

**The Effect of Host Country Factors on the  
Internationalization of the U.S. Reinsurance Industry**

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*Acknowledgements:*

*The Katie School of Insurance Research Grant Program funded this project. The findings reported and the views expressed in this research are those of the author and do not necessarily reflect the position of Katie Insurance School.*

*The author likes to thank Dr. George Flanigan for his comments on an earlier draft of this paper. I would also like to thank Mr. Chris Anderson, and Mr. Dhana Widjajakarna for the help offered by them during the data collection phase of this study.*

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## **Executive Summary:**

The last two decades have been characterized by growing markets for insurance services worldwide. It has been estimated that the share of world Gross Domestic Product (GDP) represented by insurance premiums doubled between the years 1984 and 1993. Needless to say, this increase has benefited the U.S. reinsurance industry significantly. U.S. firms' reinsurance premium receipts from overseas countries increased 307% during the years 1987 to 1999.

Despite this quantum increase in U.S. reinsurance exports, there has been no study attempting to empirically test the various host country factors that facilitate this growth. This study tests for the relationship between various host country characteristics and the U.S. reinsurance industry export performance. When compared to earlier studies on this topic, this study is unique in many ways. First, this study analyzes the factors influencing demand for reinsurance in overseas markets. Second, it looks at U.S. exports rather than the aggregate market of the host country. Finally, it considers variables such as cultural distance, bilateral trade, and the extent of overseas operations by host country firms, variables which have not been analyzed in the past.

Using data from the U.S. Department of Commerce, World Bank, and IMF for the years 1987 to 1998, this study analyzes the effect of host country factors on U.S. reinsurance receipts. Regression models were used for data analysis. The influence between host country factors and reinsurance receipts were analyzed in four groups. The findings are summarized below:

- Market Attractiveness: U.S. reinsurance firms have significant operations in countries with attractive markets. We defined market attractiveness to be represented by Gross Domestic Product and Per Capita Income.
- Competitive Markets: U.S. reinsurance firms operated in countries which have significant bilateral trade with the U.S. and wherein the local firms have extensive overseas operations.
- Socio-Cultural Variables: U.S. reinsurance firms operated in countries with diverse cultures, indicating that cultural barriers do not seem to hold back operations of U.S. firms. However, U.S. reinsurance firms tended to avoid countries with a civil law (as opposed to common law) system.
- Insurance Industry Variables: U.S. reinsurance firms' operations are not affected by the price of insurance or the degree of age dependency in the host country. These variables have been regarded as critical in insurance literature.

This study offers the following implications for reinsurance firms planning to enter new overseas markets.

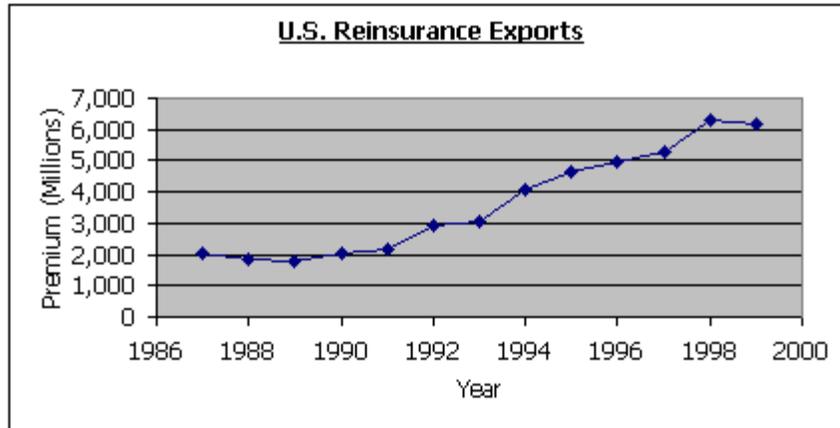
- ü Reinsurance firms are better off seeking countries with large markets and where the population is endowed with high purchasing power.
- ü Reinsurance firms need to set up operations in countries where the U.S. has an established and ongoing trade relationship.
- ü Reinsurance firms need to respond to competitors active outside their home market by setting up operations in their home country.
- ü Reinsurance firms new to international operations may want to avoid markets with civil law systems.
- ü Cultural barriers do not seem to handicap U.S. firms when setting up reinsurance operations.
- ü Age dependency and price of insurance in the host country seem to have marginal to no impact on U.S. firms' reinsurance operations.

