

**ROLE OF ISLAMIC RELIGIOUS BELIEFS IN INSURANCE DEVELOPMENT,
AND THE CASE OF UAE**

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DEDICATION

To the soul of my late father, Ali, may he rest in peace, and to my mother, Sayadah, may God grant her strength, good health, happiness, and long life. For their love, prayers, support, and encouragement throughout my entire educational career.

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DISSERTATION ABSTRACT

ROLE OF ISLAMIC RELIGIOUS BELIEFS IN INSURANCE DEVELOPMENT, AND THE CASE OF UAE

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The primary objectives of this dissertation are to analyze the relationship between insurance development and Islamic religious beliefs as an independent variable, to highlight the importance of insurance in economic growth of developing countries, to advance recommendations for promoting insurance in predominantly Islamic countries, and to review the United Arab Emirates' (UAE) potential for insurance development.

The methodology used in this study is the application of quantitative statistical analysis to historical economic and demographic data from two economically homogenous groups. The basic proposed hypothesis is that Islamic religious beliefs may adversely affect insurance development in a given country. A one-way, between-subjects (groups) design was chosen to validate this hypothesis. One explanatory variable and two well-known insurance development benchmarks: insurance penetration and insurance density, were selected as dependent variables.

The quasi-independent variable of Islamic religious beliefs is a between-subjects factor, which may be confounded by many other participant variables, such as the level of economic development, per capita income, price of insurance, and so on. To control these variables, the selection of the sample was limited to two economically homogenous groups, namely: Group-1: 18 Arab countries, as representative of countries with predominantly Islamic religious beliefs, and Group-2: 30 Organization of Economic Cooperation and Development (OECD) countries, as representative of countries with predominantly non-Islamic beliefs.

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CHAPTER ONE

INTRODUCTION

The primary function of insurance is the reduction of risk by way of transfer. Transactions by economic entities have always been surrounded by risk. However, only in modern market economy has it been possible to find ways to effectively manage risk. The main economic role of insurance companies has traditionally been to assume risks against a price (premium) determined on the basis of risk assessment. “Unpredictable events, which may have prohibitive financial consequences for single economic entities, can thus be reduced to manageable costs” (Holsber 1999). The insurance industry is classified into two major sectors: life and property-casualty. “Life insurance provides protection against untimely death, and illnesses. Property-casualty insurance protects against personal injury and liability such as accidents, theft, and fire” (Saunders 2000).

The second main function of insurance is the capital function, the function of collecting and accumulating low returns savings. This function is vital for the economy. Few economists would doubt that savings are prerequisite for economic growth. The capital function also positions insurers in their role as institutional investors, through which they undertake the task of attempting to efficiently allocate accumulated capital in the economy. In this role, insurance companies transform funds from small to large amounts and from short to long durations (corporate and government loans, mortgages and equity participations). This transformation function is vital for the efficient allocation of capital in the economy. It is enhanced by the fact that insurers are better suited to apply risk selection

Islamic countries lacked adequate financial structures. In his study of Iran's Second Development Plan (1994-1999) Hooshang Amirahmadi (1995:9), pointed out that the first plan "had demonstrated that economic growth in Iran (a predominantly Islamic country) was impossible without structural changes in economic, key social, political and cultural spheres of the country." In his view, the future rate of economic growth in Iran will be dependent on the effectiveness of these changes and the rate of change.

In fact, the financial institutions of most Islamic countries have not been as effective as those in the developed countries. Muslim financial institutions have neither been capable of attracting substantial savings nor been able to provide acceptable and effective tools for channeling savings into long-term investments that are needed for the development and expansion of capital markets as well as for sustained economic growth.

This shortcoming can be attributed to the failing of Muslim peoples to reconcile the ideological foundations of their economies with the modern economic, social, and technological patterns that would make possible the establishment of a viable infrastructure for their financial institutions in the light of changing times and conditions. Insurance companies have not been influential in any significant way in the economic activities of most Islamic countries. In fact, in many Islamic countries, most insurance companies are technically subsidiaries of foreign companies, (the profits of which are not injected in the markets in which they operate). Many of the Muslim Governments failed to use their insurance regulatory bodies effectively in order to curtail such phenomenon. Most importantly, some insurance products, especially those pertaining to life insurance, continue to be inconsistent with the value systems of the majority of Muslim societies.

According to Haberbeck (1987:138,141), the chief objection to insurance for profit (from an Islamic point of view) rests on the *gimar/maysir* (gambling) element, which is currently part of, but not necessary on *gharar* (uncertainty) and *juhala* (ignorance) elements, which also exist in mutual insurance. Other objections or reservations about insurance are related to ownership, the rights of the policyholders, investments (fixed interest-carrying programs), policy wording, rating, and concepts of probability and insurable interest.

In some countries, such as Iran and Pakistan, in which insurance businesses are either nationalized or over-regulated, a further hindrance is connected to income distribution. Income is concentrated in a few hands rather than spread among various groups in the society. Middle-income classes (who are vital for the success of any insurance industry) are small or virtually nonexistent, and many people in such countries cannot afford to buy insurance coverage or insurance products. The insurance businesses in Iran and Pakistan are over-regulated in order to ensure continued governmental control over most of their activities with the declared aim of protecting the interests of the policyholders.

