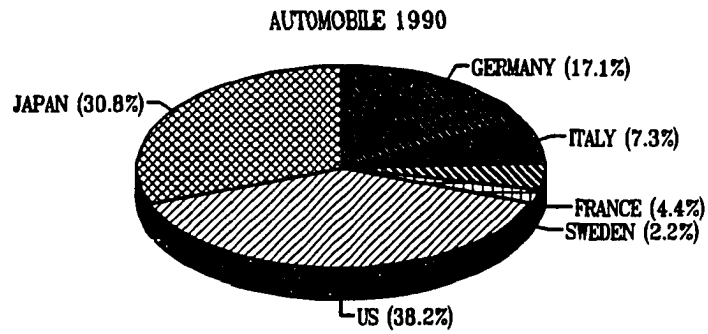


Figure 4.13 1988-1990 Automobile Market Share of the Companies Ranked in the Global 1000; Compared among the Six Leading Countries

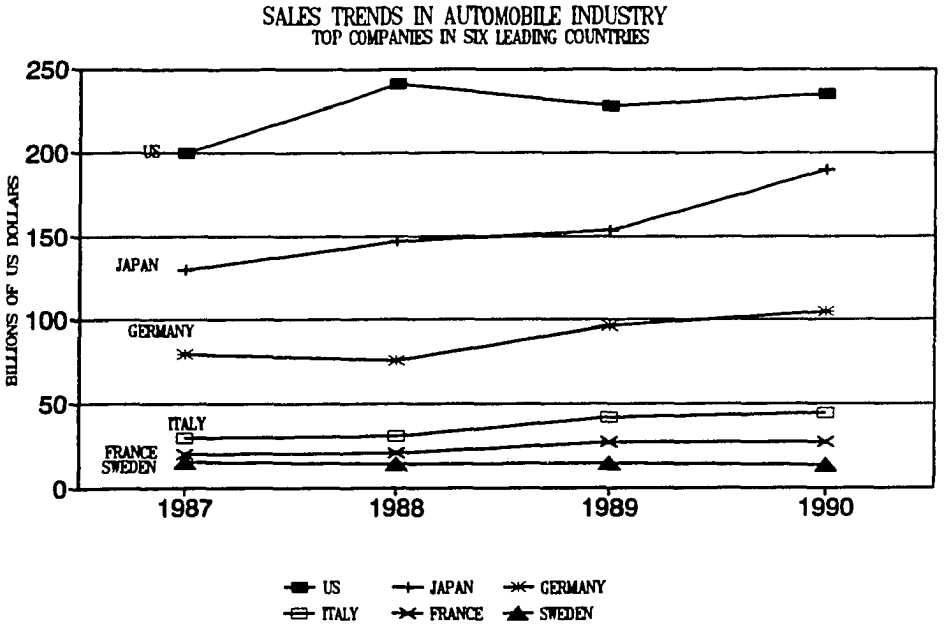


Figure 4.14 Sales Trends of the Automobile Companies Ranked in the Global 1000; Compared among the Six Leading Countries

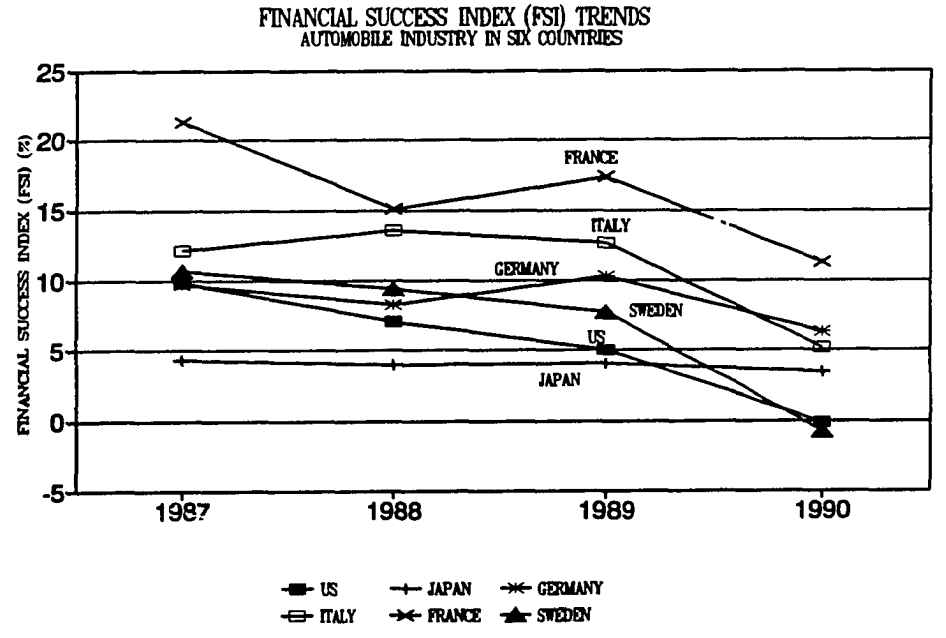


Figure 4.15 Financial Success Index Trends of the Automobile Companies Ranked in the Global 1000; Compared among the Six Leading Countries

In automobile industry, Figure 4.13 shows that the U.S.A. led the world in terms of the market share, followed closely by Japan. The total sales made by the U.S. and Japanese companies accounted for about 70% of the market share, compared among the six leading countries. In 1990 Japan gained about 3.4% of the market share while the U.S.A. lost about 2.4%. Although the U.S.A. continually lost the market share, the total sales steadily led the world as shown in Figure 4.14. German companies came on the third place at the sales around 100 billions of U.S. dollars in 1990. Italy, France and Sweden were far behind the leaders.

However, in terms of financial success in business operations, the automobile industry in France led the group as indicated by the FSI trends in Figure 4.15. The FSI of automobile industry in Japan was relatively stable although it was low, which was typical across all industries. The FSI of automobile industry in Germany was around 10% with a drop to 6% in 1990.

Except for Japan, the FSI of automobile industry in the other five countries had a moving-down trend. The U.S. and Sweden FSI's went into negative in 1990. These trends apparently portray a premonition of the financial difficulty on the U.S. and Sweden automobile industries.

The next presentation will be in beverages and tobacco industry as shown in Tables 4.13 and 4.14.

Table 4.13

Sales of the Top Beverages and Tobacco Companies combined in each of the Six Leading Countries between 1987-1990 (Unit = Billions of US Dollars)

	1987	1988	1989	1990
US	83.349	79.509	92.098	123.459
JAPAN	19.057	17.568	16.721	20.423
BRITAIN	45.908	36.599	45.691	40.159
FRANCE	4.434	6.674	8.954	8.89
CANADA	12.05	8.965	N.A.	9.176
NETHERLANDS	3.443	N.A.	3.502	3.642

Table 4.13 shows the values of sales of beverages and tobacco in the six leading countries. The sales trends are presented in a form of line graph in Figure 4.16.

Table 4.14

Financial Success Indices of the Top Beverages & Tobacco Companies combined in each of the Six Leading Countries

	1987	1988	1989	1990
US	11.79	12.91	14.17	11.12
JAPAN	5.01	3.50	2.92	2.49
BRITAIN	10.74	11.55	11.45	9.20
FRANCE	10.20	15.74	17.88	11.04
CANADA	9.31	9.67	9.47	9.44
NETHERLANDS	7.21	7.04	6.75	7.15
MEAN	9.04	10.07	10.44	8.41
S.D.	2.29	3.98	4.85	2.96

Table 4.14 shows the Financial Success Indices (FSI) of beverage and tobacco industry in the corresponding countries. The FSI trends are presented in Figure 4.17.

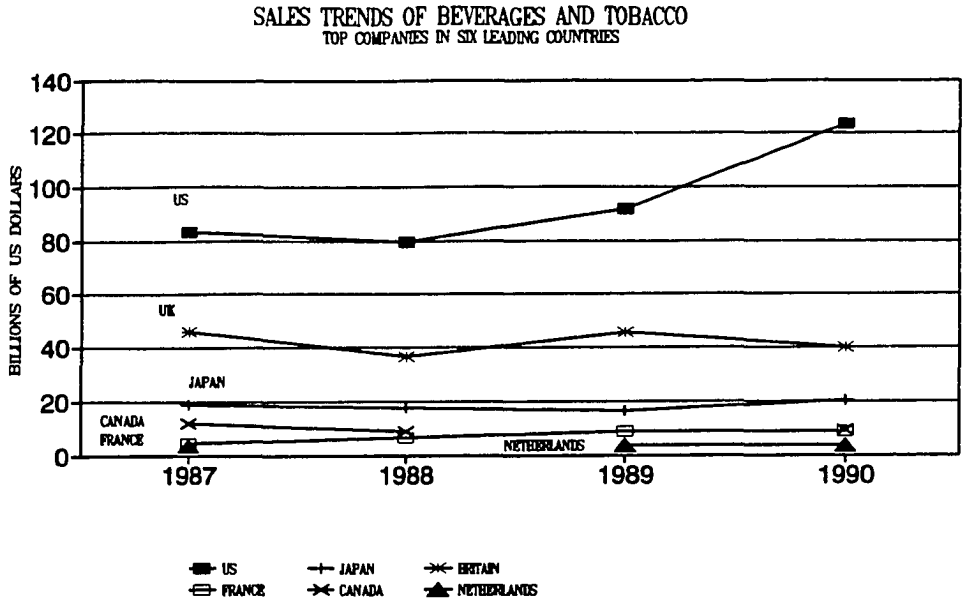


Figure 4.16 Sales Trends of the Beverage and Tobacco Companies Ranked in the Global 1000; Compared among the Six Leading Countries

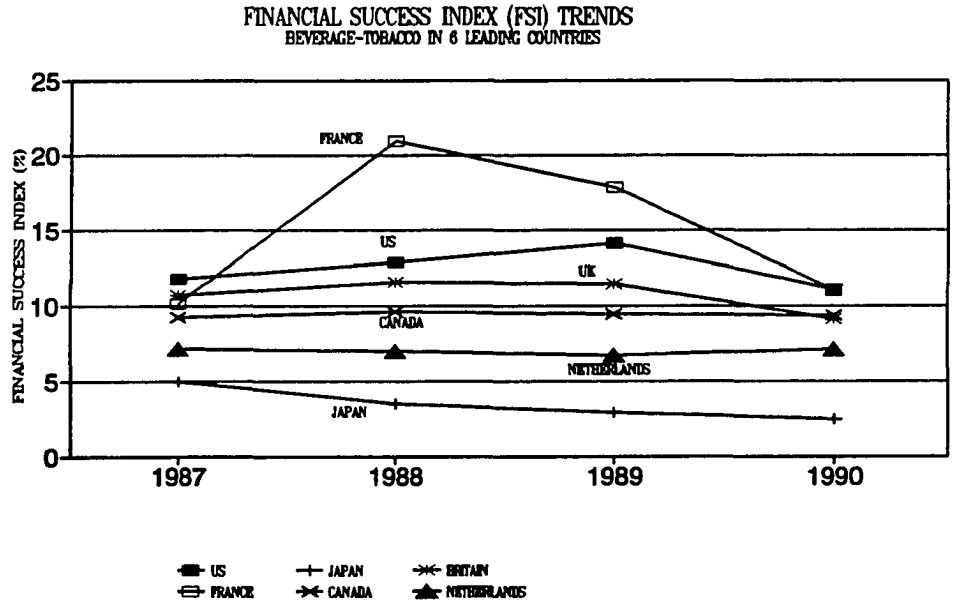


Figure 4.17 Financial Success Index Trends of the Beverage and Tobacco Companies Ranked in the Global 1000; Compared among the Six Leading Countries

In beverage and tobacco industries, Figure 4.16 shows that the sales trend of the U.S. companies led the world, with a total sales of more than 120 billions of U.S. dollars in 1990. Though U.K. companies came on the second place, the total sales was far below the U.S. The gap was about eighty three billions of U.S. dollars in 1990. Japan, with a total sales around twenty billions of U.S. dollars, did not catch up with the U.S.A. in these industries. The top companies in Canada, France and Netherlands enjoyed a total sales at the level of one digit figure.

In terms of financial success in business operations, except for France which moved up and then down, the U.S. beverage and tobacco industries consistently led the group at the FSI around 12-14%, as indicated by the FSI trends in Figure 4.15. The FSI of these two industries in the U.K. was around 11% with a drop to 9% in 1990. The FSI of this industry in Canada and Netherlands were relatively stable around 9% and 7%, consecutively. The FSI of tobacco and beverage industries in Japan show a moving-down trend at the lowest level rate of return. It is recommended to further investigate factors underlying these patterns of financial success in these two industries.

The next presentation will be in health and personal care industry as shown in Tables, 4.15 and 4.16.

Table 4.15

Sales of the Top Health & Personal Care Companies combined in each of the Seven Leading Countries between 1987-1990 (Unit = Billions of US Dollars)

	1987	1988	1989	1990
US	66.42	80.396	82.389	109.108
JAPAN	30.104	24.01	26.342	28.712
BRITAIN	12.705	11.347	15.577	18.408
SWITZERLAND	11.594	10.913	15.688	14.966
FRANCE	5.632	5.772	7.779	8.352
SWEDEN	1.925	1.95	2.452	N.A.
GERMANY	2.724	2.642	3.457	3.429

Table 4.15 shows the values of sales of the top companies in health and personal cares industry, combined in each of the seven leading countries. The sales trends are presented in a form of line graph shown in Figure 4.18.