# **The Effect of Host Country Factors on the Internationalization of the U.S. Reinsurance Industry**

*Abstract: U.S. firms' reinsurance premium receipts from overseas countries increased 307% during the years 1987 to 1999. It is important to understand to which countries this rapid increase in exports of reinsurance services is taking place. Using the period 1987 to 1998, this study found that U.S. reinsurance exports take place to countries with large markets, with a higher per capita income, wherein there exists bilateral trade, and where local firms operate internationally. The price of insurance, age dependency ratio and cultural distance were found not to have significant influence on U.S. reinsurance operations.*

## **I. Introduction**

The market for insurance services has been growing rapidly worldwide. It has been estimated that the share of the world's Gross Domestic Product represented by insurance premiums doubled between the years 1984 and 1993 and has been growing at a rate of 10% annually since the 1950s (Browne, Chung and Frees, 2000). Similarly, exports of goods and services worldwide, which was at \$3423 billion in 1990, has increased to \$5587 billion in 1999, according to the International Monetary Fund. It is expected that this trend in internationalization will continue to grow in coming years, due to recent multilateral treaties [General Agreement on Trade in Services – GATS – and the Agreement on Trade-Related Aspects of Intellectual Property Rights – TRIPS], which provide a framework of legally enforceable rules covering trade and investment of services and intellectual property.



Needless to say, these trends have benefited the U.S. reinsurance industry significantly. U.S. firms' reinsurance premium receipts from overseas countries increased 307% during the years 1987 to 1999. According to the U.S. Department of Commerce, premium receipts were \$2009 million in 1987. This figure increased to \$6181 million in 1999. A similar pattern of growth has been reflected in the growth of the insurance industry worldwide. Insurance firms gain significant financial and operational benefits through international operations. For instance, international operations provide opportunities for insurance companies to spread risk more effectively, increase benefits through economies of scale and scope, and also be able to offer services to their existing business customers who operate worldwide.

The topic of globalization and its impact on the insurance industry has received attention from other researchers and is reviewed in detail in the next section. This study differs from related studies on this topic in three important ways. First, the author could locate no study on the factors influencing the demand for reinsurance services in overseas markets. As early as 1983, Louberge stressed the need for more studies on reinsurance. Even though many studies

have appeared in recent years, none of them have looked at international operations of reinsurance firms. Hence, this study will be unique due to its incorporation of the demand for reinsurance services in its models. Second, previous research has focused on each country's market potential for insurance services. This study focuses on U.S. exports to host countries. While previous studies looked at each country's market potential, this study looks at the factors influencing the demand for U.S. reinsurance services in host countries. Finally, empirical findings of various studies in the international business literature have identified bilateral trade between host and home country, the degree of difference between the host country's culture and the home culture of the firm, and the degree of host country firm's internationalization to be important factors influencing the extent of trade between countries (Grosse and Trevino, 1996). The author's review of the literature has shown that these variables have been ignored in past studies on the insurance industry. In testing the relationships, this study will incorporate these three variables as well as five related variables found in previous studies.

This study seeks to contribute to the insurance literature by asking the empirical question, *"What factors influence the extent of U.S. reinsurance exports to host countries?"*. A twelve-year time period (1987 to 1998) is used to study the factors influencing the demand for U.S. insurance services. In comparison, Browne et al. (2000) used a seven-year period. This paper consists of five sections, inclusive of this introductory section. In the second, previous literature in the topic is reviewed. In section three, the theoretical basis of this paper is explained and hypotheses are developed. Section four explains the research methodology used for testing these hypotheses and operationalization of measures. The final section presents the results of this study and concludes with implications for theory and practice.