In some Islamic countries, like Pakistan and Saudi Arabia, large industrial and commercial businesses protect their operations by buying insurance coverage from non-Islamic companies, but small businesses and individuals remain largely uninsured. Non-Islamic insurance companies are allowed to operate in almost all Islamic countries including Saudi Arabia, because of the disagreement among Islamic scholars as to the permissibility of commercial insurance contracts. Some scholars thought they are prohibited, while others thought they were allowed, a third are of the opinion that some types are allowed and not others. "Vast sections of the population in Pakistan are without

Table 2

The Minor Role Played by the Insurance Industry in the Economies of Arab Countries (As Representatives of Predominantly Islamic Countries)

Country	Gross Premium Income (GPI) Million USD\$	Percent (GPI) Reinsured (%)	Nr. (#) of Nat'l Insur-ance Co.'s	Nr. (#) of For'n Insur-ance Co.'s	Gross Domestic Product (GDP) in Million USD\$	Insurance Penetration: = (GPI) as (%) of (GDP)	Population in Million	Insurance Density: Per Capita (GPI) USD\$
Algeria	\$257.7	18.0%	7	0	\$41,231.4	0.6%	30.8	\$8.00
Bahrain	134.4	50.4%	9	10	6,620.0	2.0%	0.7	192.00
Egypt	596.2	53.3%	12	0	88,911.8	0.7%	67.2	9.00
Iraq	327.6	8.0%	3	0	10,467.7	3.1%	22.5	15.00
Jordan	140.7	35.6%	26	1	7,454.9	1.9%	6.5	22.00
Kuwait	199.0	49.6%	5	11	30,110.0	0.7%	2.1	95.00
Lebanon	473.3	27.5%	65	11	16,650.5	2.8%	3.2	148.00
Libya	170.0	56.4%	2	0	32,517.9	0.5%	5.5	31.00
Mauritania	5.1	35.2%	2	0	928.9	0.5%	2.6	2.00
Morocco	964.8	17.2%	19	0	35,013.3	2.8%	28.2	34.00
Oman	168.0	53.0%	8	10	15,790.3	1.1%	2.5	67.00
Qatar	150.3	59.0%	4	4	11,336.9	1.3%	0.6	251.00
S. Arabia	785.1	58.2%	69	0	139,197.3	0.6%	19.9	39.00
Sudan	32.7	48.8%	16	0	11,520.0	0.3%	28.9	1.00
Syria	337.2	11.9%	1	0	75,624.0	0.4%	16.1	21.00
Tunisia	331.1	21.9%	17	0	20,820.6	1.6%	9.5	35.00
U.A.E.	772.2	63.5%	21	26	54,750.0	1.4%	2.9	266.00
Yemen	18.8	90.6%	10	0	6,720.2	0.3%	17.7	1.00
Total	\$5,864.2	36.0%	296	73	\$605,665.9	1.0%	267.4	\$22.00
USA	\$969,152	11.4%	4,887	518	\$9,237,000	10.5%	272.9	\$3,551

Sources:

1. ARIG: Annual Review of the Arab Insurance Market, 1999, Bahrain 2001.
2. OECD: Insurance Statistics Yearbook 1992-1999, Paris 2001.
3. United Nations Statistics Division (UNSD): Info-Nation, New York, 2001.
4. The Central Bank of the UAE: Economic Bulletin 1999, Abu Dhabi, UAE.
5. UAE Ministry of Economy & Commerce: Annual Report on the Activities of the Insurance Sector, 1999, Abu Dhabi, UAE.

In her 1998 book: “The Future of Islam and the West, Clash of Civilizations or Peaceful Coexistence?” Shireen Hunter, provides a pragmatic analysis of the relations between Islam and the West. Her book gives a realistic and accurate assessment of the relative role of civilization factors in determining the nature of the state and prospects for Muslim-Western relations (i.e., whether they will be conflictual or cooperative.) Hunter answers the question: Can accommodation between Islam and the West take place in a gradual and evolutionary manner or will it happen only after conflict and confrontation? Contrary to Huntington’s vaunted thesis in: “The Clash of Civilizations and the Remaking of World Order” (1996), she finds that the reality of modern Islam offers room for hope.

Therefore, in spite of the tragic events of September 11, 2001, it is still believed that there is room for hope for future cooperation between predominantly Islamic countries and the West in all fields including the economic field in general and the insurance one in particular.

Capital formation, for example, is vital for economic development, and savings are an essential factor in that process. However, in order to achieve acceptable levels of savings, Islamic countries cannot follow the methods that are used in the West. There are major cultural differences between the two worlds, which cannot and should not be ignored in the process.

These cultural differences between the two worlds relate principally to the concept of interest (*riba*) in the process of investments and savings, which historically and morally, has such a negative connotation for the Muslim consciousness. The subject matter of interest (*riba*) and its relation to insurance will be discussed in more detail in a later section of this chapter.

differences among countries; lack of statistical analyses of correlation among the variables employed, and potentially biased estimations.

Most of the normative studies of the role of insurance in developing countries have been conducted by international organizations, primarily the United Nations Conference on Trade and Development (UNCTAD) and the Third World Insurance Congress. These studies have pointed out the important role of insurance in economic development and social welfare.

For example, one UNCTAD report recognizes that “a sound national insurance and reinsurance market is an essential characteristic of economic growth.” However, insufficient research has addressed the detailed effects of religious beliefs in the development of insurance, especially in those countries that are predominantly Islamic.