Table 4.16

Financial Success Indices of the Top Health & Personal Cares Companies Combined in each of the Seven Leading Countries

	1987	1988	1989	1990
US	16.39	17.50	16.85	21.44
JAPAN	5.32	6.62	6.02	5.44
BRITAIN	17.62	20.07	20.48	30.26
SWITZERLAND	6.58	7.68	8.40	8.48
FRANCE	8.12	7.80	6.94	8.03
SWEDEN	13.96	13.44	12.44	7.27
GERMANY	4.63	4.84	6.16	6.71
MEAN	10.37	12.19	11.04	13.95
S.D.	5.06	5.29	5.31	8.44

The Financial Success Indices (FSI) of health and personal care industry in the seven leading countries are presented in Table 4.16, and the FSI trends are presented in Figure 4.19.

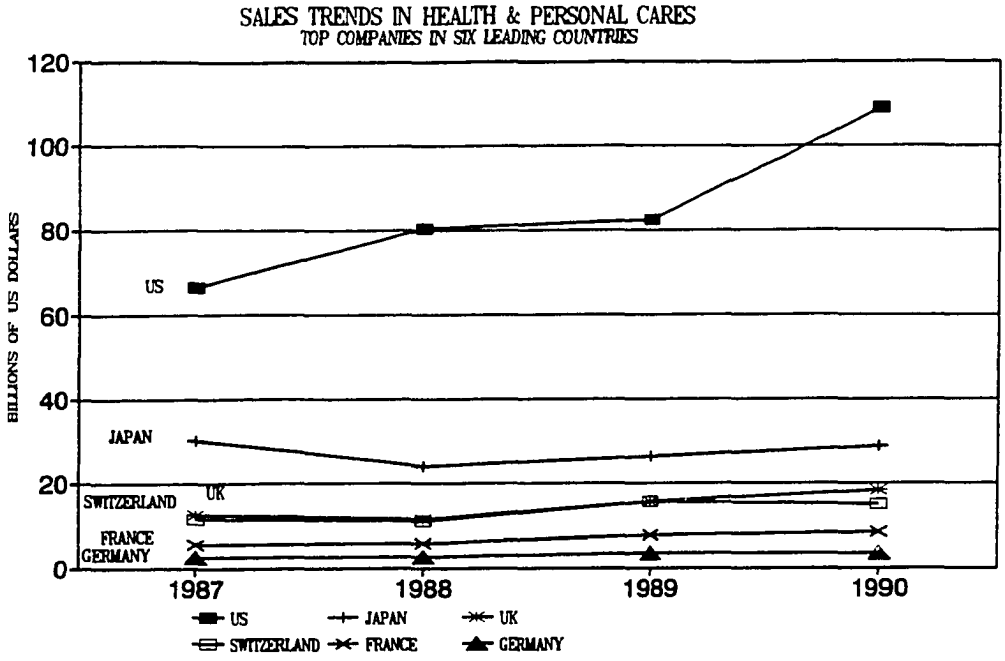


Figure 4.18 Sales Trends of the Health & Personal Cares Companies Ranked in the Global 1000; Compared among the Six Leading Countries

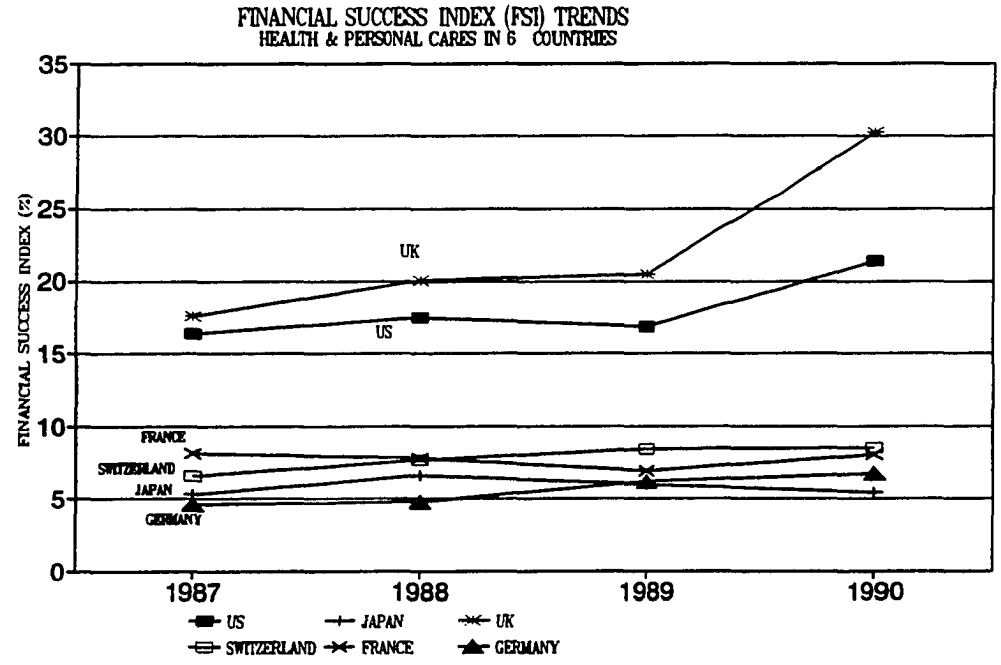


Figure 4.19 Financial Success Index Trends of the Health and Personal Care Companies Ranked in the Global 1000; Compared among the Six Leading Countries

In health and personal care industry, Figure 4.18 shows that the sales trend of U.S. companies led the world, with a total sales about 110 billions of U.S. dollars in 1990. The sales trend indicates that the U.S. soared steeply, leaving the group far behind. Though the Japanese companies came on the second place, the total sales was far below the U.S. The gap was about eighty billions of U.S. dollars in 1990, which was too far to catch up with the U.S. companies in this industry. The sales trends of the top companies in Switzerland, Britain, France and Germany were relatively stable at the lower level.

In terms of financial success in business operations, the U.K. health and personal care industry consistently led the group, as indicated by the FSI trends in Figure 4.15. Companies in the U.S.A. came closely on the second place. The FSI of this industry in the U.K. and the U.S.A. soared to the level more than 20% in 1990, leaving the rest of the countries far behind. The FSI trends of the health and personal care industry in France, Switzerland, Japan, Canada, Germany were relatively stable at the range less than 10%. The health and personal care industry in the U.S.A. was very rewarded, both in terms of sales and financial success. It is recommended to further investigate factors underlying this success.

The next presentation will be in telecommunications.

Table 4.17

Sales of the Top Telecommunication Companies combined in each of the Seven Leading Countries 1987-1990 (Unit=Billions of US Dollars)

	1987	1988	1989	1990
US	131.612	144.583	152.061	160.564
JAPAN	42.815	40.778	41.219	45.247
BRITAIN	17.355	19.022	23.673	27.158
CANADA	11.852	12.635	14.229	16.05
ITALY	11.26	12.001	13.898	15.599
SPAIN	4.748	4.797	6.777	7.783
HONG KONG	0.753	1.527	1.816	2.103

Table 4.17 shows the values of sales of the top companies in telecommunication industry, combined in each of the six leading countries. The sales trends are presented in a form of line graph shown in Figure 4.20 and 4.22.

Table 4.18
Financial Success Indices of the Top Telecommunication Companies combined in each of the Seven Leading Countries

	1987	1988	1989	1990
US	8.48	9.45	9.80	8.75
JAPAN	4.39	4.30	4.27	3.69
BRITAIN	14.29	17.04	17.14	18.81
CANADA	7.65	5.97	7.30	6.43
ITALY	4.10	3.87	4.21	3.74
SPAIN	5.95	5.76	5.74	5.71
HONG KONG	34.82	35.64	36.67	32.78
MEAN	11.38	11.72	12.16	11.62
S.D.	10.08	10.63	10.84	9.81

The Financial Success Indices (FSI) of this industry in the corresponding country are presented in Table 4.18, and the FSI trends are presented in Figure 4.21 and 4.23.

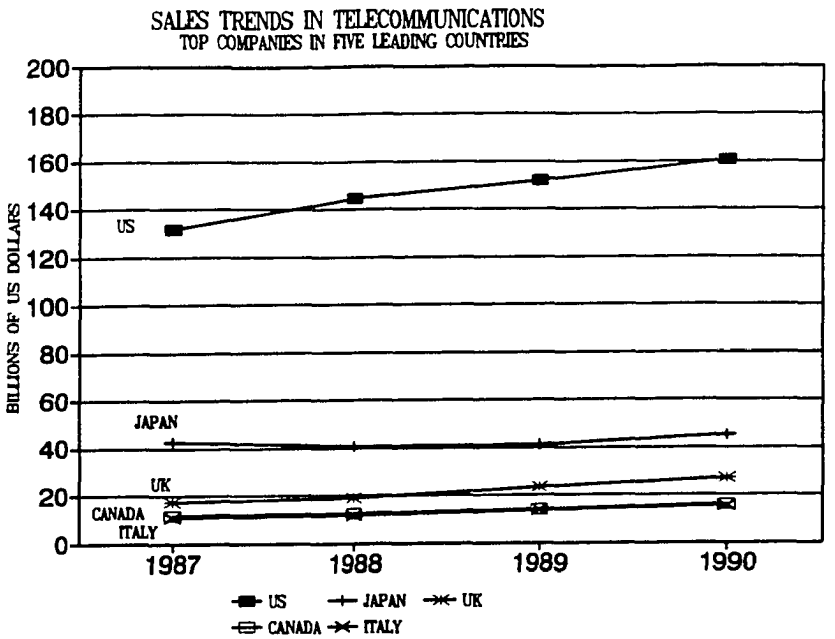


Figure 4.20 Sales Trends of the Telecommunication Companies Ranked in the Global 1000; Compared among the Five Leading Countries

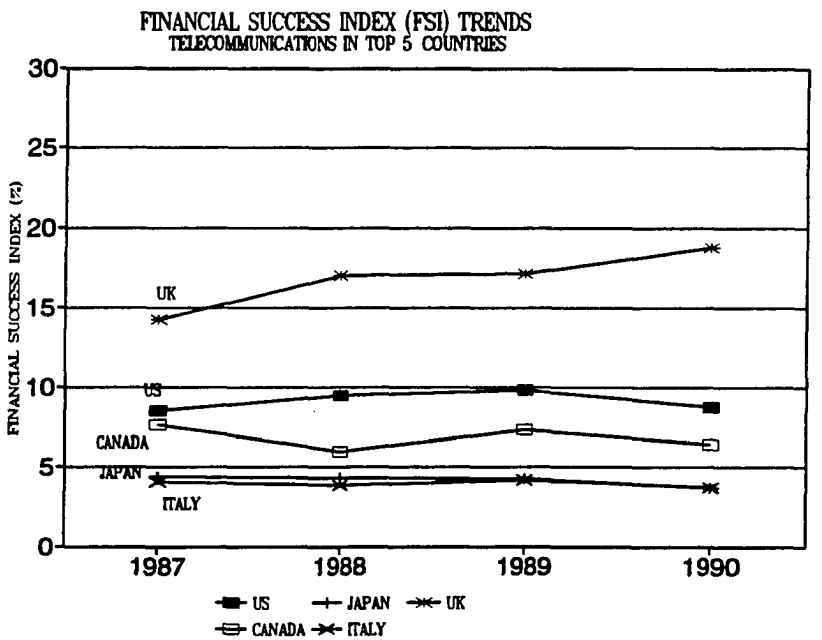


Figure 4.21 Financial Success Index Trends of the Telecommunication Companies Ranked in the Global 1000; Compared among the Five Leading Countries

In the telecommunication industry, Figure 4.20 shows that the sales trend of the U.S. companies led the world, with a total sales about 160 billions of U.S. dollars in 1990. The sales trend indicates that the U.S.A. soared steeply, leaving the group far behind. Though the Japanese came on the second place, the total sales was far below the U.S.A. The gap was about 115 billions of U.S. dollars in 1990, which was too far to catch up with the U.S.A. in this industry. The sales trends of the top companies in Britain, Canada and Italy show a moving-up direction, but, the increase is relatively small, compared to the U.S.A.

In terms of financial success in business operations, the U.K. telecommunication industry consistently led the group with a moving-up trend approaching 20%, as indicated by the FSI trends in Figure 4.21. The telecommunication industry in the U.S.A. came on the second place, with a relatively stable FSI at 9-10%. The FSI of this industry in Canada was around 6-7%. The telecommunication FSI trends in Japan and Italy were relatively stable at about 4%. It should be noted here that the Nippon Telegraph and Telephone in Japan ranked on the first place in the Global 1000 since 1987 with the market value of 103 billions of U.S. dollars in 1991.

The telecommunication industry in two potential economies, i.e., Spain and Hong Kong, are presented in Figures 4.22 and 4.23.