## II. Literature Review

For this study, an extensive review of the literature on international aspects of the insurance industry as well as relevant international business theories was conducted. As noted earlier, no study was found on the international aspects of the reinsurance industry. However, four streams of literature were identified related to the insurance industry. The first focused on international underwriting cycles in the insurance industry (Cummins and Outreville, 1978; Lamm-Tennant and Weiss, 1997). The second stream of research, which was largely qualitative, focused on the experience of the Dutch insurance industry in internationalizing operations (Eppink, 1987; Eppink and van Rhijin, 1988; Eppink and van Rhijin, 1989). The third deals with an international perspective on insurance operations. The studies in this stream look at export credit insurance (Funatsu, 1986), international reinsurance operations (Louberge, 1983), and the various politics of rate discrimination in overseas countries (de Wit, 1986). The final stream of research focuses on demand, income, and barriers to internationalization (Beenstock, Dickinson and Khajuria, 1988; Schroath and Korth, 1989; Browne and Kim, 1993; Browne, Chung and Frees, 2000). This fourth stream of research is the one most relevant to this study and will be reviewed in detail in the following two paragraphs.

One of the first studies on this topic was by Beenstock, Dickinson, and Khajuria (1988). They analyzed the relationship between property-liability insurance premiums and income across twelve countries. This study used data from the Swiss Reinsurance Company (published in *Sigma*) during the years 1970 to 1981. They found that the marginal propensity to insure (the proportion of an increase in income spent on insurance) was higher than the average propensity to insure. They also reported that the premiums across these countries tend to vary directly with

the real rates of interest. Using a questionnaire, Schroath and Korth (1989) surveyed 67 U.S. insurance companies involved in international operations. They reported that the abundance of opportunities for business growth in the U.S. and lack of knowledge of foreign markets were the major deterrents to foreign market entry. Managers also claimed that culture, language, regulatory knowledge, foreign exchange risks, and lack of skilled manpower were barriers to setting up international operations.

Two more studies were conducted by Browne in collaboration with others in this stream of research. Browne and Kim (1993) looked at the factors that led to variations in the demand for life insurance across countries during the years 1980 and 1987 using data published by the American Council of Life Insurance in the *Life Insurance Fact Book*. They identified dependency ratio, national income, government spending on social security, inflation, the price of insurance, and whether Islam is the predominant religion in a country to be factors influencing demand. More recently, Browne et al. (2000) analyzed the reasons for the variation in property-liability insurance consumption across countries belonging to the OECD (Organisation for Economic Co-operation & Development). Using motor vehicle and liability insurance data published by the OECD in the *Insurance Industry Yearbook*, they analyzed for the factors explaining variation during the time period 1987 through 1993. The study's results indicated that income level in a nation, wealth of a nation, percentage of a country's insurance market controlled by foreign firms, and type of legal system to be predictors of variations in insurance consumption.

Based on a review of the above streams of literature, the following conclusions can be made: The demand for insurance services in overseas markets is influenced by income levels in

the country, age dependency, interest rates, income, inflation, legal system, religion, and the extent to which foreign firms control the local market. Barriers to internationalizing include lack of knowledge of culture and language, as well as lack of knowledge of regulations and growth opportunities available locally. It should be noted that all of the above studies focused on liability or motor vehicle insurance, ignoring the reinsurance segment of the business. The following section will incorporate the findings relevant to reinsurance in the development of hypotheses.

### **III. Theoretical Background and Development of Hypotheses**

Various theories have been developed in the international business literature to explain the phenomena of international trade and overseas operations by companies. Classical trade theories (e.g. Theory of Absolute Advantage, Theory of Comparative Advantage, etc.) cannot be used in explaining foreign trade in insurance services, mainly because they assume immobility of production factors. However, three theories [Dunning's "eclectic" theory (1980), Linder's "country similarity" theory (1961), and Graham's "exchange of threat" theory] model and provide some useful insights into factors that could influence direction of trade in the insurance industry. These theories are reviewed briefly below.