Purpose of the Study

The fundamental goals of this dissertation are two-fold. First, using a one-way, between-subjects (groups) design to analyze the short term and long-range relationship between insurance development and Islamic religious beliefs as an independent variable. Recognizing the differences between life and non-life insurance, these two sectors of the industry, will be discussed separately whenever necessary.

Second, a normative study is proposed to address issues such as the contribution that the insurance industry can make in economic development of predominantly Islamic countries. The objective being to develop obvious and subtle policy implications for those countries from the findings of the analytical work as well as from other economic literature.

Zelizer (1979) notes that religion historically has provided a strong source of cultural opposition to life insurance; many people believe that reliance on life insurance results from distrust of God's protecting care. Until the nineteenth century, European nations condemned and banned life insurance on religious grounds. Zelizer further states that religious antagonism towards life insurance still remains in several Islamic countries.

Wasow (1986) tested the effect of Islam on life insurance consumption using an international data set. The results of his study indicated that, *ceteris paribus*, consumers in Islamic nations purchase less life insurance than those in non-Islamic nations.

Browne and Kim (1993) concluded that, *ceteris paribus*, Islamic dummy variable has significant and negative coefficient in insurance development.

In his 1994 study, Meng has also concluded, *ceteris paribus*, some cultural and historic factors effects, such as Islamic religious beliefs, are influential in insurance development.

Nik-Mat (1995) concluded that, *ceteris paribus*, race and religion significantly affect life insurance salespersons' performance in Malaysia (a predominantly Islamic country).

2) Theoretical Framework - the Relationship between Insurance and Islamic Beliefs:

Insurance originated and developed over hundreds of years in the Western world although it was novel to Islamic societies. The concept of insurance was introduced to several Muslim states during the European Industrial Revolution, approximately 150 years ago. European commercial agents who lived in parts of the Islamic world, and who imported goods from their home countries, initiated insurance policies to protect their merchandise.

According to the *Hadith*, the second source of *Shari'ah*, the Prophet mentioned *riba* in *Hijab Al-Wada* (the farewell pilgrimage) but did not have enough time to clarify its meaning. For this reason, several traditions relate that “the Prophet said: there is interest only on a debt, and he may have said on a delay of a debt.” Other traditions expand the activities, which are covered by the term *riba* to include the exchange of equal quantities of different materials, the exchange of different quantities of the same material, or the exchange of perfect merchandise for damaged merchandise.

The lexical meaning of *riba* is ‘increase.’ According to some scholars, the term *riba* was expanded so much in Islam as to include gambling and any gain earned without work.

This wide range of possible meanings for *riba* has left the Islamic scholars perplexed, on the one hand, and free to use the term according to their personal, religious and even political interpretations, on the other. The need for these various interpretations derives from the difficulty, which the prohibition of interest, if taken literally, creates for every day economic practice. Two of the most respected earlier scholars of Islam, Ibn Rushd and Ibn Qayyim differentiated between two types of interest (*riba*); overt (*riba al-fadl*), and covert (*riba al-nasi'a*). Others differentiated between the interest (*riba*) in the *Qur'an* and that which appears in the *Hadith*, since the *Qur'an*, not the *Hadith*, spoke of overt interest.

The Council of Senior *Ulama* (scholars) in Saudi Arabia declared in 1977 that all types of commercial insurance and life insurance are prohibited. The major reason for the prohibition is the interest carried with the insurance. Several *Sunni* Islamic scholars, including Dr. Shawkat Al-Aliyyan, support this attitude.

The original social maladies which were associated with interest, namely the oppression of the poor, taking advantage of the needy and making profit from hungry debtors, do not seem to be the case with insurance. Insurance in itself is a luxury. One bears an extra expense when one buys insurance, and therefore low-income people will tend to avoid it, or buy only the minimum necessary. Poor people would spend money on more immediate needs, and probably disregard further aspects of security. Aside from life and health insurance, where the sustenance and well being of the family are cherished by both poor and rich, lower income people may have less to insure, to begin with. Overall, interest in its classical meaning, and in the way it was perceived by monotheistic religious scriptures, could not be found in insurance.

The Muslims who condemn *riba* as one of the major “defects” of insurance, are influenced by the wider notion of the term *riba*, not by that which is tied to loans and debts. This wider notion includes the fact that insurance compensations are collected without work and that the amount deposited with the company (the premium) is never returned to the insured in its original sum. It may be returned partially (in property and liability insurance), tens of times more than its original amount (in life insurance), or not at all. In the latter case, the company collects all the profits.

Riba, historically and morally, has such a negative connotation for the Muslim consciousness even today, that it is used to label anything that seems dangerous to Islam, and insurance generally is viewed in such a light. Sometimes the examples which attempt to show the occurrence of *riba* in insurance, overlap with those that show the uncertain nature of insurance (*gharar* and *juhala*), and one wonders if the two problems are at all separable.

It is obvious that with regard to sale transactions, Islamic law requires that there be no uncertainty as far as quantity, quality, price of the object, and the date of payment. If insurance is considered a sale contract, it is indeed rendered invalid according to the *Shari'ah*. In the case of life insurance, the sum of the amounts tendered, as premium is not equal to the amount of death benefits. Moreover, the insured can sometimes pay but one premium, and die, yet his beneficiaries would still be eligible for all the death benefits. In the latter case, the insurance company pays out much more than it ever received.