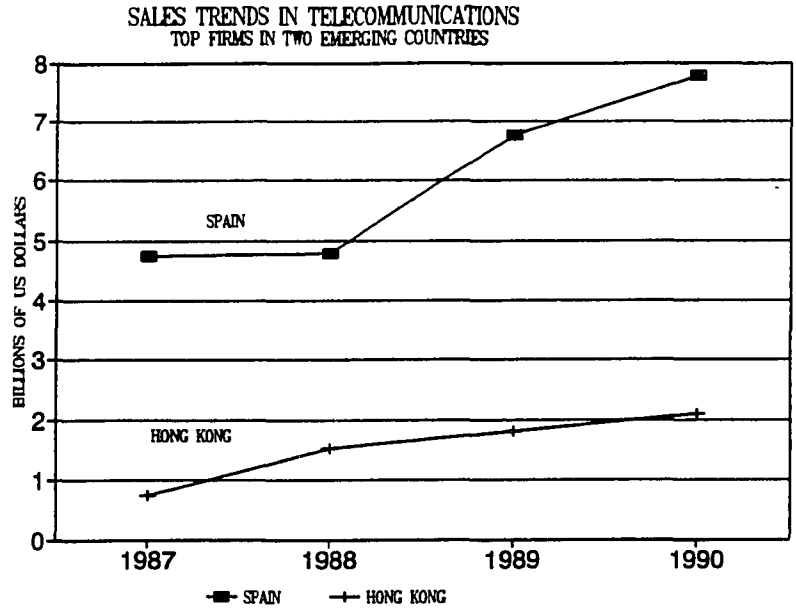


Figure 4.22 Sales Trends of the Telecommunication Companies Ranked in the Global 1000; Compared between the Two Potential Countries

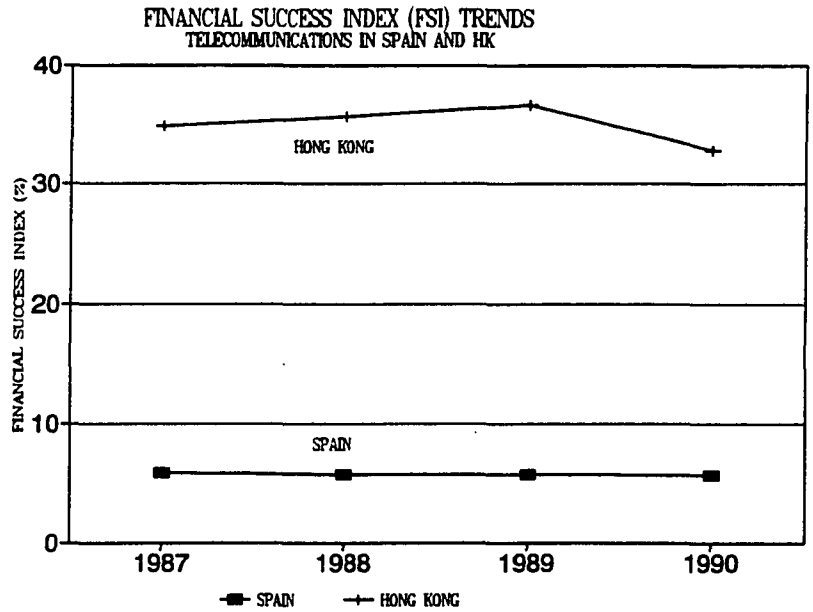


Figure 4.23 Financial Success Index Trends of the Telecommunication Companies Ranked in the Global 1000; Compared between the Two Potential Countries

Figure 4.22 shows the sales trend of the telecommunication industry in Spain and Hong Kong. It is apparent that the telecommunication sales trend in Spain shows a dramatic increase since 1988. The telecommunication sales trend in Hong Kong also show an increase since 1987.

In terms of financial success in business operations, the FSI trend of the telecommunication industry in Spain was stable at the level of 5-6%, as indicated by the FSI trends in Figure 4.21. Quite impressively, the FSI of the telecommunication industry in Hong Kong was the highest of all countries, at the rate about 35%. This unusually high rate of return suggests further investigation on the underlying factors of this financial success.

The results and findings from all industries will be discussed together in Chapter 5 after the presentation of the results from multiple regression analysis of the FSI's by using economic indicators in the parent countries as independent variables to test the validity and practicality of the newly developed construct.

4.4 The Relationship of the Financial Success Index and the Economic Indicators of the Parent Country: A Multiple Regression Analysis of the FSI and the Parent Country Economic Conditions

In this section of Chapter 4, results from a multiple regression analysis of the FSI's of four selected industries and the country composite will be comprehensively presented. The main hypothesis for this analysis is that the Financial Success Index (FSI) has a linear relationship to the economic indicators in the parent countries of the companies ranked in the Global 1000. The second hypothesis is that the relationship between the FSI and the economic indicators is industry-specific. In other words, the FSI of a particular industry relates to a particular set of economic indicators, which may not be the same across industries.

Fourteen economic indicators in twenty countries were selected to be employed in the multiple regression analysis of the five FSI categories. The economic indicators are displayed along with the numerical values in the Appendix Section. Definitions can be found in the section of Definitions of Terms in Chapter 1.

First, the results of the multiple regression analysis of the country composite FSI are presented in Table 4.19.

Table 4.19

A Summary Table of Multiple Regression Analysis of the Country Composite Financial Success Indices Using Economic Indicators in Parent Countries as Independent Variables

(1) ----------Coefficients----------

Multiple R	.8155
R Square	.6650
Adjusted R Square	.6256
Standard Error	4.1191

(2) ----------Analysis of Variance----------

	Degree of Freedom	Sum of Squares	Mean Square	F
Regression	2	572.50387	286.25194	16.8713
Residual	17	288.43515	16.96677	

Significance of F = .0001

(3) ---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig.T
Q3	1.91236	.33407	.83726	5.724	.0001
Q8	.07024	.02751	.37346	2.553	.0206
Constant	-195.4648	35.70669		-5.474	.0001

(4) -------- Correlation between Q3 and Q8 ----------

Coefficient (r)	Significance (p)
-.193	.236

(5) -------- Variables not in the Equation ----------

Variable	Beta In	Partial	Minimum Tolerance	T	Sig.T
Q1	.02564	.03745	.68625	.150	.8827
Q2	.02784	.04068	.69131	.163	.8727
Q4	-.02545	-.04308	.88410	-.172	.8652
Q5	-.02571	-.03779	.72390	-.151	.8817
Q6	.04213	.06841	.85245	.274	.7874
Q7	-.04299	-.06388	.73955	-.256	.8012
Q9	.03718	.05472	.69067	.219	.8293
Q10	-.36808	-.53065	.64416	-2.504	.0235
Q11	-.04702	-.07061	.75534	-.283	.7807
Q12	-.03438	-.05098	.73659	-.204	.8408
Q13	-.05580	-.08922	.85070	-.358	.7248
Q14	-.14911	-.21925	.72428	-.899	.3821

Results in the first box of Table 4.19 indicate an adjusted coefficient of determination or the adjusted R square of 0.665. It can be interpreted that, in the population, the combination of the two variables, Consumer Price Index (Q3) and Export Price Index (Q8), explains or accounts for 66.5% of the variation of the Country Composite Financial Success Index. This linear relationship is confirmed, as shown in the second box of Table 4.19, by a significance of the F value at p =.0001 in the analysis of variance of the population R square. The probability that it could have occurred by chance is less than one in ten-thousand.

Results in the third box of Table 4.19 show the partial regression coefficients (B) for the two independent variables and a constant. These values can be used to formulate an equation to predict the Country Composite Financial Success Index. In the multiple regression equation, the coefficient for Consumer Price Index is 1.433 and the coefficient for Export Price Index is .0636. The constant in the equation is -138.185, which is the intercept of the regression line on Y axis. The standard errors of the coefficients are 0.334, 0.028, and 35.71 for the Consumer Price Index, the Export Price Index, and the constant, consecutively. The T value of the Consumer Price Index is significant at p <.0001, the T value of the Export Price Index is significant at p =.0206, and the T value of

the constant is significant at p <.0001, thus it is confirmed that the two variables relate significantly to the variation of the Financial Success Index. The probability that it could have occurred by chance is less than one in ten-thousand for the Consumer Price Index, and about two hundredths for the Export Price Index.

The standardized regression coefficients (Beta) of the two independent variables, show that Consumer Price Index holds a weight which is about twice as much as the weight of Export Price Index in the regression of the Country Composite Financial Success Index (FSI).

To assure that the two surviving independent variables are not correlated, (i.e., they independently contribute to the multiple regression) results of correlation statistics of the two variables were calculated as shown in the fourth box of Table 4.19. The significance (p =.236) indicate that the Consumer Price Index and the Export Price Index are not significantly correlated with each other at the significant level of p <.05. The probability that the values of r could have occurred by chance is about one fourth.

The fifth box in Table 4.19 shows statistics of the variables not in the equation. Although the GNP per capita (Q10) shows a potential to be a candidate to enter the equation, it significantly correlates to the Consumer Price Index in the equation at p =.01. Therefore, it was dropped from the multiple regression equation. The rest of the

variables, statistically, show no potential as candidates for entering the equation. Therefore, the final prediction equation contains only the Consumer Price Index and the Export Price Index.

As a product of the multiple regression analysis, the equation for the prediction of the Country Composite Financial Success Index from Consumer Price Index and Export Price Index can be formulated. The formula is expressed as shown in Equation No. 4.5.

Equation No.4.5
$FSI_{cc} = 1.9124(CPI) + .0702(EPI) - 195.465$

where FSI_{cc} = Country Composite Financial Success Index
CPI = Consumer Price Index of a country
EPI = Export Price Index of a country

In sum, the major finding of this multiple regression analysis supports the hypothesis that there is a linear relationship between the Country Composite Financial Success Index (FSI_{cc}) and economic indicators in the parent countries of the companies ranked in the Global 1000. The combination of Consumer Price Index and Export Price Index accounts for approximately 66.5% of the variation of the Country Composite Financial Success Index. Due to the positive signs of the coefficients, it can be further interpreted that the level of financial success of the companies listed in the Global 1000 relates to the price

increase in domestic goods and services as well as the price increase of the export. The higher weight of the Consumer Price Index suggests that the financial success relates more to the domestic than to the export.

In addition, a formula for the prediction of the FSI_{cc} from the values of the two independent variables is obtained. This formula can be used to provide the initial information about the parent country economic conditions in regard to the potential financial success of conducting business from that parent country.

Further interpretation of the results in Table 4.19 will be presented after the analysis of the Financial Success Index (FSI) in four selected industries, namely, automobile, beverage and tobacco, health and personal cares, and telecommunication industries. Multiple regression analysis was employed to test the linear relationship between the economic indicators and the Financial Success Index of the industry.

Results of multiple regression analysis of the Financial Success Index in automobile industry in six leading parent countries are presented in Table 4.20.

Table 4.20

A Summary Table of Multiple Regression Analysis of the Financial Success Index in the Automobile Industry Using Economic Indicators in Six Parent Countries as Independent Variables

(1) Coefficients

Multiple R	.86580
R Square	.74960
Adjusted R Square	.68701
Standard Error	2.20400

(2) Analysis of Variance

	Degree of Freedom	Sum of Squares	Mean Square	F
Regression	1	58.16866	58.16866	11.9747
Residual	4	19.43047	4.85762	

Significance of F : p = .0258

(3) Variables in the Equation

Variable	B	SE B	Beta	T	Sig.T
Q10	-1.22384	.35366	-.86580	-3.460	.0258
Constant	31.84407	6.43447		4.949	.0078

(4) Variables not in the Equation

Variable	Beta In	Partial	Minimum Tolerance	T	Sig.T
Q1	.11478	.18945	.68215	.334	.7602
Q2	.12974	.21465	.68532	.381	.7288
Q3	.14307	.25355	.78642	.454	.6807
Q4	-.37772	-.68827	.83137	-1.643	.1989
Q5	-.17228	-.31088	.81531	-.567	.6106
Q6	.22437	.44613	.98997	.863	.4514
Q7	-.26537	-.47194	.79194	-.927	.4222
Q8	-.11876	-.23252	.95986	-.414	.7066
Q9	-.42503	-.80539	.89908	-2.353	.1000
Q11	-.19322	-.38498	.99406	-.722	.5222
Q12	-.16210	-.29211	.81312	-.529	.6334
Q13	.02354	.03339	.50346	.058	.9575
Q14	.01413	.02290	.65741	.040	.9709

The result in the first box of Table 4.20 shows an adjusted coefficient of determination or the adjusted

R square of 0.687. It can be interpreted that, in the population, GNP per capita explains or accounts for 68.7% of the variation of the Financial Success Index of the automobile industry in a country. This linear relationship is confirmed, as shown in the second box of Table 4.20, by the significance of the F value at $p < .05$ in the analysis of variance of the population R square. The probability that it could have occurred by chance is less than five hundredths.

Results in the third box of Table 4.20 show partial regression coefficients (B) for the independent variable and a constant. These values can be used to formulate an equation to predict the Financial Success Index in automobile industry in a country. The coefficient -1.22384 is for the GNP per capita, expressed in a unit of thousands of US dollars. The constant in the equation is 31.84407 which is the intercept of the regression line on Y axis. The standard errors of the coefficient are 0.35366 and 6.43447 for the GNP per capita and for the constant, consecutively. The T values of the coefficients for GNP per Capita and the constant are significant at $p < .05$. The probability that it could have occurred by chance is less than five hundredths. Therefore, it is confirmed that the GNP per Capita relates significantly to the variation of the Financial Success Index.

The fifth box in Table 4.20 shows statistics of the variables not in the equation. None of the variables shows statistically significant value to enter the equation. Therefore, the final prediction equation contains only the GNP per Capita.

As a product of the multiple regression analysis, the equation for the prediction of the Financial Success Index in automobile industry in a country from GNP per Capita can be formulated. The formula is expressed as shown in Equation 4.6.

Equation No.4.6
$FSI_{Auto} = 31.844 - 1.224(GNP/CPT)$

where FSI_{Auto} = the Automobile Financial Success Index in a Country
GNP/CPT = GNP per Capita (thousands of US dollars)

In sum, the major finding of this multiple regression analysis supports the hypothesis that there is a linear relationship between the Financial Success Index of automobile industry and the economic conditions in the parent countries of the global companies. The GNP per capita explains or accounts for about 70% of the variation of the Financial Success Index. However, the negative direction the relationship is recommended for further study.

Results of multiple regression analysis of the Financial Success Index in beverage and tobacco industries in six leading parent countries are presented in Table 4.21.