Dunning's "eclectic" theory combines the elements of ownership, internalization, and location advantages to form a unified theory. This theory helps us recognize that companies seek locations that best allow them to exploit or enhance their ownership-specific advantages. According to the "eclectic" theory, firms go international when ownership advantages are exclusive to the home firm but the factor endowments of the host country favor local operations, and firms will benefit more by internalizing those advantages. The usage of Dunning's theory

fully for this study is constrained by the fact that “Ownership” or “Internalization” advantages and other firm-specific variables cannot be used, as country is the unit of analysis in this study, while the firm is the unit of analysis in Dunning’s theory. Despite this limitation, host country endowments that make it attractive to the host country firms include market size and income of individuals in the country, among other factors.

One other relevant theory is Graham's (1978) "exchange of threat" model, which explains the competitive motivations of a firm to set up international operations. Graham proposed that, in response to invasion of home markets, firms would retaliate by investing in a foreign firm's home market, thus exchanging threats. Linder (1961) postulated that trade in goods and services is determined not by a cost differential (as traditional trade theories predict), but by the similarity in demand across countries. With respect to the flow of insurance trade, Linder's theory implies that the largest extent would be between countries with similar cultures, legal systems, levels of economic development, income levels, and demand patterns. While both these theories imply that large foreign operations would be between similar countries, the motive in Linder's and Dunning's theories is demand-pull, but in Graham's theory, it is a competitive response. Graham's model implies that insurance operations would be directed towards those countries which have large trade relationships and overseas insurance operations.

None of the theories reviewed necessarily incorporate the insurance industry-specific sector variables in their discussion of the host country. Hence, in order to capture factors unique to the insurance trade, we felt it would be necessary to incorporate the many findings reported in the literature review section of this paper. In brief, earlier models of insurance view life insurance as a means to reduce uncertainty in the household’s income stream. Other things

remaining equal, one may assume this is true of any country in terms of insurance demand (Browne and Kim, 1993). Hence two variables from earlier studies (e.g., dependency ratio and price of insurance) in the host country will be studied as insurance industry-specific variables.

In conclusion, based on the above review, one may propose that four groups of variables affect the direction of trade for the U.S. reinsurance industry. These variable groups are: Attractiveness of the Host Nation (based on Dunning); Competitive Conditions in the Host Country Environment (based on Graham); Similarity in the Host Country Socio-Cultural Environment (based on Linder); and Insurance Industry-Specific Variables (based on the insurance literature). For each of these four groups, we attempted to identify what we felt were the two variables representative of the thrust of the theory. Even though the decision to limit the number of variables to two was subjective, it was felt to be the best option in the interest of parsimony. Each of the four groups and corresponding hypothesis relating the independent variables with U.S. reinsurance industry host country operations are presented below.

### **Attractiveness of the Host Country**

Attractiveness of the host country refers to the degree to which the particular country's home market is desirable for reinsurance operations by foreign firms. In this study, we seek to understand the relationship between attractiveness of the host country and reinsurance operations of U.S. firms through these variables: (a) market size and (b) per capita income.

Market Size. Market size is perhaps the most important variable when a firm considers a particular market for overseas operations. A number of reasons have been proposed to explain why this may be the case: 1) Large markets offer a greater potential for growth and profit (Agarwal, 1994) as well as stability in operations; 2) Large markets tend to have strong domestic competitors and attract a large number of foreign competitors. Firms geographically removed from these markets are competitively disadvantaged (Porter, 1990); 3) By locating operations in

leading markets, firms are more keenly tuned to the changes in the market and are likely to respond to customer needs. Positive relationships between the host country's market size and insurance operations by foreign firms have been reported by previous researchers (Campbell, 1980; Lewis, 1989; Browne and Kim, 1993). Hence,

**Hypothesis # 1:** *The market size of the host country will be positively related to the extent of U.S. reinsurance operations in the host country.*

Per Capita Income. Per capita income is a measure of similarities or differences among countries. Countries with similar per capita incomes tend to have similar levels of economic development and consumption patterns (Linder, 1961). Higher income levels result in higher standards of living, purchasing power, and demand for consumer and industrial goods and services. Needless to say, for any demand to be realized, it needs to be backed with the buying power of the population. Since the U.S. is a country with a relatively high per capita income and the highest per capita insurance penetration, it is proposed that countries with a high per capita income would attract U.S. insurance operations. Therefore,

**Hypothesis # 2:** *A higher host country per capita income will be positively related to U.S. reinsurance industry operations in the host country.*

#### Competitive Conditions in the Host Country Environment

Competitive conditions in the host country environment refers to the degree to which international competition and trade takes place in a particular country. We seek to understand the relationship between competitive conditions of the host country and insurance trade through these variables: (a) bilateral trade between the U.S. and the host nation; and (b) insurance and financial exports from the host country.