Another uncertainty derives from the time difference between the payment of the first premium and the collection of death benefits. In property and liability insurance, the time factor is less important, since the contract is often renewed annually. In property and liability insurance, however, the uncertainty remains as to the dimensions of the perils to occur, or whether they will occur at all. If no peril occurs during specific year, the premium becomes the company's profit, and the insured is not compensated, or so at least it seems on the surface. If the peril does occur, coverage may cost the company much more than the insured ever paid in premiums, and thus another "imbalance" is created.

Some Islamic scholars have suggested that there are types of *gharar*, which cause dispute, and these are objected to in Islam, while there are other types of *gharar*, which do not cause dispute, and therefore can be accepted. For example, if a person sold his car without specifying a price to another, which the other accepted. In this situation, there would no doubt be a dispute as to how much the price is. However, if the uncertainty does not affect the implementation of the contract it will not be void, for example, if a person agreed to relieve another from all debts owed by him (the total sum owed not being known at the time) in exchange for a certain sum of money. In this situation, although the

of *riba*. The moral logic behind these two prohibitions is one and the same. Thus, in the end, it is left to each Islamic scholar to judge for himself if the *gharar* involved in insurance is harmful to the insured at all, and if it is, how harm can be avoided.

Gimar/Maysir – Gambling: The insurance contract is aleatory, that is to say, contracting parties are aware that the amount of money to be exchanged by each party will not be equal. If the risk were greater than the cost, then the insurer would assume whatever losses occur, and if no loss suffered, nothing would be paid.

Because of its nature, some Islamic scholars interpreted the insurance contract as a form of gambling, which is strictly prohibited by Islam. The *Qur'an* addressed the matter in the following passage: “*O ye who belive! Intoxicants and gambling, Sacrificing to stones, And (divination by) arrows, Are an abomination, - of Satan’s handiwork: Eschew such (abomination), That ye may prosper.*” (5:90) Given this admonition, scholarly concerns were not misplaced, since the insurance contract was looked at from the perspective of the relationship between an underwriter and an insured party. The possibility exists that insurer would have to pay an amount much larger than the premium received for the policy, or that no payment will have to be made. Still, the distinguishing feature of an aleatory contract is the presence of exchange. This characteristic where the insurance operation is looked at as a relationship between the underwriter and a pool of those insured, did not mean that the insured paid more or less than the insurance was worth or that the insurer collected more or less than the anticipated amount needed to conclude its business. The insurer expected to collect in premiums enough to pay claims and expenses, which means that the insurance

From a customer's perspective, the insurance was mainly a contract of indemnity, especially in property and liability cases. Unlike gambling, insurance was not designed to offer an insured party the opportunity for profits, but the chance to offset possible losses. Because of this misunderstanding, some Islamic scholars concluded that insurance was a challenge to God's Will, however, insurance could not – by itself – minimize or eliminate the occurrence of risks, it is only an effort to restore their effect.

To avoid gambling in insurance, and not to depart from the principle of indemnity, it was incumbent upon an insured to prove that he or she has suffered a financial loss to recover under his/her policy. In other words, if an insured had no insurable interest in the subject matter insured, the contract would be regarded as gambling and would be void.

The right of subrogation is a further clarification between gambling and insurance. Under this principle, an underwriter takes over the client's right to claim damages against those responsible for the loss, after paying the proceeds of the policy to the insured. Thus, an underwriter did not always pay an insured, and get nothing in return, as was the case in gambling. Therefore, to classify a serious activity that benefited society as gambling was, at best, inaccurate. Moreover, insurance benefited society in other ways, including provisions that cancelled the cover if the subject matter insured was illegal (such as a drug trafficker insuring against being caught), further reducing criminal activities. Strict rule prevented insurance policies from being enforced if the said policies promoted results contrary to the public interest, such as insuring goods bought from a putative enemy.

Finally, and unlike gambling, in the insurance contract there is consideration moving from the underwriter to the assured, which is the safety aspect if the risk did not happen and the compensation if it did.

insurance think that once all available transactions have been exhausted, new ones may be employed. To support this idea they cite a *wafa'* contract which was legitimized by the Hanafites (a *Sunni* faction) in the fifth century After Hijrah (A.H.)

This contract provoked a fierce debate in its time, because it included hidden interest. In *wafa'*, person (A) gave money to person (B) for a house, as if he (A) bought it. Actually (A) just rented the house, and when (B) will have the money to return to (A), (A) will vacate the house. The interest is disguised in the form of free rent for (A). The debate was over whether the *wafa'* was a valid contract, a void contract, or a hire contract. The Hanafites concluded that none of the three possibilities were applicable and declared *wafa'* to be a “new” contract.

Following the example of *wafa'*, the proponents of insurance claim history is repeating itself in the case of insurance; some prohibit it, some permit it, and some see in it a contract of cooperation (*ta'awun*), which aims at minimizing losses. They would like to see in insurance a “new” contract, to which new *Shari'ah* laws should be fitted.

In conclusion, it can be stated that Islamic law scholars do not agree on the permissibility of insurance contracts; some of them thought they are prohibited in Islam while others thought they were allowed. A third are of the opinion that some types of insurance contracts are allowed and not others. “As a result of this disagreement commercial insurance companies are not banned and do operate in all Islamic countries including Saudi Arabia.” (Al-Ghadyan, 1999).

The disagreement among Islamic scholars means that the Muslim people are Islamically entitled to follow any of the scholars' opinions.