Table 4.21

A Summary Table of Multiple Regression Analysis of the Financial Success Index in the Beverage & Tobacco Industries; Using Economic Indices in Six Leading Parent Countries as Independent Variables

(1) ----------Coefficients----------

Multiple R	.98506
R Square	.97034
Adjusted R Square	.95057
Standard Error	.77617

(2) ----------Analysis of Variance----------

	Degree of Freedom	Sum of Squares	Mean Square	F
Regression	2	59.12762	29.56381	49.0737
Residual	3	1.80731	.60244	

Significance of F: p =.005

(3) ---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig.T
Q2	1.27025	.18568	.69399	6.841	.0064
Q6	.10486	.01850	.57494	5.668	.0109
Constant	-124.42933	18.99105		-6.552	.0072

(4) ------- Correlation between Q2 and Q6 ----------

Coefficient (r)	Significance (p)
-.02	.483

(5) -------- Variables not in the Equation ----------

Variable	Beta In	Partial	Minimum Tolerance	T	Sig.T
Q1	-.72461	-.57992	.01850	-1.007	.4201
Q3	-.33736	-.56118	.08207	-.959	.4388
Q4	-.18563	-.98580	.83651	-8.303	.0142
Q5	-.04342	-.23116	.83456	-.336	.7688
Q7	-.03673	-.20417	.88588	-.295	.7958
Q8	.05188	.29630	.94027	.439	.7037
Q9	-.16913	-.97204	.94219	-5.855	.0280
Q10	-.06865	-.31058	.59936	-.462	.6894
Q11	-.04009	-.21592	.83205	-.313	.7841
Q12	-.04648	-.24577	.81548	-.359	.7542
Q13	-.05996	-.32257	.84872	-.482	.6774
Q14	-.24339	-.56620	.16051	-.971	.4338

Results in the first box of Table 4.21 show an adjusted coefficient of determination or the adjusted R square of .9506. It can be interpreted that, in the population, the combination of the two variables, i.e., Domestic Absorption Index and Export Values of Non-fuel Products (include the export values of beverages & tobacco), explains or accounts for approximately 95% of the variation of the Financial Success Index of beverage and tobacco industry in a country. This linear relationship is confirmed, as shown in the second box of Table 4.20, by the significance of the F value at p =.005 in the analysis of variance of the population R square. The probability that it could have occurred by chance is five thousandths.

Results in the third box of Table 4.21 provide partial regression coefficients (B) for the two surviving independent variables and a constant. These values can be used to formulate an equation to predict the Financial Success Index in beverage and tobacco industry in a country. The coefficient for Domestic Absorption Index is 1.27, and the coefficient of .1049 is for Export Values of Non-Fuel Products in a unit of billions of US dollars. The constant in the equation is -124.429. It is the intercept of the regression line on Y axis. The standard errors are .0185, .1857 and 18.991 for the Domestic Absorption Index, the Export Values of Non-fuel Products, and the constant, consecutively. The T values of the two coefficients and the

constant are significant at p <.01, thus it is confirmed that the two variables are related significantly to the variation of the Financial Success Index. The probability that it could have occurred by chance is less than one hundredth.

The standardized regression coefficients (Beta) of the two independent variables show that the Domestic Absorption Index holds a weight which is slightly higher than the weight of Export Values of Non-Fuel-Products (includes the export values of beverage and tobacco) in predicting the Financial Success Index of beverage and tobacco industries in a country.

To assure that the two independent variables do not correlate, i.e., they independently contribute to the regression equation, results of correlation statistics of the two variables were calculated as shown in the fourth box of Table 4.21. The coefficient (r) of -.02 and the significance (p) of .483 indicate that the Domestic Absorption Index and the Export Values of Non-fuel Products are not significantly correlated with each other at the significant level of .05. The probability that the value of r = -.02 could have occurred by chance is about a half (48.3%).

The fifth box in Table 4.21 shows statistics of the variables not in the equation. Although the Employment Index and the Import Price Index show a potential as

candidates for entering the equation, they do not contribute significantly to the change of the R square. Therefore, they were dropped from the multiple regression equation. The rest of the variables, statistically, show no potential as candidates for entering the equation. Therefore, the equation contains only the Domestic Absorption Index and the Export Values of Non-fuel Products.

As a product of the multiple regression analysis, the equation for the prediction of the Financial Success Index in beverage and tobacco industry in a country by using the Domestic Absorption Index and the Export Values of Non-Fuel Products can be formulated. The formula is expressed as shown in Equation No. 4.7.

Equation No.4.7
$FSI_{bev\text{-}tob} = 1.27(DAI) + .105(NFP) - 124.429$

where $FSI_{bev\text{-}tob}$ = Financial Success Index of Beverage and Tobacco Industry in a country
NFP = Export values of Non-Fuel Products (in billions of US dollars)
DAI = Domestic Absorption Index

In sum, the major finding of this multiple regression analysis supports the hypothesis that there is a linear relationship between the Financial Success Index in beverage and tobacco industry and economic conditions in the parent countries of the companies ranked in the Global 1000. The combination of the Domestic Absorption Index and the Export Values of Non-fuel Products explains or accounts for 95% of

the variation of the Financial Success Index (FSI) of beverage and tobacco industry in a country.

Based on the positive signs of the coefficients, it can be further interpreted that the Financial Success Indices of the beverage and tobacco companies listed in the Global 1000 have a linear relationship with the price increase of domestic consumption as well as the increase of the value of the export.

In addition, a formula for the prediction of the $FSI_{bev\text{-}tob}$ is obtained from the multiple regression analysis. This formula can be used to provide the initial information about the parent country economic conditions in regarding to the potential financial success of beverage and tobacco industries in conducting business from those parent countries.

Results of multiple regression analysis of the Financial Success Index in health and personal cares industries in six leading parent countries are presented in Table 4.22.

Table 4.22

A Summary Table of Multiple Regression Analysis of the Financial Success Index in the Health & Personal Care Industry; Using Economic Indicators in Seven Parent Countries as Independent Variables

(1) ----------Coefficients----------

Multiple R	.94462
R Square	.89231
Adjusted R Square	.83847
Standard Error	2.37053

(2) ----------Analysis of Variance----------

	Degree of Freedom	Sum of Squares	Mean Square	F
Regression	2	186.25425	93.12713	
Residual	4	22.47772	5.61943	
				16.5724

Significance of F = .0116

(3) ---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig.T
Q13	.15253	.02734	1.02077	5.579	.0051
Q7	-.03926	.01049	-.68484	-3.743	.0201
Constant	8.16101	1.98145		4.119	.0146

(4) ------- Correlation between Q7 and Q13 ----------

Coefficient (r)	Significance (p)
.443	.160

(5) -------- Variables not in the Equation ----------

Variable	Beta In	Partial	Minimum Tolerance	T	Sig.T
Q1	-.18197	-.42761	.58235	-.819	.4726
Q2	-.16826	-.38775	.56207	-.729	.5190
Q3	-.05053	-.11365	.51919	-.198	.8556
Q4	-.18116	-.30391	.28583	-.553	.6191
Q5	.96550	.46932	.02544	.921	.4252
Q6	.16263	.40317	.66184	.763	.5009
Q8	-.20250	-.53381	.67173	-1.093	.3542
Q9	.03010	.08580	.71964	.149	.8909
Q10	-.19429	-.54133	.68915	-1.115	.3461
Q11	.16532	.12394	.06053	.216	.8426
Q12	.47093	.26340	.03369	.473	.6685
Q14	-.03096	-.08935	.72491	-.155	.8864

Results in the first box of Table 4.22 show an adjusted coefficient of determination or the adjusted R square of 0.8385. It can be interpreted that, in the population, the combination of the two variables, the Foreign Trade of Manufactures and the Balance of Payments in Factor Services, explains or accounts for 84% of the variation of the Financial Success Index of health and personal care industry in a country. The linear relationship is confirmed, as shown in the second box of Table 4.22, by the significance of the F value at p =.01 in the analysis of variance of the population R square. The probability that it could have occurred by chance is one hundredth.

Results in the third box of Table 4.22 provide partial regression coefficients (B) for the two independent variables and a constant. These values can be used to formulate an equation to predict the Financial Success Index of health and personal care industry in a country. The coefficient of -.0393 is for Foreign Trade of Manufactures and the multiplier of .1525 is for Balance of Payments in Factor Services, which are both expressed in a unit of billions of US dollars. The constant in the equation is 8.161, which is the intercept of the regression line on Y axis. The standard errors are 0.0149, 0.02734 and 1.98145 for the Foreign Trade of Manufactures, the Balance of Payments in Factor Services and the constant, consecutively. The T value of the coefficient for the Balance of Payments

in Factor Servicesis significant at p =.005. The T value of the coefficient for the Manufactures is significant at p = .02. The T value of the constant is significant at p =.01. Thus it is confirmed that the two independent variables accounts significantly for the variation of the Financial Success Index. The probability that it could have occurred by chance is less than five thousandths for Balance of Payments in Factor Services and two hundredths for Foreign Trade of Manufactures.

The standardized regression coefficients (Beta) of the two independent variables, show that the Balance of Payments in Factor Services holds a weight which is twice as much as the weight of the Foreign Trade of Manufactures in the multiple regression of the Financial Success Index of health and personal care industry in a country.

To assure that the two independent variables were not correlated, i.e., they independently contribute to the regression equation, results of correlation statistics of the two variables were calculated as shown in the fourth box of Table 4.22. The coefficient (r) of .443 and the significance value (p) of .16 indicate that Q7 and Q13 do not significantly correlate to each other at the significant level of .05. The probability that the value of r = .443 could have occurred by chance is about 16%. To avoid the problem of multicolinearlity in the presence of the other variable in multiple regression, the .01 minimum tolerance

test was also set for the variables to be passed before entering the equation.

The fifth box in Table 4.22 shows statistics of the variables not in the equation. None of the variables shows a potential to be a candidate to enter the equation, thus the equation contains only Q7 and Q13.

As a product of multiple regression analysis, an equation for the prediction of the Financial Success Index in health and personal care industry in a country from Foreign Trade of Manufactures (Q7) and Balance of Payments in Factor Services can be formulated. The formula is expressed as shown in Equation No.4.8.

Equation No.4.8
$FSI_{health} = 8.161 + .1525(BFC) - .0393(FTM)$

where FSI_{health} = Financial Success Index of Health and Personal Care Industry in a country
BFC = Balance of Payments in Factor Services (in billions of US dollars)
FTM = Foreign Trade of Manufactures (in billions of US dollars)

In sum, the major finding of this multiple regression analysis supports the hypothesis that there is a linear relationship between the Financial Success Index in health and personal care industry and economic conditions in the parent countries of the companies ranked in the Global 1000. The combination of Foreign Trade of Manufactures (Q7) and Balance of Payments in Factor Services (Q13) explains or

accounts for 84% of the variation of the Financial Success Index (FSI) of health and personal care industry in a country. Based on the signs of the coefficients, it can be interpreted that the Financial Success Index of health and personal care industry (FSI_{health}) correlate positively to income from direct investment abroad (see the definition of Factor Services in Chapter 1), but, the FSI_{health} correlates negatively to the foreign trade of manufactures (see the definition of Manufactures in Chapter 1). However, the weight of the Factor Services is almost twice as much as the weight of Manufactures. It may be further interpreted that the level of financial success in conducting business in health and personal care industry relates highly to income from foreign direct investment, but some countries which concentrate on heavy industry may have lower return on this industry. Further investigation on factor related to this issue is recommended.

In addition, a formula for the prediction of the FSI_{health} by using the two independent variables is obtained. This formula provide an overview information about the parent country economic conditions regarding the potential financial success of conducting business in health and personal care industry from that parent country.

Next, multiple regression results on the FSI in telecommunication industry are presented in Table 4.23.

Table 4.23

A Summary Table of the Multiple Regression Analysis of the Financial Success Index in Telecommunications Industry Using Economic Indicators in Parent Countries as Independent Variables

(1) ----------Coefficients----------

Multiple R	.97313
R Square	.94698
Adjusted R Square	.92047
Standard Error	3.23783

(2) ----------Analysis of Variance----------

	Degree of Freedom	Sum of Squares	Mean Square	F
Regression	2	748.95045	374.47523	
Residual	4	41.93423	10.48356	
				35.7202

Significance of F = .0028

(3) ---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig.T
Q2	2.29409	.46399	.60660	4.944	.0078
Q4	6.46404	1.36816	.57966	4.725	.0091
Constant	-884.93325	130.32169		-6.790	.0025

(4) ------- Correlation between Q2 and Q4 ----------

Coefficient (r)	Significance (p)
-.2374	.325

(5) -------- Variables not in the Equation ----------

Variable	Beta In	Partial	Minimum Tolerance	T	Sig.T
Q1	-1.05987	-.68437	.01168	-1.327	.3156
Q3	-.16777	-.30273	.09283	-.449	.6973
Q5	.19771	.90318	.60424	2.976	.0968
Q6	.04980	.28691	.91386	.424	.7131
Q7	.22127	.95804	.53180	4.727	.0420
Q8	-.14213	-.82160	.92644	-2.038	.1784
Q9	.09999	.58031	.92191	1.008	.4197
Q10	.22885	.81160	.36418	1.965	.1884
Q11	.17341	.86419	.71914	2.429	.1358
Q12	.19293	.88917	.61504	2.748	.1108
Q13	.19131	.87731	.60891	2.585	.1227
Q14	.08565	.37913	.54795	.579	.6209

Results in the first box of Table 4.23 show an adjusted coefficient of determination or the adjusted R square of 0.92047. It can be interpreted that, in the population, the combination of the two variables, i.e., Domestic Absorption Index (Q2) and Employment Index (Q4) explains or accounts for approximately 92% of the variation of the Financial Success Index of telecommunication industry $FSI_{telecom}$ in a country. This linear relationship is confirmed, as shown in the second box of Table 4.23, by the significance of the F value at $p < .005$ in the analysis of variance of the population R square. The probability that it could have occurred by chance is less than five thousandths.

Results in the third box of Table 4.23 show partial regression coefficients (B) for the two independent variables and a constant. These values can be used to formulate an equation to predict the Financial Success Index in telecommunication industry in a country. The coefficient for Domestic Absorption Index (Q2) is 2.294, and the coefficient for Employment Index (Q4) is 6.464. The constant in the equation is -884.933 which is the intercept of the regression line on Y axis. The standard errors are 0.464, 1.368 and 130.322 for Q2, Q4 and the constant, consecutively. The T values of the coefficients for Q2, Q4 and the constant are significant at $p < .01$, thus, it is confirmed that the two independent variables correlate

significantly to the variation of the Financial Success Index. The probability that it could have occurred by chance is less than one hundredth.