Bilateral Trade. Bilateral trade is the extent of trade that takes place between the host country and the U.S. It is a good indicator of the extent to which U.S. firms have operations in the host country for three reasons. One, a large bilateral trade is indicative of a strong trade relationship and low level of trade barriers between the two countries. U.S. firms interested in overseas growth would therefore be likely to set up insurance operations in such countries. Two, when many U.S. firms have operations in a host country, many "spillover effects" in managerial knowledge are likely to take place, allowing other U.S. firms to gain expertise to operate in those markets. Three, when other U.S. firms have operations in a host country, they are likely to use U.S. firms for insurance services, as they are typically more familiar with them. This concept, referred to as "follow the customer", has been reported in the advertising industry and auto parts industry, wherein firms have followed their customers to various foreign markets. Hence, it is proposed,

**Hypothesis # 3:**        *The extent of bilateral trade between the host country and the U.S. will be positively related to the U.S. reinsurance operations in the host country.*

Host Country Insurance and Financial Exports. When a firm from one country enters another firm's market, there is an immediate response from the host country firm(s) according to the "exchange of threat" hypothesis. Companies want to operate in one another's market to be able to retaliate if one seeks to gain a large market share in another's market (Graham 1978; 1990). Once an industry rival expands in overseas markets, this pattern of behavior is replicated by other firms due to the "oligopolistic reaction" tendency of firms (Knickerbocker, 1973). Oligopolistic reaction refers to firms in oligopolistic industries diversifying overseas in a countermove to competitive actions of other firms. Foreign operations by one firm could trigger a similar investment by other leading firms in the industry to maintain competitive stability and

deny competitive advantage to rivals (Knickerbocker, 1973). This could force remaining firms in an industry to "mimic" each other due to the pressures of the institutional environment (Powell and Dimaggio, 1991). Hence, motivated by either offensive or defensive reasons, firms tend to opt for international operations. Therefore,

**Hypothesis # 4:** *The extent of insurance and financial exports from the host country to overseas markets will be positively related to the U.S. reinsurance operations in the host country.*

### **Similarity in the Host Country's Socio-Cultural Environment**

Similarity in the host country socio-cultural environment refers to how a country's culture, social, and political situation varies to that of the U.S. In this study we seek to understand the relationship between similarity in the host country's socio-cultural environment and the insurance trade through these variables: (a) cultural distance and (b) legal system.

Cultural Distance. Culture is "...the collective programming of the mind which distinguishes one group or category of people from another..." (Hofstede, 1980: page 266). Culture embodies specific learned norms, attitudes, values and beliefs in a society. Some aspects of culture (such as language, self-reliance, social structure, trust, and work ethics) differ significantly across countries and have a profound impact on consumption patterns and how business is conducted. Numerous studies in the international business literature have identified culture to be one of the critical dimensions in explaining the success or failure of a firm's international operations. Schroath and Korth (1989), in a survey of 67 insurance firms, found culture to be a significant barrier in setting up international operations. Hence, U.S. managers are likely to be more comfortable in countries where the culture is similar to that of the U.S.,

leading U.S. firms to have larger operations in countries with similar cultures. Therefore, it is proposed that:

**Hypothesis # 5:** *Small cultural distance between a host country and the U.S. will be positively related to U.S. reinsurance industry operations in the host country.*