4) Methodology - Case Study:

The case study is used to describe and evaluate the UAE's insurance development in the context of the influence of Islamic religious beliefs and economic growth. In this study, special attention is paid to the influences of government policies and other social factors on insurance development.

Research Hypotheses

The basic research hypothesis for this study is that Islamic religious beliefs may adversely influence insurance development in a given country.

It further hypothesizes that life insurance growth in the UAE is negatively influenced by its inhabitants' Islamic religious beliefs.

Importance of the Study

The contributions of this study to the related existing body of knowledge include the following: It highlights the influence of Islamic religious beliefs and secular life as a whole in insurance growth, an area in which only limited research has been conducted. It emphasizes the necessity of the insurance industry as an integrated part of a country's financial system. It sheds light on the need for predominantly Islamic countries to employ integrated policies for promoting insurance, and identifies the components of such policies. It demonstrates, through a case study, that social factors, including religious beliefs, can play important roles in insurance development. It provides various perspectives on the experiences, challenges, and insurance market potential of the UAE.

inflation expectation, price of insurance, spending on social security, and education level (Browne & Kim, 1993). Level of income, cultural and historical influences (Meng, 1994).

The scope of this dissertation is further limited to study in detail, the case of the UAE's insurance industry. Thus, the study of other countries insurance industries' is obviously beyond the scope of this dissertation.

Definition of Terms

Most of the terms used in this study have the meaning commonly assigned to them in the fields of economics, insurance, and finance. If not, they are explained when first mentioned. Nevertheless, it may be useful to review the definitions of the main terms used:

Insurance: A contract of insurance can be defined as: a contract whereby one person called the 'insurer' undertakes, in return for an agreed consideration called the 'premium', to indemnify (in cash or its equivalent) another person, called 'the insured', on the occurrence of a specified event.

Gross Premium: Gross premium, which represents total insurance premium written in the country, is a major indicator of the importance of the insurance industry in the economy of each country. Major trends, including globalization, consolidation, liberalization, and the widening of distribution channels, are having an impact on the growth of insurance premiums in individual countries as well as on the insurance industry as a whole.

Gross Domestic Product (GDP): It is the total market value of all final goods and services produced in the economy (of a given country) in one year. It is the broadest measure of economic development.

Juhala: Ignorance. Uncertainty in a contract that may lead to a dispute at a later stage.

Gimar/Maysir: Gambling – The term literally means a way of obtaining something too easily, or driving unearned profit.

Riba: Usury – Exorbitant or excessive interest. It is a preconditioned increment that has no *Shari'ah* recognized counterpart in an exchange relationship.

Ulama: Islamic Scholars.

Umma: Nation of Islam/community.

Halal: An act or product that is permissible in accordance with Islamic *Shari'ah* principles.

Mudharabah: An agreement between two or more persons whereby one or more of them provide finance, while the other(s) provide entrepreneurship and management to carry on any business venture whether trade, industry or service with the objective of earning profits. The profits or losses are shared according to agreed proportions.

Zakat: Muslim's wealth tax: One must pay 2.5% of one's yearly savings above a certain amount to poor and needy Muslims. Zakat is compulsory on all Muslims who have saved (at least) the equivalent of 85grams of 24 carat gold at the time when the annual payment is due.

Takaful: Guaranteeing each other. Kind of Islamic insurance. A scheme of mutual support that provides insurance to individuals against hazards of falling into unexpected and dire need.

CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter provides a theoretical background to the research problem through a review of the literature related to the current study. The material presented in this chapter is divided into four main sections.

The first section discusses the major empirical studies related to the factors influential in insurance development, including religious beliefs. The second section reviews the studies dealing with the relationship between insurance and Islamic beliefs. The third section reviews case studies dealing with insurance development in specific countries. The fourth and final section deals with comments and critiques of the literature related to this dissertation.

This chapter should prepare the reader to better understand the research subject presented in the remaining three chapters of this study.

Major Empirical Studies

The theoretical framework for conducting empirical research in this area lies in the premise that there are a number of factors (social, economic, cultural: including religious beliefs, and political), which are influential in the development of the insurance industry in any given country.

In recent years, nine empirical studies have addressed the relationship between the growth in insurance and economic development in developing countries. These studies are cited and described in chronological order, as follows:

(V_{jt}) is the real premium per capita for country j .

$(j = 1, 2, \dots, 12)$ in year t ($t = 1970, 1971, \dots, 1981$);

(Y_{jt}) is the Gross National Product (GNP) per capita;

(D_j) is the country dummy variable; and

(r_{jt}) is the real interest rate presented by long-term yield on government bonds minus price index increases.

The results of ordinary least squares regression showed that: (1) the marginal propensity to insure, defined as the increase in spending on property-liability insurance when income rises by one unit, differs among countries; (2) property-liability insurance is a superior good that is disproportionately represented in economic growth; and (3) premiums vary directly with real rates of interest, implying that the higher the supply of underwriting capital dominates the effects of the fall in the demand for insurance when interest rates rise.