The standardized regression coefficients (Beta) of the two independent variables, show that Domestic Absorption Index (Q2) and Employment Index (Q4) carry about the same weight (0.60 and 0.58) in the multiple regression of the Financial Success Index of telecommunication industry.

To assure that the two independent variables were not correlated, i.e., they independently contribute to the regression equation, results of correlation statistics of the two variables were calculated as shown in the fourth box of Table 4.23. The coefficient (r) of -.2374 and the significance (p) of .325 indicate that Q2 and Q4 do not significantly correlate to each other at the significant level of p = .05. The probability that the value of r = -.2374 could have occurred by chance is about one third. To avoid the problem of multicolinearlity in the presence of the other variable in multiple regression, the .01 minimum tolerance test was also set for the variables to be passed before entering the equation.

The fifth box in Table 4.23 shows statistics of the variables not in the equation. Although Q7 seems to be a potential candidate to enter the equation, it was not significantly contribute to the change of R square. None of the rest variables shows a potential to be a candidate to

enter the equation. Therefore, the equation contains only Q2 and Q4.

As a product of the multiple regression analysis, the equation for the prediction of the Financial Success Index in telecommunication industry in a country from the Domestic Absorption Index and Employment Index can be formulated. The formula is expressed as shown in Equation No.4.9.

Equation No.4.9
$FSI_{telecom} = 2.294(DAI) + 6.464(EI) - 884.933$

where $FSI_{telecom}$ = Financial Success Index of Telecommunication Industry in a country
DAI = Domestic Absorption Index
EI = Employment Index

In sum, the major finding of this multiple regression analysis supports the hypothesis that there is a linear relationship between the Financial Success Index in beverage and tobacco industry and the economic conditions in the parent countries of the companies ranked in the Global 1000. The combination of Domestic Absorption Index (Q2) and Employment Index (Q4) explains or accounts for 92% of the variation of the Financial Success Index (FSI) of telecommunication industry in a country. Based on the direction of the positive signs of the coefficients, it can be further interpreted that the level of financial success in conducting business in telecommunication industry positively correlates to the price increase of domestic consumption and the number of persons engaged in employment. It is not

surprising that the level of financial success in conducting business in telecommunication industry relate to domestic usage and price though it is international in term of business operations.

In addition, a formula for the prediction of the $FSI_{telecom}$ is obtained from the multiple regression analysis. This formula can be used to provide the initial information about the parent country economic conditions in regard to the potential financial success of telecommunication industry in conducting business from that parent country.

Further interpretation and discussion of the results in Table 4.23 will be presented together with the results from other industries. All results from multiple regression analysis, from Table 4.19 to Table 4.23, are summarized in Table 4.24. The summary table shows an overall picture of the newly developed construct of the Financial Success Index (FSI) in relation to the selected economic indicators of the parent countries of the companies ranked in the Global 1000.

Table 4.24

A Summary Table of the Multiple Regression Results: Including All Economic Indices which Explain the Variation of the Financial Success Indices of the Country Composite and the Four Selected Industry Groups

INDEPENDENT VARIABLE			COUNTRY COMPOSITE	AUTO-MOBILE	BEVERAGE-TOBACCO	HEALTH-PRODUCTS	TELECOM-MUNICATION
Q1	DOMESTIC PRICES/ DEFLATORS	OVERALL GDP					
Q2		DOMESTIC ABSORPTION			+.694**		+.607**
Q3		CONSUMER PRICE INDEX	+.837***				
Q4	EMPLOYMENT INDEX						+.580**
Q5	FOREIGN TRADE	VALUE OF EXPORT					
Q6		NON-FUEL-PRODUCTS			+.575**		
Q7		MANUFACTURES				-.685*	
Q8	TERM OF TRADE	EXPORT PRICE INDEX	+.373*				
Q9		IMPORT PRICE INDEX					
Q10	GNP PER CAPITA			-.866*			
Q11	BALANCE OF PAYMENTS	EXPORT/GOOD-SERVICES					
Q12		MERCHANDISES					
Q13		FACTOR SERVICES				+1.02**	
Q14	INTERNATIONAL RESERVES						
		Multiple R square	.665	.745	.970	.892	.947
		Adjusted R square	.626	.687	.951	.838	.921
		Standard Error	4.119	2.204	.776	2.370	3.238
		Significance of F value	.0001	.05	.005	.01	.01

Note: Significance of T value of the variables; *<.05 **<.01 ***<.001

The main results from multiple regression analysis presented in Table 4.19 to Table 4.23 are summarized in Table 4.24. The independent variables selected from country economic indicators are arranged vertically on the left-hand side of the table (Q1 to Q14). The variables are fully specified in the next two columns of the table. Those terms are defined in accordance with the definition in the World Tables published by World Bank in 1991. The definitions of those terms can be found in the section of Definitions of Terms in Chapter 1. All monetary values (e.g., GNP per Capita, imports and exports) are in the US currency adjusted for inflation in two countries by using an equation as indicated in the *World Tables*. The economic indices were calculated by using the values in 1987 as the based year.

The five columns on the right-hand side of Table 4.24 contain the statistical significance of the variables which account for the variation of the Financial Success Indices of the country composite and four other selected industries, i.e., automobile, beverage and tobacco, health and personal cares, and telecommunication industries. In the lower part of the table, the coefficients of determination, R square and adjusted R square, are presented in each column along with the standard error of regression and the significance of F values from analysis of variance of the population R square or the adjusted R square.

The overall results show that the newly developed construct, namely, the Financial Success Index (FSI) holds a strong degree of linear relationship to economic indicators in the parent countries. The combination of economic indicators in the parent country of the companies can explain the variation of the FSI across the four selected industries and the country composite, ranging from 68% to 92% of the variation. It can be interpreted that the level of financial success in the companies ranked in the Global 1000 strongly relates to the economic conditions of the parent country. This interpretation is supported by the analysis of variance of the population R square, in which the F values are significant at the levels ranging from .03 to .0001. In other words, the high percentages of the explained variations (68% to 92%) do not occur by chance.

One of the major results presented in Table 4.24 is the regression of the Country Composite Financial Success Index (FSI) on the combination of the Consumer Price Index and the Export Price Index. The F value from analysis of variance of the population R square is significant at $p < .0001$. In other words, the probability that the high percentage of FSI variation explained by the two economic indicators could have occurred by chance is less than one in ten-thousand.

The results from multiple regression analysis of the Country Composite Financial Success Index also indicate that the level of financial success of the global companies

strongly relates to the price increase in the parent country. The higher degree of relationship between the FSI and the domestic indicator than the degree of relationship between the FSI and the export indicator suggests that, in general, the economic conditions in the parent country of the global companies play more important role in the financial success of business operations. In addition, the level of financial success also relates to the price increase in exports.

This conclusion is supported as it is illustrated by the results from the multiple regression analysis of the beverage and tobacco, and telecommunication industries. In those two industries, the level of financial success strongly relates to the Domestic Absorption Index, Consumer Price Index and Employment Index. It is apparent that the telecommunication industry depends highly on domestic revenues although this industry is global in terms of business operations. This evidence suggests that the level of financial success in a number of industries might depend on domestic operations more than on international operations although they are global companies. On the other hand, for some industries, it could have occurred because the higher costs of conducting international business contributes to the lower rate of return. Further investigation on these issues is recommended.

In comparison, the Financial Success Index (FSI) in a particular industry relates to a particular set of economic indicators due to the nature of the industry. In automobile industry, the GNP per Capita accounts for 69% of the variation od the Financial Success Index. However, the negative sign of the coefficient indicates a result quite contradict to the normal understanding. In the recent years, automobile companies in US and Sweden had low rate of return. The Japanese automobile companies also had a low rate of return as it normally did across industries. These three countries are in the group of high per capita income countries. In the same period, the automobile industry in France, Italy and Spain had a much higher rate of return. Further in-depth investigation on factors contributing to this outcome is recommended. More discussion on this issue will be undertaken in Chapter 5.

In telecommunication industry, Employment Index and Domestic Absorption Index account for more than 92% of the variation of the FSI. It may be interpreted that the financial success in telecommunication industry relates to the price change in domestic consumption and the degree of change in employment. In the latter case, the more people in the country engage in employment, the higher the financial success of the industry can be achieved.

In the case of beverage and tobacco industries, the domestic absorption index and the foreign trade values

account for more than 80% of the variation of the Financial Success Index (FSI). It may be interpreted that both the domestic price increase and the export value increase play important role in the financial success of these two industries.

In health and personal cares industry, the variables of Foreign Trade of Manufactures and the Balance of Payments in Factor service account for about 84% of the variation of the FSI. Both variables are in the category of foreign trade. It may be further interpreted that the financial success in health and personal care industry relates to foreign trade and income from abroad. However, the negative sign of the coefficient of the Foreign Trade of Manufactures suggests that countries which concentrate on heavy industry (see the definition of Manufactures in Chapter 1) have a lower rate of return. Further investigation on this issue is recommended.

As a product of the multiple regression analysis in this section, five equations were formulated to predict the Financial Success Indices of the four selected industries and the country composite. However, financial success in business operations depends on many other variables. Those formulas, which contain only economic indicators of the paren countries, are not intended to be used solely for the decision making in international business operations. They may be used to provide initial information on the FSI in

relation to the economic conditions of the parent country. The main purpose to employ multiple regression analysis in this study is to demonstrate the relationship of the newly developed construct of Financial Success Index (FSI) to economic indicators in the parent country.

In sum, all results of multiple regression analysis from Table 4.19 to Table 4.24 demonstrate the validity of the construct in relation to the economic indicators in the parent country of the companies ranked in the Global 1000. The results also demonstrate a practical application of the Financial Success Index (FSI) in measuring success in business operations quantitatively. The FSI was developed to be used as a measure of success in international as well as domestic business operations. May it be reminded that the FSI was developed from a statistical integration of three financial ratios based on the modified DuPont Model of financial analysis, i.e., Return on Investment, Return on Equity, and Net Profit Margin. The empirical data from 598 companies ranked in the Global 1000 between 1987-1990 were used to develop the FSI. The implication and application of the findings for the development of a theory and model of international business operations will be further discussed in Chapter 5.

Chapter 5

SUMMARY, DISCUSSION, AND CONCLUSIONS

A Summary of the Present Study

The present study attempts to develop a conceptual framework to deal systematically with the complexity in international business operations. To achieve this, the research comprises four tasks.

First, prior research findings related to international business operations were integrated by means of matrix analysis and meta-analysis. Matrices of relationships among variables in international business were obtained. These results were used as building blocks for constructing a primal model.

Second, a new success measure was developed to assess the level of accomplishment in business operations. Based on the DuPont Model of Financial Analysis, three profit-related financial ratios were integrated by means of factor analysis, using 598 sets of empirical data computed for the global companies ranked in the Business Week's Global 1000 between 1987-1990. The new success measure is termed the "Financial Success Index" or FSI. A formula for computing the FSI was also obtained.

Third, the FSI was employed to measure and compare the levels of business success of the global companies in

24 countries (country composites), and across four selected industry groups, i.e., automobile, beverages & tobacco, health & personal care, and telecommunications. About 4,000 sets of empirical data were computed for the global companies ranked in the Business Week's Global 1000 between 1987-1990. Presented along with the market shares and sales trends, the FSI's trends (between 1987-1990) show the variations of the global companies' success levels. These results show the versatility and applicability of the FSI to be used as a business success measure.

Fourth, the variations of the country composite FSI's and the four selected industry FSI's of the global companies were employed to test a hypothesis, derived from the model proposed earlier in this study, that the level of a global company's financial success in business operations is linearly related to a variety of measures of the economic conditions in its parent country. Results of multiple regression analysis support the hypothesis, enabling prediction of the FSI as well as analysis of the differential importance of the economic measures. They also provide evidence to prove the construct validity of the FSI.

Finally, all results and findings were integrated to obtain the final model and theory of international business operations. Recommendations for further study and business application were provided.

Discussions of the Results and Findings

For a continuity of presentation, discussion of the results and findings will commence with the newly developed business success measure, the Financial Success Index (FSI). Discussion will then be undertaken on the results and findings from measuring and comparing the global companies' country composite FSI in 24 countries, and across four selected industry groups. The discussion will proceed to the results of testing the hypothesis that the level of a global company's FSI is linearly related to a variety of measures of the economic conditions in its parent country. Following the proof that the FSI can be used as a dependent variable, the discussion will be focused on variables found in the matrices of relationships among variables in international business operations. Then all results will be integrated to develop a model and formulate a theory of international business operations.

The Financial Success Index

The Financial Success Index (FSI) was developed from a statistical integration of three financial ratios, derived from the modified DuPont Model of financial analysis, i.e., Return on Investment, Return on Equity, and Net Profit Margin. Empirical evidence, resulting from an analysis of 598 cases, shows that in measuring financial success

integratively, the most important ratio (i.e., the one with the greatest weight) is return on investment. The next most important ratio is return on equity. Although net profit margin is the least important ratio, it is shown to be necessary to include it in measuring overall financial success. However, some Western business practitioners might argue for the exclusion of net profit margin. In practice, assigning the weights to assess profitability is arbitrary. A hired chief executive officer in a company based in the U.S.A. might be more concerned with return on equity, while a president of a global company based in Hong Kong or Singapore might focus more on net profit margin. This business practice issue may be due to cultural differences. Besides, it may vary from industry to industry. Further study is recommended to find cultural and industry specificity in assigning weights to profit-related ratios.