Legal System in the Host Country. The legal system in a country is the body of law that governs contract enforcement and adjudicates responsibility as to who is at fault. The legal system (or contract laws) can be classified into two groups (i.e., civil law and common law). Common law is based on tradition, precedent, and custom. Countries where common law is prevalent include the U.S., U.K., and most former British Colonies. Civil law is based on a detailed set of laws organized into codes. Countries where civil law is prevalent include Japan, Germany, and France (Hill, 2000). U.S. insurance companies are likely to be more familiar with common law than with civil law, since common law is practiced in the U.S. For this reason, it is likely that U.S. firms would prefer countries with common law when choosing overseas countries to set up operations, in order to simplify managerial demands and lessen business risk. This assumption is reasonable, since when a firm goes overseas, it already needs to become familiar with the many nuances (e.g., language, culture, habits) of the host country and will seek to avoid unfamiliar legal systems so as to minimize new learning. Hence,

**Hypothesis # 6:** *Host countries having differing legal systems will be negatively related to U.S. reinsurance industry operations in those countries.*

#### Insurance Industry-Specific Variables

Previous studies on insurance industry operations have identified many variables which influence the level of the demand for insurance in a particular country. In this study, we focus on the two variables we believe that have the greatest impact on the U.S. reinsurance trade. These variables include: (a) price of insurance and (b) dependency ratio.

Price of Insurance. The price of insurance charged locally is a factor that could influence the demand for insurance services. Insurance companies in host countries could charge a price that makes insurance services unattractive to the local population, thereby limiting market growth and viability in operations. The reason for high prices could be lack of competition in the host country market. This could be due to governmental regulatory barriers (which increase the

cost of operations for all firms), licensing requirements preventing entry by firms, weak economic conditions, or tariff barriers erected by the government against foreign firms. This could lead to an undesirable local market for overseas firms. Hence, it is likely that U.S. firms would avoid such markets, and we propose that,

**Hypothesis # 7:** *The price of insurance prevalent in the host country will be negatively related to the extent of U.S. reinsurance operations in the host country.*

Dependency Ratio. Dependency ratio refers to the number of individuals dependent on a wage earner for financial needs. One of the purposes of life insurance is to protect dependents in case of premature death of one the wage earners (Campbell, 1980). Empirical studies have supported this rationale and have reported a consistent positive relationship between insurance sales and number of dependents across countries (Beenstock, Dickinson and Khajuria, 1988; Browne and Kim, 1993). In line with the above logic, we anticipate that reinsurance sales will follow the same pattern. For instance, if a large dependency ratio leads to greater insurance sales, this is bound to generate business for reinsurance firms in the long run. Hence,

**Hypothesis # 8:** *The dependency ratio in the host country will be positively related to U.S. reinsurance industry operations in the host country.*

#### **IV. Methodology and Data Sources**

The data used in this study are pooled time-series observations of U.S. exports to 32 countries during the period 1987 to 1998, collected from U.S. Department of Commerce publications, and information about each of the countries was collected from IMF or World Bank publications. The operationalization of the variables is based on standard economic measures and/or previous usage in the literature. The operationalization of each of the variables and the sources of data is elaborated in Table 1. The impact of host country characteristics on U.S. insurance exports will be analyzed using multiple regression analysis. The full model (referred to as Model 1) used to evaluate the hypotheses is shown here:

U.S. Reinsurance Exports =  $f\{\text{Market Size, Per Capita Income, Insurance \& Finance Exports, Bilateral Trade, Cultural Distance, Legal System, Dependency Ratio, Price of Insurance}\}$

Table 2 provides the descriptive statistics and correlations for the variables used in this study. We grappled with two issues during our data analysis. First, some of the variables in the study showed high correlation (e.g., Market Size, Insurance & Finance Exports, Per Capita Income, and Dependency Ratio). Dropping these correlated variables is one option but could result in loss of valuable information. However, despite the existence of high correlation between these variables, they are very distinct conceptually, and have been widely used in empirical research reviewed earlier. Second, the data used in this study consists of two types of independent variables. One type of variable is time-invariant (legal system and cultural distance) and the other time-variant. Hence, one could ask the potential question on the importance (or need) for time-invariant effects in a time-variant model.