3. **Kim (1988):**

Kim's study of life insurance development used four variables and small sample of 20 observations from developing countries (defined as countries with less than \$3,500 GDP per capita). This study found that four factors were either significant or close to significant. Kim's model was:

$$PRE = \alpha_0 + \alpha_1 GDP + \alpha_2 YDIST + \alpha_3 PSS + \alpha_4 LPGA + e$$

Where:

(PRE) stands for life insurance premiums;

(GDP) stands for Gross Domestic Product per capita;

(YDIST) stands for the income distribution measured by the percentage of income of the upper 20 percent of households;

(A_t) represents the age distribution (median of the population between 25 and 64);

(E_t) represents educational development; and

(Y_t) is per capita income.

The coefficients associated with the variables (E_t) and (Y_t) were found to be significant in both countries, while (A_t) was only used for the U.S. equation. The results of this study were generally consistent with the hypothesis that age, education, and level of income are factors affecting the demand for life insurance.

5. Outreville (1990):

Using 55 observations, Outreville fit a cross-country multiple linear model using ordinary least squares regression:

$$D = d(Y, PI, P, FD, CPI, MONO, EDUC, AGRI),$$

Where:

(D) stands for property-liability insurance development as measured by the logarithm of property-liability premiums per capita;

(Y) stands for economic development or income level, measured by the logarithm of gross domestic product (GDP) per capita;

(PI) stands for the price of insurance as measured by the logarithm of the reciprocal of the loss ratio;

(FD) stands for the financial development as measured by the ratio of the money supply (broadly defined) to the gross domestic product ($M2/GDP$);

(CPI) is the inflation rate as measured by the increase in the consumer price index;

(MONO) stands for a market structure dummy variable to indicate whether or not the insurance market is a monopoly;

(ND) is the logarithm of premiums per capita (net of reinsurance) used to represent the retention capacity, or the supply of insurance in the local market;

(RU) is the underwriting return on insurance, measured as one minus the combined ratio (combined ratio usually refers to the ratio of claims and expenses to premiums);

(LOCLARE) is a dummy variable indicating if a local reinsurer exists; and

(%AUTO) is the share of automobile insurance business in the portfolio.

The results from fitting the second model by ordinary least squares regression showed that all but the (RU) and the (MONO) factors were significant, with positive coefficients, suggesting that the existence of foreign insurers and local reinsurers might play significant positive roles in insurance growth.

7. **Browne and Kim (1993):**

In this study, the authors performed an analysis of life insurance demand by applying three log-linear equations to cross-country data. The most novel aspect of their research was that, in two of the three equations, insurance-in-force was used as an independent variable to represent the development of insurance in a country. Browne and Kim used the following basic logarithmic equation:

$$\begin{aligned} \text{Log}(Y_i) = & \beta_0 + \beta_1 \log(\text{DEP}_i) + \beta_2 \text{MUS}_i + \beta_3 \log(\text{INC}_i) + \beta_4 \log(\text{SSE}_i) + \\ & \beta_5 \log(\text{INF}_i) + \beta_6 \log(\text{EDUC}_i) + \beta_7 \log(\text{LE}_i) + \beta_8 \log(\text{P}_i) + e_i \end{aligned}$$

Where: the subscript (i) indicates country (i);

(Y) stands for per capita life insurance volume;

(DEP) stands for the dependency ratio;

(INC) stands for per capita national income;

(SSE) stands for per capita government social security expenditures;

(INF) represents the expected inflation rate;

Results from the final models include: (1) insurance development is positively associated with the levels of income and education, (2) high inflation tends to restrict life insurance development, (3) some cultural and historic effects are influential in insurance development, (4) insurance is a critical part of the financial industry, and (5) monopoly insurance markets tend to restrict life insurance development. Further, it is also found that property-liability insurance tends to be associated with fewer determinants than is life insurance, and that insurance densities are better explained by the explanatory variables than are penetrations.

9. **Nik-Mat (1995):**

This study is concerned with an empirical investigation of the factors that predict a successful salesperson, using cross-cultural comparison of two countries: the United Kingdom (U.K.) and Malaysia (predominantly Islamic country).

Besides collecting quantitative data, qualitative data on organizational, environmental and cultural factors were also collected through interviews, personal and case observations. The quantitative data consist of sixteen independent factors and three dependent factors. The independent variables include: self-efficacy, self-esteem, focus of control, self-monitoring, extrinsic motivation, intrinsic motivation, experience, training, perception, role ambiguity, role conflict, role inaccuracy, gender, education, race, and religion. The dependent variables are performance target achieved, performance earnings, and performance ratings.

Questionnaires were distributed to about 500 salespersons in each country, from three insurance companies in the U.K. and two insurance companies in Malaysia. Response rates were 75 and 50 percent from the U.K. and Malaysia respectively.

Studies on the Relationship between Insurance and Islamic Beliefs

The theoretical framework for conducting research in this area lies in the premise that the majority of Islamic scholars, relying on the teachings of *Qur'an* and *Sunnah*, have prohibited all types of conventional insurance contracts (products) on the grounds that they may contain elements of *gharar* (uncertainty), *juhala* (ignorance), *maysir/gimar* (gambling), and *riba* (usurious interest), all of which are contrary to Islamic teachings. Only cooperative Islamic insurance companies operating in accordance with *Shari'ah* (Islamic principles) are acceptable.

The research in this area is very limited indeed. We describe below three recent studies dealing with the relationship between insurance and Islam:

1. Rispler (1985):

In his 1985 study, Rispler has discussed insurance in the world of Islam, its origins, problems, and current practice.

According to Rispler, the few Islamic insurance companies, which do exist in Muslim countries, provide Muslims with a feasible alternative to Western-style insurance; an alternative that despite all criticism is workable and religiously approved.