In applying the FSI to measure and compare global companies' financial success, results show that the Financial Success Index is versatile and applicable when used as a quantitative business success measure. The FSI can be used for international as well as domestic business operations. This practical application is useful for business practitioners in setting business objectives and assessing the level of achievement in business operations and management. The FSI trend can be used to forecast a

global company's financial success level under specific conditions of business operations.

On the other hand, researchers can use the Financial Success Index as a dependent variable to conduct business research. An example is illustrated in the present study. The FSI was employed to test a hypothesis derived from the model developed in this study. In sum, all results of multiple regression analysis demonstrate that the FSI can be used as a dependent variable.

The Financial Success of the Global Companies as Measured Among their Parent Countries by Using the Financial Success Index

In applying the Financial Success Index to measure and compare the global companies in 24 countries, results of country composite analysis show that, in general, Japanese global companies had the lowest FSI (about 4%). The results are also consistent across four selected industry groups. These results may be explained by the low interest rate, low capital cost, and long-term loans in Japan as compared to other countries (see Balance of Payments Year Book, 1991). Thus, the high-quick return was not required for Japanese global companies as it was in the U.S.A. and the U.K. This explanation may also hold, in part, for German global companies that had lower-than-average country composite FSI.

However, the results show that Japanese global companies consistently increased their market shares. The expansion required them to reinvest, hence lowered the return rate. Moreover, business in Japan was drastically competitive. About one third of the global companies, ranked in the Business Week's Global 1000 between 1987-1990, based in Japan where the 1990 population was about 120 millions. In automobile industry, for instance, there were seven Japanese global companies ranked in the Global 1000. There were only three companies in the U.S.A. (population about 250 millions) and four companies in Germany (population about 75 millions). To be competitive (or to survive) in Japan may require them to compete in quality and pricing. In other words, they have to invest more and sell for less than the global companies in other countries.

The U.S.A. was the world leader in terms of sales though the trends show that the U.S. companies had been losing their market shares to the Japanese. The country composite FSI trend of the U.S. global companies was stable at the average rate about 9%. The U.S. global companies in beverage and tobacco industries led the world in terms of sales, and the FSI was much higher than average. The U.S.A. also led the world in telecommunications industry both in terms of market shares and the FSI. However, the U.S. automobile industry had a poor FSI trend, the FSI became

negative in 1990. The U.S. automobile companies could not turn the situation around though the downward trend started many years ago. Obviously, they lost not only the market share, but also the profit as shown by the FSI trend between 1987-1990.

The FSI in French automobile industry led the group. This might be due to the protectionism which allowed only 3% for imported cars. In this case, a government intervention may be considered as a factor enhancing business success. France, as well as Japan, has an international policy which includes industry and business plans.

The analysis of global market shares shows that global companies in the U.S.A. and Japan accounted for about 70% of the world composite sales. Global companies in the next four leading countries, i.e., Britain, Germany, Netherlands and France, accounted for 20% of the composite sales, and global companies in the rest 18 countries accounted for only 10% of the market share.

The above percentages may be explained by the country competitive advantages (see Porter, 1990). The U.S.A. has a huge domestic market, advanced technology, and a system that encourages business ventures. Thus, the U.S.A. is suitable for a global company to base its international business operations. Japan has a cluster of companies called *keiretsu*, a network of business groups which support each

other. This network facilitates a global Japanese company's efforts to expand its international business operations (see Yoshino & Lifton, 1986). Germany, on the other hand, has a breadth of industries, advanced technology, and an innovation-driven economy. German companies are usually competitive on the basis of differentiation instead of cost (see Porter, 1990, p. 715).

Among the six leading countries, the global companies in Netherlands and Britain had the highest FSI's. The Netherlands and Britain have had long experience in international trade. Experience in international business may be a part of the explanation for their high FSI's.

Interestingly, in comparing the FSI's among countries, the gold and diamond industry in South Africa had the highest Financial Success Index, about 30-40% between 1987-1990. Some global companies in Hong Kong also had high FSI's, for instance, the telecommunications industry in Hong Kong had an FSI about 33-37% between 1987 and 1990.

The results previously discussed support that the FSI is a sensitive instrument that can detect variations, and trends of business success. It can be used collectively as presented in this study, or individually for any company. Further studies are recommended to investigate cultural, psychological, and other factors possibly underlying the patterns of Financial Success Index presented in this study.

The Relationships Between the Financial Success Index and Economic Indicators in the Parent Country of a Global Company

The Financial Success Index (FSI) was employed as a dependent variable to test a hypothesis that a global company's financial success is linearly related to a set of measures of the economic conditions in its parent country. Results from multiple regression analysis support the hypothesis. The combination of economic indicators in the parent country can explain the variations of the country composite FSI and the FSI across four selected industries, ranging from 68% to 92% of the variation.

Interpreting from the two economic indicators in the multiple regression results of the country composite FSI, it is evident that the level of a global company's financial success is delineated by both domestic operations and foreign operations. The standardized weights of the two economic indicators FSI indicate that the domestic price index has twice the weight of the export price index. These results suggest that a global company's financial success may be determined more by domestic conditions than by export conditions. This is true for many cases as supported by multiple regression results of the FSI in selected industry groups. An extreme example is in telecommunications. The two economic indicators that explain the variation of a telecommunications company's FSI are both domestic, although

the operations are international.

The high levels of significance of the relationships between the FSI and economic indicators, and the logical meaning of the relationships demonstrate a construct validity of the FSI. The FSI is valid to be used as a dependent variable, a business success measure for business operations. Further studies on the relationships between the FSI and other independent variables are recommended. To derive hypotheses and to select independent variables for further studies, a model and a theory of international business operations will be presented.

The Matrices of Relationships among Variables in International Business Operations

The matrices resulting from an integration of prior research findings related to international business, show that the independent variables used in the prior empirical studies may be categorized into five dimensions. Based on the entire set of empirical studies utilized and synthesized in this study, the percentage of independent variables used in the five dimensions are: 20% in the parent country dimension, 40% in the host country dimension, 4% in the global dimension, 25% in the multinational enterprise dimension, and 11% in the business operations dimension. Based on the entire set of prior case studies, the percentages of independent variables used in the five

dimensions are: 29.4% in the parent country dimension, 26.5% in the host country dimension, 26.5% in the global dimension, 2.9% in the multinational enterprise dimension, and 14.7% in the business operations dimension. In terms of dependent variables used in the entire set of empirical studies, the percentages are: 87% in the business operations dimension and 13% in the business outcomes dimension. The percentages of dependent variables used in the entire set of prior case studies are: 79% in the business operations dimension and 21% in the business outcomes dimension.

The distribution of the variables used in prior studies in all dimensions supports the validity of the domain categorization of the variables into those dimensions.

A Model of International Business Operations

To display the dimensions of variables in international business operations, a Venn diagram can be used to visualize relationships among the dimensions. Based on the definition of international business in Chapter 1, page 20, business transactions are conceived to take place across boundaries of three environments. The three environments can be conceived as three dimensions of variables influencing success in international business operations. They are: the parent country dimension, the host country dimension, and the global dimension, as shown in Figure 5.1.

THE THREE DIMENSIONS OF VARIABLES WHICH INFLUENCE INTERNATIONAL BUSINESS OPERATIONS

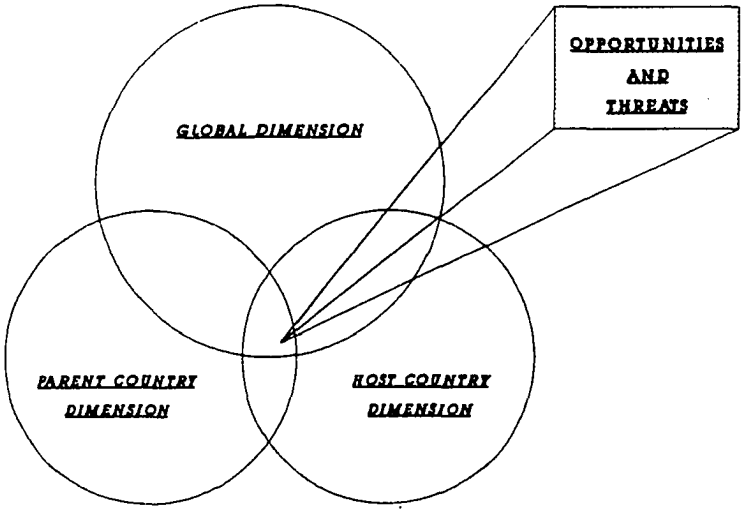


Figure 5.1

The Three Dimensions of Variables which Influence International Business Operations

Figure 5.1 shows the three dimensions of variables which influence international business operations. The intersecting area shows the domain of opportunities and threats in which a multinational enterprise may have its business operations.

By introducing a multinational enterprise into Figure 5.1, a comprehensive picture of the dimensions of all variables in international business operations can be obtained as shown in Figure 5.2.

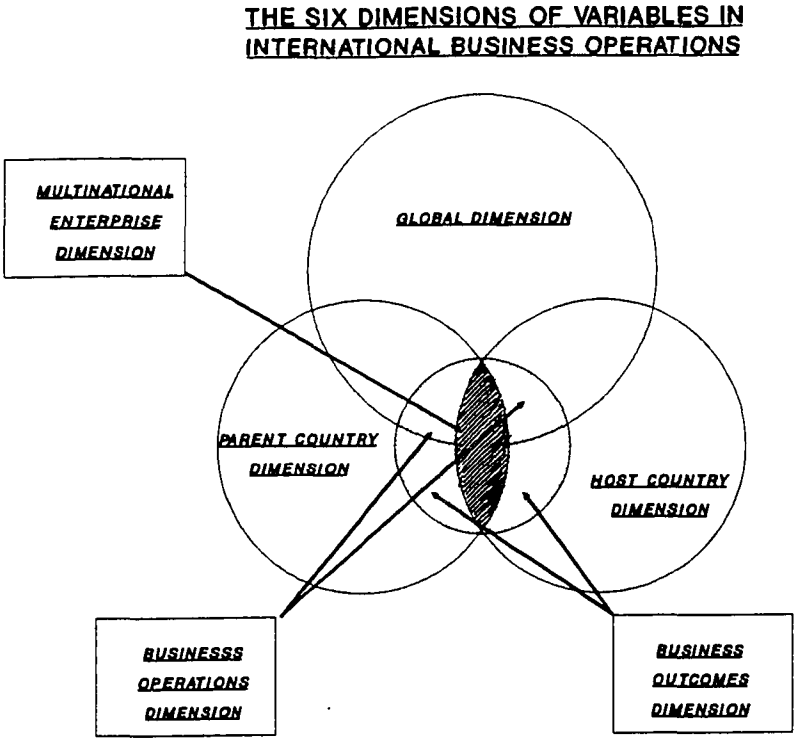


Figure 5.2

The Six Dimensions of Variables and their Relationships in the Model of International Business Operations

Figure 5.2 shows six dimensions of variables in the model of international business operations. They are: 1. parent country dimension, 2. host country dimension, 3. global dimension, 4. multinational enterprise dimension, 5. business operations dimension, and 6. business outcomes dimension. It should be noted that the business operations dimension consists of two sub-domains, i.e., a domain of domestic operations in the parent country and a domain of foreign operations in the host country. Similarly, the

business outcomes dimension consists of two sub-domains, i.e., a domain of domestic outcomes in the parent country and a domain of foreign outcomes from the host country.

In the center of Figure 5.2, a multinational enterprise takes opportunities and risks in international business, thus, it exposes to influences from all variables in the three influencing dimensions shown in Figure 5.1.

The relationships of variables among dimensions are represented by the overlapping of those dimensions in Figure 5.2. An example of the use of this model is to find a beverage company's FSI, a variable in the business outcomes dimension which is related to variables in the host country, parent country, global, multinational enterprise, and business operations dimensions. The relationship in this example can be expressed in a formula shown in Equation 5.1.

Equation No. 5.1
$FSI_{beverage} = f(H,P,G,M,O_p)$

where $FSI_{beverage}$ = Financial Success Index of a beverage company
$f(H,P,G,M,O_p)$ = a function of a group of variables in the host country, parent country, global, multinational enterprise, and business operations dimensions

Equation No. 5.1 shows a formula for a quantitative calculation and qualitative considerations on all critical variables to obtain a specific value of the FSI for a beverage company.

Tables 4.1 to 4.6 in Chapter 4, pages 218-226, provide an initial set of variables and their relationships in every dimension which can be used to fill in the details of the model of international operations. A generic model of international business operations can be built by loading relevant categories of variables from those tables into all dimensions. By the same procedures, a specific model of international business operations for a particular industry can be built by constructing a matrix of relationships among relevant variables as shown in Tables 4.1 to 4.6.

The degree of relationships among variables can be obtained from prior relevant studies or from practical experience in business operations. After obtaining critical variables and their relationships, the model in Figure 5.2 and Equation 5.1 then can be loaded with relevant variables.

In general, the procedure should be started with a goal or a dependent variable in the outcomes dimension. The weights should be assigned to estimate the degree of association between each pair of independent variables and the dependent variable. The final model can serve as a tool, specific to an industry or a global company, to aid planning, marketing a specific product or service, making a decision on an investment or divestment, determining the best mode of entry into a host country, allocating company's resources, estimating sales, and so on.

The Primal Root for Formulating A Theory of International Business Operations: A Concept of the Utility Exchange Among Countries via Multinational Enterprises

Results from the analysis of the top global companies in 24 countries shows that world business transactions were conducted, to a large extent, via multinational enterprises. The combined total sales of the top 1000 global companies in 1990 was 7,211 billions of US dollars. Each company in the top ten group had total sales of more than 100 billion US dollars, which was higher than the GNP's of many countries. Obviously, multinational enterprises played an important role in the world economy. The world business transactions were undertaken via multinational enterprises. They acted as agents of exchange for people in different geographical areas and different political economies.