In regard to the first issue, it should be noted that many leading references in econometrics and statistical methodology have offered as a rule of thumb that collinear relationships under .7 should not create potential problems (or statistical confounds) related to multicollinearity (Anderson, Sweeney and Williams, 1996; Griffiths, Hill and Judge, 1993). Hence, we decided not to drop any variables but run regression as full and partial models to check if multi-collinearity issues are confounding the study findings. Running differing partial models (wherein we drop the correlated variables) and comparing the results with the full model allows us to interpret the study results with greater confidence.

In regard to the second question, we followed the underlying logic presented by Cohen and Cohen (1983) with the “set-wise” regression procedure in multiple regression analysis. We

chose set-wise regression analysis, as it allows us to answer the research question for the need for time-invariant variables, given the many time-variant variables. Stated briefly, in the set-wise procedure, a regression model is run with all the variables (time-variant and time-invariant) as one set. Later, another model is run with only the time-variant variables as a set. The difference in R-square between the two models and the resultant F value is used to decide if the time-invariant variables explain any meaningful variance.

The models are described below:

**Model 1:** *All variables are included (combined model).*

**Model 2:** *All variables **except** Cultural Distance and Legal System (time-variant model).*

**Model 3:** *All variables **except** Market Size.*

**Model 4:** *All variables **except** Insurance and Finance Exports.*

**Model 5:** *All variables **except** Per Capita Income.*

**Model 6:** *All variables **except** Dependency Ratio.*

The above models were tested with reinsurance receipts received by U.S. insurance firms (reported in Table 3). We also ran regressions to understand the relative importance of each of the four groups of variables discussed in the earlier section (reported in Table 4). In all, we ran ten sets of regression. All the models were significant at the .01 level. The results were largely stable across the various models. The difference in R-square between the combined model and time-variant model (referred to as Model 1 and 2) was .07 and had an F-value of 8.2492 (significant at the .01 level), based on the formula provided by Cohen and Cohen (1983). This

result indicated that time-invariant effects do contribute to our understanding of the dependent variable. The findings of the study are discussed in the following section.

## **V. Findings and Implications**

Country Attractiveness. This study proposed two hypotheses regarding country attractiveness, one market size and the other per capita income. Both of these hypotheses predicted a positive relationship with U.S. reinsurance operations. These relationships were statistically supported with a positive relationship in all models the variables were tested. U.S. reinsurance firms seem to focus on markets of large size and where the population has significant spending power. This finding is consistent with the earlier findings reported by Browne, Chung and Frees (2000) for various forms of insurance. U.S. reinsurance firms may be better off focusing on such markets for several reasons: large markets may allow for many firms to exist without intense competition and may also afford significant scale in operations which might not be possible in small markets. It is also apparent that the population of the host country needs to be wealthy to generate demand for reinsurance, despite the fact that reinsurance is not consumed by individuals. One would assume that a wealthy population creates a demand for primary insurance services as well as other types of products and services, thereby also stimulating demand for reinsurance services.

Industry Competitiveness. Hypotheses 3 and 4 of this study proposed that insurance and finance exports from the host country and bilateral trade have a positive relationship with U.S. reinsurance operations in host countries. These two relationships were supported in all the models where the variable was included. One should not be surprised at the fact that U.S. reinsurance firms set up operations in countries wherein significant trade relationships exist.

This is also a trend in other industries. For instance, the rapid succession of Japanese auto parts manufacturers moving their production into the U.S. following the automobile manufacturers is an example that illustrates this pattern (Banerji and Sambharya, 1996). It makes sense to move to overseas countries where current customers have set up operations. Hence an existing trade relationship with a country facilitates entry to those markets. Graham's competitive rationale also received support, indicating that reinsurance firms do face competitive rivalry across international markets. Further supporting this hypothesis, Davidson (1980) found that firms in the same industry are likely to invest in the markets where their competitors invested previously. Such behavior for protecting market share can be found in many industries, e.g., Fuji and Kodak in photo films and Goodyear and Michelin in automotive tires (Hamel and Prahalad, 1985). Hence insurance exports from other countries are bound to attract U.S. firms to set up operations in the host country.