It is difficult to predict what percentage of Muslims will shift from conventional insurance companies to the Islamic ones, once the latter acquire more experience and a good reputation. It is also hard to estimate how many Muslims, who for religious motives never owned insurance policies, will join the Islamic insurance companies.

Muslims in America, facing the same dilemma of how to insure themselves “*Islamically*,” concluded that it is not financially feasible to start Islamic insurance

4. How should the rate of return (profit or loss) on investing in the Islamic insurance companies be determined?
5. How should the rate of return for investors investing in the Islamic insurance industry be determined?
6. How should insurance products be designed?
7. How should Islamic governments assist an Islamic insurance industry?
8. What role should Islamic governments have regarding regulation of Islamic insurance companies, especially in the areas of investments and operations?
9. How could the proposed model be applied to develop a viable capital market in Islamic countries?

In this study, the Islamic model of insurance companies was defined as insurance companies that operate according to Islamic (*Shari'ah*) law. Moreover, an Islamic country was defined as a country that is governed according to the Islamic law.

The main limitations of Rahmani's study were as follows:

1. The potential for error in sampling is present in this research as in all similar researches requiring samples. His study may also contain errors resulting from incomplete measurement techniques. As a result, caution must be exercised in the interpretation of results. However, the study hypotheses were tested at ($\alpha = .05$), a confidence level widely used in studies of this nature. Only fourteen out of the original twenty-five invited experts agreed to take part in answering the model questionnaire. Limiting the experts to those only available in the United States at the time of the study means that a sample of convenience was used instead of a true representative sample, representing the views of the many Islamic schools of thought, and the many different Islamic scholars who are versed in Islamic jurisprudence and who are dispersed throughout the world.

Case Studies

The theoretical framework for conducting a case study of the development of the insurance industry in any specific country could be explained by the fact that all pertinent issues relating to this subject could only be covered through an in-depth case study that a cross-country study alone would not simply cover adequately.

In recent years, three case studies have been conducted to study the growth of insurance and economic development in three developing countries. These case studies are cited and described below:

1. **Kim (1988):**

The results arrived at by Kim upon studying the Republic of Korea's insurance industry includes: the government has an important role to play and there is a need for strong support from it to achieve an accelerated life insurance growth. For example, the government could make a public commitment toward developing a life insurance industry, acquaint the general public with the concept and benefits of life insurance, and cultivate people's confidence in life insurance. Further, the government could devise a national scheme by which life insurance functions as a savings and protection tool that would be part of the financial planning of individuals of all income groups as it has been in Korea.

Governments' efforts to stabilize society and to achieve a more equitable income distribution among their peoples will aid life insurance growth. In addition, governments should endeavor to cultivate a competitive life insurance market environment if the industry begins to stagnate. Governments should understand the impact on the growth of life insurance of a national security system.

3. **Samarth (2000):**

In his 2000 study, of the Indian insurance market, Dr. Samarth, who is a leading insurance expert in the Indian market, has concluded:

1. The Indian sub-continent with its present population of 1.2 billion, has the potential to become in the twenty-first century, the biggest market for conventional insurance sector, provided the right macro environment emerges in the region, and
2. Subject to the development of the Indian macro environment, fulfilling the destiny of establishing the modern welfare state on the foundation of secular democracy, socio-economic justice and scientific progress, there will be tremendous scope for the vigorous growth in the Indian insurance industry. It will be able to take its rightful place in the international market, provided the present nationalization norm of insurance under state control is transformed into genuinely communized tri-sectorial norm constituted of the public, private and cooperative sectors.

The above case studies were mainly devoted to the study of specific insurance markets. The advantage of case studies is that they provide an in-depth description of an individual or event. The disadvantage is that, because they are essentially longitudinal studies, they are confounded by the occurrence of any extraneous factor during the period being studied, and because they are also archival studies, they may yield data with poor reliability and validity. Further, the selection of the participant or case is often a convenience and not random, and with an *N* of only 1, the external validity of a case study may be poor, probably not typifying other cases.

4. Almost all of the above empirical studies used GNP, GDP, or national income as the representation of a country's economic development. However, GDP is not the only data item that could be used in making international comparisons because economic definitions and statistical methodologies are not uniform throughout the world. Thus, additional indicators of economic development should be considered and tested. In other words, results may be more robust if more variables are considered before choosing the most applicable proxy(ies).

5. There are many differences between developed countries and developing countries and also among developing countries themselves. For example, developing countries include the so-called Newly Industrialized Countries (NIC), as well as the least developed countries (LDC), and still others for which it is difficult to assign a category, such as Bermuda. (This occurs because many differences exist, such as the level of industrial development and the openness to the outside world.) Group effects related to these types of subdivisions should be studied. Other ways of differentiating among countries include their historical backgrounds. This type of grouping is not given much consideration (except in the testing of Islamic predominance in insurance development by Wasow (1986), Browne and Kim (1993), and Meng (1994)). In fact, almost all of the above studies implicitly assume that one coefficient can describe the relationship between income and insurance development for all countries, from the least developed countries, to the newly industrialized countries to the most developed countries.

reaching a final model. This process not only increases the reliability of the coefficients, but also can increase the robustness of the study's findings.