From a multinational enterprise, a country may expect more than an exchange of goods and services. It may expect, for example, transferring of technology, industrializing the country, increasing employment, developing infrastructure, and access to external resources and markets. In exchange for services, a multinational enterprise definitely expects a return into its system. The return can be in a variety of forms, including monetary rewards. A multinational enterprise may provide services to a country in exchange for, e.g., market entry and expansion, survival and growth, risks and anxiety reduction, solving its internal interest

and power conflicts, and so on.

The above observations led to a concept of exchange among countries via an international enterprise. Exchange is a core concept in many disciplines in social sciences. This concept exists in economics, sociology, politics, psychology, and anthropology. It has also been used in international business study. See, e.g., Buckley & Casson, 1976, 1985; Dunning, 1977, 1980; Rugman, 1980; Toyne, 1989. The differences lie in the unit of analysis in the studies.

In the present study, a system of exchange was developed to explain international business, based on the literature review in Chapter 2, pages 27-151, along with the review of theories of trade and investment in Chapter 1, pages 7-14. Due to the fact that entities that are exchanged can be in a variety of forms which fulfil the expectations and needs of the involving parties, a concept of utility exchange is introduced to accommodate the multifarious forms and aspects of the exchange. The concept of utility was derived from the works of scholars in the area of utility and utilitarianism. See, Alt (1971); Bentham, 1823; Samuelson, 1977; von Newmann & Morgenstern, 1947.

The system of utility exchange is shown in Figure 5.3.

A SYSTEM OF THE UTILITY EXCHANGE IN INTERNATIONAL BUSINESS

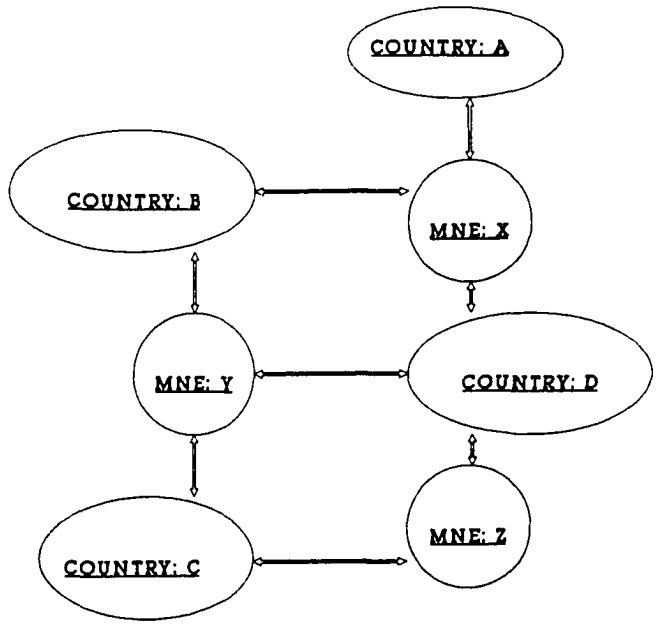


Figure 5.3

A System of the Utility Exchange Among Countries via Multinational Enterprises

Figure 5.3 shows an exchange system among Countries A, B, C, and D via Multinational Enterprises X, Y, and Z. The flow of goods and services among countries may be conceived as a system of the utility exchange facilitated by multinational enterprises. This system was conceived to explain the dynamics of international business, particularly, a multinational enterprise's role as an exchange agent in the global economy. A unit of analysis is confined to a pair of countries, with a multinational enterprise performing the transactions between them, as shown in Figure 5.4.

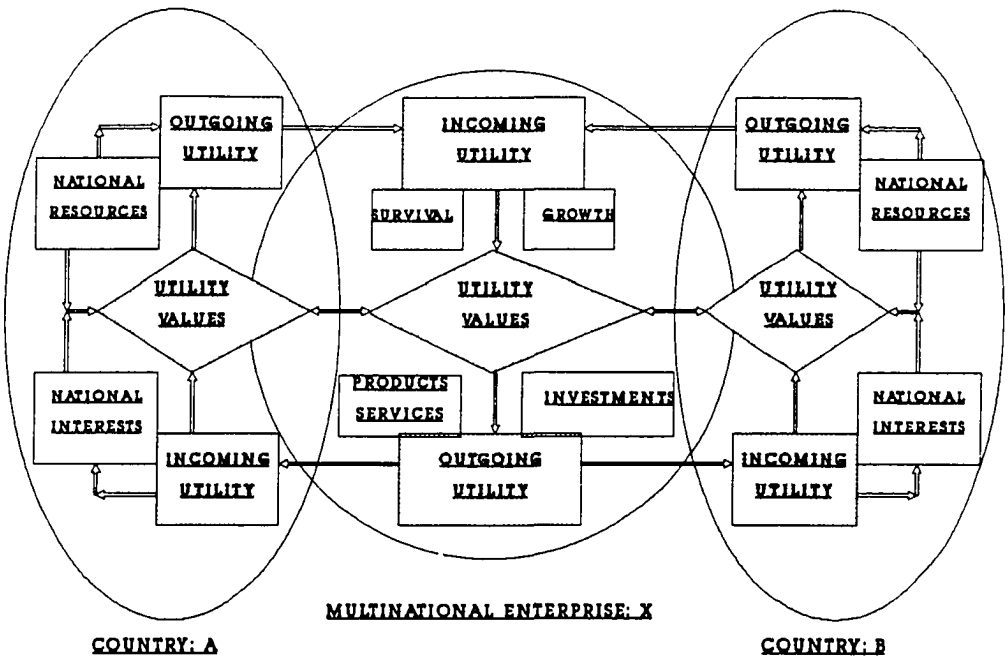


Figure 5.4

A Unit of Analysis in the System of the
Utility Exchange Among Countries
via Multinational Enterprises

Figure 5.4 shows a unit of analysis in the system of the utility exchange between Country A and Country B, with multinational enterprise X performing the transactions between them. This unit of analysis is a part of the system shown in Figure 5.3. In the unit of analysis, two kinds of the utility are designated, i.e., an incoming utility and an outgoing utility. For a country, the outgoing utility is calculated (or evaluated) from what will be consumed, exploited or taken out from its national resources, e.g.,

natural resources, man-power, monetary tokens, environmental pollution, social costs, economic costs, and so on. The incoming utility is calculated (or evaluated) from what will be obtained, ideally, for people in the country, or national interests, e.g., specific products or services, an increase of employment , an improvement of infrastructure, a technological progress, an economic power, and so on.

For a multinational enterprise, an outgoing utility is calculated (or evaluated) from investments to provide a country with specific products or services. The investments include not only monetary items, but also its expertise, technology, resources, man-power, time values, risk and stress undertaking, and so on. A multinational enterprise's incoming utility is calculated (or evaluated) from what will be compensated or rewarded back into the enterprise so that the organization can maintain its survival and promote its growth. As discussed earlier, compensations and rewards can be in many forms, e.g., monetary rewards, risks reduction (see Portfolio Theory, page 10), internal conflict resolution (see Conflict Theory page 14), and so on.

The unit of analysis in Figure 5.4 also shows a process of decision making in relation to the exchange and sources of utility in each party. The directions indicated by arrows represent dynamic flows of information in the decision process of the utility exchange. Decision points

are indicated by the diamond shapes, where the utility values are evaluated quantitatively and qualitatively. The bi-directional arrows between two decision points represent the back-and-forth negotiation process between a multinational enterprise and the counter country.

For a practical application in decision making, Tables 4.1 to 4.6, page 218-226 provide items of related variables which can be appropriately selected to fill in the boxes of the incoming and the outgoing utilities in Figure 5.4. By starting with an evaluation and a calculation of a number of the incoming and the outgoing items, a company may use the system of the utility exchange in international business to propose a business project to a country, with a matched fulfillment to that country's needs and interests. In the real world, for instance, Chakravarty (1989) reported that in exchange for market entry in China, Pepsi offered to export 1 US dollars for every 1 US dollars of imported materials. In 1988, Pepsi won the rights to sell its beverages in India (population about 500 millions), but it had to offer an export-import ratio of 5 to 1. Pepsi also had to promise to take on Indian partners.

On the counterpart, a government officer may use the system of the utility exchange in Figure 5.4 to evaluate business projects, proposed by a number of companies, to select the best matched utility exchange counterpart.

A Theory of the Utility Exchange in International Business Operations

The previously introduced system of the utility exchange in international business led to a formulation of a theory of the utility exchange in international business operations.

Basic Assumptions

1. Countries and firms conduct international business with their own free will in a free trade world, i.e., their needs and expectations are induced and fulfilled by themselves through their interactions.
2. A person or group of persons, in charge of or represent a country or a firm, conduct business for the country's or for the firm's interests.
3. International trade and investment is a process.

Definitions

Utility Exchange is a process for mutually fulfilling a party's and the counterparty's needs and expectations through a flow of goods and services in business transactions in international settings.

A Theory of the Utility Exchange in International Business Operations

International business is a socio-psycho-economic transaction undertaken to fulfill the needs and expectations of two or more parties in the global settings. A multinational enterprise plays a role of the utility exchange agent among countries. A business transaction occurs as a result of the utility exchange, when the value of an incoming utility is equal to or greater than the value of an outgoing utility for each party.

To elaborate the theory for further research and applications, the theory can be stated in seven propositions as follows:

Propositions

1. International business operations are exchange processes undertaken by multinational enterprises to fulfill the needs and expectations of two or more countries, and reciprocal effects are assumed.

2. International business operations occur in world settings, thus, processes and results are influenced by independent variables in the intra-country as well as inter-country environments.

3. The utility exchange serves as a fundamental unit of analysis in international business operations, through which each party's needs and expectations are evaluated.

4. Two perceived utility values of the same entity in the exchange process may not be equal for any two or more parties, due to subjective priorities, importance and time horizons of the party's needs and expectations.

5. A business transaction will occur spontaneously if the perceived value of the incoming utility is equal to or greater than the perceived value of the outgoing utility for each party. Therefore, a sum of the utility values in a system will always be positive, and the sum of the utility values in the world will always increase. This is similar to the concept of entropy in thermodynamics.

6. Success in international business operations is a function of firm's or country's satisfaction on the increment of the perceived value of the incoming utility over the perceived value of the outgoing utility for each party.

7. Ultimately, a steady state of the utility exchange will be reached when the flows of goods and services mutually satisfy party and counterparty.

Implications and Applications for International Business Practice and Research

The model of international business operations proposed a framework of six dimensions of variables for business practitioners and researchers for systematically organizing of data and information related to international business for decision making or for study. They are: (1) parent country dimension, (2) host country dimension, (3) global dimension, (4) multinational enterprise dimension, (5) business operations dimension, and (6) business outcomes dimension. Methods to create a matrix of variable to be used with the model along with a form to present the matrix were developed to be used with the model. These instruments can be applied specifically to a company in an industry to appraise a condition, to plan and to perform its business operations. For research purposes, the model and the matrix of variables can be used as structural guidelines for further research about the relationships among variables in international business operations, and the findings can also be integrated into a broader view by interpreting results in the framework of the model.

The Financial Success Index developed in this study is a tool to be used as a measure of success in international as well as domestic operations. Empirical results show that the FSI is a sensitive instrument that can detect patterns of variations, changes, and trends of business success. The

FSI can be used to forecast a company's financial success level under specific condition of business operations. It can also be used collectively as presented in this study to determine the level of financial success of an industry in a country.

Findings from the analysis of the global companies ranked in the Business Week's Global 1000 between 1987-1990 shows different patterns of success among countries and across selected industries. The findings provide an initial source of information that business practitioners can use to make comparisons and decisions about international business operations. For research purposes, the findings suggest further studies to investigate physical, cultural, and psychological factors underlying patterns of Financial Success Index of global companies in different countries.

The theory of utility exchange in international business operations introduced a concept of the utility exchange to explain the process of international trade and investment which is conducted, to a large extent, through multinational enterprises. In the unit of analysis, the concepts of an incoming utility and an outgoing utility were introduced as tools for the calculation and comparison of utility values in conducting a business project. The proposed theory can be used by a business practitioner to prepare a business proposal for a country, with a

fulfillment matched to that country's needs and interests. A government officer can use the concept of the utility exchange as well, to evaluate business projects proposed by a number of companies, and to select the best matched utility exchange.

Conclusions

A business practitioner who conducts international business operations has to deal with a tremendous amount of data and information, and has to perform a variety of tasks, ranging from planning and decision making to management and adjustment. The high levels of dynamics and uncertainty in international business may produce stress, generate risks, provoke anxiety, and lead to failure. In order to aid business practitioners, as well as to build a foundation for further research, the present study provides instruments, a model and a theory for international business operations, based on the integration of prior research findings related to international business along with the analysis of empirical data. The present study neither claims nor attempts to complete this gigantic task in one volume, but, for a beginning, a foundation was developed for further refinement and applications. It is hoped that the present study will stimulate further theoretical study and practical application, hand in hand.