Socio-Cultural Variables. Hypothesis 5 proposed a negative relationship between the cultural distance of the host country and U.S. reinsurance operations in the host country. This hypothesis was not supported in all of the six combined models tested. However when the two socio-cultural variables were regressed separately on the dependent variable, the cultural distance was statistically supported with a negative relationship. One may say that the underlying logic of the hypothesis is supported, though cultural distance is not a critical variable when other factors are controlled for. This was a surprise, as culture is one of the variables which have been consistently supported in similar studies in the international business literature. Schroath and Korth (1989) also reported that cultural problems was one of the significant barriers to overseas entry, according to U.S. insurance managers. One may speculate that the importance of culture could be potentially less for reinsurance operations as opposed to primary insurance, wherein the

U.S. firm needs to market to the host country's population directly. Hypothesis 6 proposed that countries with different legal systems would not attract U.S. reinsurance operations. This variable was supported in all of the models tested, indicating that a country's legal system is a critical variable influencing a firm's decision to operate abroad. Hence U.S. firms seem to avoid markets with dissimilar legal systems. Browne et al. (2000) reported that insurance consumption is greater in common law countries than civil law countries. However, it is not apparent if U.S. firms avoid countries with civil law for this reason.

Insurance Industry Variables. Hypothesis 7 proposed that the price of insurance will be negatively related to the extent of U.S. reinsurance operations in the host country. This hypothesis, along with hypothesis 5, did not receive support in any of the six combined models. However, when regressed separately with dependency ratio, price of insurance was negatively related to U.S. reinsurance operations, as proposed. Hypothesis 8 proposed that dependency ratio is positively related to the extent of reinsurance operations in the host country. This hypothesis received support in only one of the combined models: Model 2, the one without two socio-cultural variables. The above two hypotheses were proposed based on a review of the insurance literature. Both of these hypotheses received very limited support, and one can claim that demand for reinsurance services is not necessarily impacted by the same factors that influence primary insurance.

Concluding Comments. This study looked at the factors influencing U.S. firms' reinsurance operations in host countries. The results of this study indicate that U.S. firms factor in market size, extent of purchasing power, extent of bilateral trade, degree of competition from host country firms, and type of legal system prevalent in the host country. Theoretically, this

study found support for Dunning, Linder and Graham's theory, and these findings lead to important managerial and public policy implications.

The results of this study indicate that U.S. firms need to target attractive markets (large markets with high per capita income and low trade barriers) to grow in overseas countries. A large market provides significant benefits for reinsurance firms. First, larger markets offer higher potential, thereby allowing for operations with scale, leading to efficiency and profits. Second, larger markets may allow for greater learning to take place from competitors and customers, thereby strengthening the firm. Finally, larger markets may allow for a greater reduction in currency related risks (Skipper, 1987) in international reinsurance operations, thereby allowing for greater profitability in the long run.

One other implication of this study is the need to be active in countries when competitors from those countries are active internationally or locally. One may cite the experience of the U.S. automobile industry to illustrate this point. It was apparent to automobile firms around the world that a global market presence was necessary to be competitive in the long run. This was not the case for the "big-three" automobile firms in the U.S., for various reasons, and international markets were ignored. However, it should be noted that the reasons for U.S. auto firms to be home-market oriented are very similar to those reported by insurance firms in the survey conducted by Schroath and Korth (1989). The failure to act early and learn to operate in these countries became a handicap when the U.S. marketplace was assaulted by foreign firms. This resulted in local firms ceding market position to foreign rivals over the long run.

U.S. firms seem to avoid markets with dissimilar legal systems. While this approach may be appropriate in the beginning stages of internationalization, U.S. firms should make an effort to

learn and operate in these markets also. These markets constitute roughly fifty percent of world economic activity, and therefore a firm could be dangerously limiting itself in its globalization potential. It is in this regard that the role of state becomes apparent. The government should push for standardization of rules across countries, thereby reducing undue uncertainty in international operations for international firms. The increased use of multilateral treaties and agreements would be helpful in this regard, bringing uniformity regarding regulations across countries. Otherwise, one sees a limited role of the state in reinsurance operations, except that of serving to encourage trade and reduce trade barriers.

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