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APPENDIX A

LIST OF PRIOR STUDIES AND ARTICLES USED FOR THE INTEGRATION OF THE PRESENT STUDY

Ref. No.	Author(s)	Title	Journal/Magazine
1	Geringer, J.M. & Herbert, L.	Measuring Performance of International Joint Ventures	Journal of International Business Studies Vol. 22, Iss. 2, 2nd Quarter, 1991, p. 249-263.
2	Lee, C. & Green, R.T.	Cross Cultural Examination of the Fishbein Behavioral Intentions Model	Journal of International Business Studies Vol. 22, Iss. 2, 2nd Quarter, 1991, p. 289-305.
3	Li, J. & Guisinger, S.	Comparative Business Failures of Foreign-Controlled Firms in the United States	Journal of International Business Studies Vol. 22, Iss. 2, 2nd Quarter, 1991, p. 209-224.
4	Esler, B.	Business Forms: New Directions	Graphic Arts Monthly Vol. 63, Iss. 8, Aug. 1991, p. 54-58.
5	Anonymous	International Syndicated Credits	Financial Market Trends (France) Iss. 49, June 1991, p. 73-78.
6	Khalili, S.	Takeovers: Big Appetites	North American International Business Vol. 4, Iss. 4, May 1991, p. 62-64.
7	Taylor, G.	Deep in the Ports of Texas	North American International Business Vol. 4, Iss. 4, May 1991, p. 45-49.
8	Anonymous	A Chemical Reaction: The New Export Restrictions Have the Business Shaken Up	Chemical Week Vol. 4, No, 7, August 1991, p. 41-43.
9	Graff, D.	The Polyglot State: Mission Accomplished	North American International Business Vol. 4, Iss. 7. August 1991, p. 41-43.
10	Averyt, W. F.	Managing Public Policy Abroad: Foreign Corporate Representation in Washington	The Columbia Journal of World Business Vol. 25, Iss. 3, Fall 1990, p. 32-41.
11	Dodds, L. S.	Japan's Fishing for Small Fry	North American International Business Vol. 4, Iss. 4, May 1991, p. 16-19.
12	Thomas, M.	All Work and No Play?	World Trade Vol. 4, Iss. 4, Jun/Jul. 1991, p. 65-68, 72-73.
13	Landesman, E.	Ultimatum for U.S. Auto Suppliers: Go Global or Go Under	Journal of European Business Vol. 2, Iss. 5, May/Jun. 1991, p. 39-45.

Ref. No.	Author(s)	Title	Journal/Magazine
14	Anonymous	Worldwide Business Optimism Increases but Remains at Low Levels	D&B Reports Vol. 39, Iss. 4, Jul/Aug. 1991, p. 82-83.
15	Ali, A. & Swiercz, P. M.	Firm size and Export Behavior: Lessons from the Midwest	Journal of Small Business Management Vol. 29, Iss. 2, Apr. 1991, p. 71-78.
16	Minta, I. K.	Intellectual Property Rights and Investment Issues in the Uruguay Round	The CTC Reporter Iss. 29, Spring 1990, p. 43-46.
17	Frangini, M.	Telecommunications Policies Will Affect Data Centres' Future	Computing Canada (Canada) Vol. 17, Iss. 11, May 23, 1991, p. 55.
18	McManamy, R.	The Top 400 Contractors: Foreign Work Volume Is No Casualty of War	ENR Vol. 226, Iss. 21, May 27, 1991, p. 72,74.
19	McClelland, S.	Hutchison Bets on Mobile Data	Telecommunications (International Edition) Vol. 25, Iss. 5, May 1991, p. 68.
20	Rossant, J.	Can a Pumped-Up ENI Get into Fighting Trim?	Business Week (Industrial/Tech Edition) Iss. 3215, May 27, 1991, p. 76-77.
21	Griffith, C.	There is more to Online Legal Research than Lexis and Westlaw	Information Today Vol. 8, Iss.5, May 1991, p. 52-53.
22	Kelly, N.	Searching the Online Globe: Best Files for Country Profiles	Database Vol. 14, Iss. 3, June 1991, p. 40-47.
23	Geringer, M.J.	Strategic Determinants of Partner Selection Criteria	Journal of International Business Studies Vol. 22, Iss. 1, 1st Quarter 1991, p. 41-62.
24	Mueller, B.	An Analysis of Information Content in Standardized vs. Specialized Multinational Advertisements	Journal of International Business Studies Vol. 22, Iss. 1, 1st Quarter 1991, p. 23-39.
25	Patel, P. & Pavitt, K.	Large Firms in the Production of the World's Technology: An Important Case of "Non-Globalization"	Journal of International Business Studies Vol. 22, Iss. 1, 1st Quarter 1991, p. 1-21.
26	Horner, S.	Tapping into a Host of Information	Accountancy (UK) Vol. 107, Iss. 1172, Apr. 1991, p. 119-120.

Ref. No.	Author(s)	Title	Journal/Magazine
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APPENDIX B

Selected Economic Indicators of the Twenty Parent Countries of the Companies Ranked in the Business Week's Global 1000 Year 1988 (Base 1987 = 100)

Selected Economic Indicators of the Twenty Parent Countries of the Companies Ranked in the Business Week's Global 1000

Year 1988 (Base 1987 =100)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14
					$Bil.	$Bil.	$Bil.			$1000	$Bil.	$Bil.	$Bil.	$Bil.
AUSTRALIA	109.1	106.6	107.2	103.6	N.A.	N.A.	N.A.	N.A.	N.A.	12.33	44.01	32.78	3.17	13.60
BELGIUM	102.0	102.0	101.2	N.A.	88.95	14.85	70.96	105.5	108.8	14.52	141.61	85.50	33.55	9.33
BRITAIN	106.5	105.8	104.9	102.5	145.08	16.34	118.43	108.4	108.8	12.85	294.37	143.84	103.27	44.10
CANADA	104.1	103.3	104.0	101.6	111.36	31.64	69.57	109.9	102.6	16.94	138.27	115.77	9.21	15.39
DENMARK	104.2	104.9	104.6	100.7	27.82	9.37	17.83	105.7	103	18.54	40.42	27.54	3.59	10.77
FINLAND	106.9	105.9	105.1	97.4	21.64	3.79	17.48	112.1	108.3	18.57	27.82	21.83	2.02	6.37
FRANCE	103.0	103.0	102.7	98.1	161.7	35.25	123.11	111.1	106	16.20	248.02	160.64	31.99	25.37
GERMANY	101.5	101.9	101.3	99.9	322.56	28.63	289.78	102.9	103.4	18.46	395.09	308.19	38.28	58.53
HONG KONG	109.0	110.2	107.4	102.9	63.16	5.04	57.84	108.6	108.4	10.32	53.17	45.84	1.41	N.A.
ITALY	106.1	105.9	105.0	99.8	128.53	11.95	114.48	105.2	107.9	13.35	170.56	128.05	11.94	34.72
JAPAN	100.6	100.4	100.7	101.5	264.77	5.78	258.35	110.6	108.2	20.96	371.55	259.77	76.75	96.73
NETHERLANDS	101.6	101.1	100.7	100.5	103.21	29.33	65.18	104.5	103.9	14.51	136.83	98.41	16.19	16.08
NEW ZEALAND	247.0	235.2	106.4	90.1	8.79	6.48	2.19	114	110.1	10.19	12.12	8.79	0.77	2.84
NORWAY	103.4	105.2	106.7	93.5	22.5	5.73	8.56	101.3	109.5	19.55	36.10	23.02	3.35	13.27
SINGAPORE	104.2	104.7	101.5	117.3	39.21	5.19	29.12	107.6	107.7	9.09	51.66	37.99	4.43	17.07
SPAIN	105.5	105.1	104.8	100.8	40.46	9.3	29.35	116.4	107.5	7.75	67.09	39.65	2.73	37.07
SWEDEN	106.6	106.2	105.8	98.9	49.87	6.55	42.25	109.0	107.8	19.30	62.20	49.33	3.47	8.49
SWITZERLAND	136.2	127.7	101.9	99.8	50.63	3.72	46.85	107.3	105.3	27.37	98.16	62.84	21.10	24.20
SOUTH AFRICA	115.1	114.5	112.8	101.3	21.55	3.72	17.16	110.0	108.5	2.28	25.73	22.43	1.50	.78
US	103.3	103.3	104.0	101.4	315.31	62.06	245.01	108.7	107.8	19.82	533.11	320.34	121.02	36.75

Source: World Tables, World Bank Publication 1991

Note: Q1 = Overall GDP Index; Q2 = Domestic Absorption Index; Q3 = Consumer Price Index; Q4 = Employment Index; Q5 = Values of Export; Q6 = Export of non-fuel Products; Q7 = Export of Manufactures; Q8 = Export Price Index; Q9 = Import Price Index; Q10 = GNP Per Capita; Balance of Payments: Q11 = Export of Goods & Services, Q12 = Merchandise, Q13 = Factor Services; and Q14 = International Reserves. $Bil. = Billions of US Dollars.

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Psy Chi, The Honor Society of Psychology, USA.
Certificate of Excellence, USIU, USA.
Certificate of Recognition of Future International Leaders, USA.
Who's Who Among International Students in American Universities , USA.
Most Noble Order of The Crown of Thai, Second Order, Thailand.
King's Silver Jubilee "Good Research Award", Thailand.
King Phumipol's Award "Excellent Essays of the Year 1985", Thailand.
King's Silver Jubilee "Distinguished Research Award", Thailand.

MEMBER OF LEARNED SOCIETIES

The British Psychological Society, UK.
The American Psychological Association, USA.
The Academy of International Business, USA.
The Psy Chi National Honor Society, USA.
The California Psychological Association, USA.

BUSINESS AND MANAGEMENT EXPERIENCES IN USA

1990-1991 **Director of International Marketing,** Air Sculptures, San Diego, CA.
1987-1989 **Assistant Director of International Sales,** Robert Keith, San Diego, CA.

ACADEMIC EXPERIENCES IN USA

Feb. 1991 presented a paper on **The Implications and Application of the Theory and Model of the Psychological Contract in Organizations** at the Annual Conference of the California Psychological Association, San Diego, CA.

June 1990 presented a research paper on **Can Biodata Predict Performance?** in the Fourteenth Annual Conference, International Personnel Management Association, San Diego, CA.

Mar. 1990 presented a paper on **A Theory and Model of the Psychological Contract in Organizations** at the Best in the West Conference, San Francisco, CA.

Nov. 1989 presented a paper on **The Psychological Contract** at the Organizational Development Network National Conference, San Diego, CA.

1988-1989 conducted research on **Using Biodata as a Predictor of Job Performance,** a team research project for US Navy.

1987-1988 conducted **counseling and guidance** for international students at United States International University.

PROFESSIONAL EXPERIENCES IN ENGLAND

1986-1987 produced and broadcasted **Science & Technology Programme** at the **BBC**, World Service, London.

PROFESSIONAL EXPERIENCES IN THAILAND

LECTURESHIP

1981-1986 **Assistant Professor of Psychology, Chulalongkorn University** lectured on General Psychology, Biological Bases of Behaviors, Industrial Psychology, Human Relations.

1976-1980 **Lecturer, Chulalongkorn University** lectured on Philosophy of Science, Scientific Method, Science and Technology, Science and Society.

TRAINING AND CONSULTING

1981-1986 conducted training and provided consultation for public and business sectors on the topics of **Organizational Behaviors, Management Psychology, Human Relations, Organizational Stress, Leadership, Motivation, and Transactional Analysis.**

COUNSELING AND GUIDANCE

1981-1986 conducted counseling and guidance for students and business clients who suffered from family problems and personal growth by employing **Buddhist Psychology.**

ADMINISTRATIVE EXPERIENCES

1985-1986 **Editor** of The Science Monograph
1985-1986 **Chairman** of the Division of Social Psychology
1984-1986 **Chairman** of the Committee of Science by Distant Media
1983-1986 **Head** of Psychological Laboratory Instrumentation Center

PUBLICATION

BOOKS

Author, **What is Science?**, sponsored by ESSO, Bangkok: M.S. Press, 1975.
Editor, **Science, Technology and Society**, C.U. Press, 1981.
Author, **With Tenderness**, Bangkok: Sri Anun Press, Jan. 1984.
Author, **The Secret of Happiness**, Bangkok: C.U. Press, Jan. 1985.
Author, **Commitment to Love**, Bangkok: C.U. Press, Feb. 1985.
Author, **Psychology Applied to Work**, Bangkok: C.U.Press, Aug.1985.
Author, **Motivation in Daily Life**, Bangkok: C.U. Press, Dec. 1985.
Author, **Success in Learning**, Bangkok: C.U. Press, Jan. 1986.
Author, **Leadership**, Bangkok: C.U. Press, Feb. 1986.
Author, **Human Development**, Bangkok: C.U. Press, Mar. 1986.
Author, **Language and Mind**, Bangkok: C.U. Press, June 1986.
Author, **Emotion and Feeling Control**, Bangkok: C.U.Press,Jul 1986.
Author, **Contingency in Real Life**, Bangkok: C.U.Press, Aug. 1986.
Author, **Man and Society**, Bangkok: C.U. Press, Sep. 1986.

ARTICLES

1975-1986 numerous articles published in journals and magazines.

RESEARCH

1985-1986 **Effects of Violent TV Programs on Youth's Behaviors**, head Researcher, a survey research funded by an entertainment business company.
1984-1985 **Changing Attitude towards Energy Conservation**, co-researcher, University Research Fund.
1979-1980 **Effective Science Program for Non-science Students**, co-researcher, University Academic Affair Research Fund.

DISSERTATION AND THESIS

1992 Intenational Business Operations and Management, University Microfilms International, Ann Arbor, MI, USA.
1990 **A Theory and Model of the Psychological Contract in Organizations**, University Microfilms International, Ann Arbor, MI, USA.
1987 **Ambiguity of Stimuli and Group Influence in Computer Simulation Condition**, Unpublished Thesis, LSE, UK.
1984 **A Development of Heavy Water Production Process by Isotopic Exchange Using Hydrogen Sulfide**, Unpublished Thesis, CU, Thailand.
1981 **Effects of Modifier Positions upon Perception and Short-Term Memory**, Unpublished Thesis, CU, Thailand.

RADIO PROGRAMS

1986-1987 **Science and Technology**, BBC World Services, London.
1977-1986 **Quality of Life and Work**, C.U.F.M. Station, Bangkok.
1984-1985 **Life-span Adjustment**, M.M.A.T. Station, Bangkok.
1981-1983 **Science for Everyone**, C.U.F.M. Station, Bangkok.