8. Only two of the empirical studies showed the correlations among the variables in the data set, perhaps obscuring certain underlying relationships and problems of multicollinearity. (Problems of multicollinearity may cause a variable to be significant in one equation but not so in another, and to have coefficients of different signs in different equations). Most of the social and economic variables are correlated, and some are highly correlated. For example, as an economy grows, an urbanization trend is usually inevitable. While some of the researchers found from their regression that a monopoly market tends to restrict insurance development, they failed to notice that monopoly markets are usually seen in very poor countries; without a proper correlation analysis, it is hard to say whether it is the low level of economic development or the monopoly market, or both, that restrict the development of insurance. Because social, historical, and economic factors are so interrelated, therefore, more careful study is needed, and the process of model specification should constitute an essential and integrated part of the entire study.
9. All of the above studies were based on *archival research*. The advantage of archival research is that it allows access to behaviors that would otherwise be unobservable. However, archival research presents some disadvantages:
First, obtaining access to all pertinent records can be difficult if not impossible. Second, researchers are obliged, whenever possible, to obtain informed consent from the people described in the records, because their privacy is being invaded.

Summary

In recent years, there have been several studies addressing the growth of insurance in developing countries. Most of these studies employed cross-country analyses to identify the factors, both social and economic that contribute towards the growth of an insurance market. It is believed by some scholars in the field that both the width and depth of these studies are limited. Thus, there is still a substantial need for further study, especially on the effect of religious beliefs in insurance development.

One major drawback of previous research is the lack of theoretical model underlying the empirical work. As a result, prior studies have generally employed several variables selected simply because the authors thought they were important. Other technical weaknesses restricting the rigor of these studies include insufficient treatment of differences among countries, lack of statistical analyses of correlation among the variables employed, potential for error in sampling, incomplete measurement techniques, and potentially biased estimations.

Most of the normative studies of the role of insurance in developing countries have been conducted by international organizations, primarily the United Nations Conference on Trade and Development (UNCTAD) and the Third World Insurance Congress. These studies have pointed out the important role of insurance in economic development and social welfare. However, insufficient research has addressed the detailed effects of religious beliefs in the development of insurance, especially in those countries that are predominantly Islamic.

CHAPTER THREE

RESEARCH METHODS AND PROCEDURES

Research Design

The methodology used in this study is the application of quantitative statistical analysis to historical economic and demographic data from two economically homogenous groups. The primary objective of this dissertation is to analyze the relationship between insurance development and Islamic religious beliefs as an independent variable. The basic hypothesis is that Islamic religious beliefs may adversely affect insurance development in a given country. A one-way, between-groups design was chosen to validate this hypothesis.

The chosen design is used to analyze the database from two economically homogenous groups. One explanatory variable and two well-known insurance development benchmarks: insurance penetration and density, were selected as dependent variables.

The Population:

Islamic religious beliefs are presumed to be prevalent in those countries that are members of the “Organization of the Islamic Conference – OIC.” Their number is 56. Islamic beliefs are presumed to be very limited in other countries of the world. Their number is 136 (192 – 56). Thus, participants could be selected randomly from these two groups.

The Sample:

The quasi-independent variable of Islamic religious beliefs is a between-subjects factor, which may be confounded by many other participant variables, such as the level of

The databases are collated and summarized in the following four tables:

The following table, **Table 3**, contains the 1999 Insurance Penetrations – Gross Premium Income as a Percentage of Gross Domestic Product – in the economies of Arab countries. The data is presented for life, non-life and total insurance premium volumes.

Table 3

1999 Insurance Penetrations in the Economies of Arab Countries

(As Representatives of Predominantly Islamic Countries)

Country ^a	Gross Premium Income (GPI) in Million USDS	(GPI) Life in Million USDS	(GPI) Non- Life in Million USDS	Gross Domestic Product (GDP) in Million USDS	Life Insurance Penetration = GPI as (%) of GDP	Non-Life Insurance Penetration = GPI as (%) of GDP	Total Premium Penetration = GPI as (%) of GDP
Algeria	\$257.7	\$13.4	\$244.3	\$41,231.4	0.03%	5.9%	0.6%
Bahrain	134.4	31.1	103.3	6,620.0	0.50%	1.5%	2.0%
Egypt	596.2	164.2	432.0	88,911.8	0.20%	0.5%	0.7%
Iraq	327.6	109.1	218.5	10,467.7	1.04%	2.1%	3.1%
Jordan	140.7	21.4	119.3	7,454.9	0.30%	1.6%	1.9%
Kuwait	199.0	35.7	163.3	30,110.0	0.12%	0.5%	0.7%
Lebanon	473.3	83.6	389.7	16,650.5	0.50%	2.3%	2.8%
Libya	170.0	11.3	158.7	32,517.9	0.03%	0.5%	0.5%
Mauritania	5.1	00.0	5.1	928.9	0.00%	0.5%	0.5%
Morocco	964.8	269.9	694.9	35,013.3	0.80%	2.0%	2.8%
Oman	168.0	37.6	130.4	15,790.3	0.24%	0.8%	1.1%
Qatar	150.3	00.0	150.3	11,336.9	0.00%	1.3%	1.3%
Saudi Arabia	785.1	43.1	742.0	139,197.3	0.03%	0.5%	0.6%
Sudan	32.7	1.7	31.0	11,520.0	0.01%	0.3%	0.3%
Syria	337.2	2.6	334.6	75,624.0	0.00%	0.4%	0.4%
Tunisia	331.1	26.1	305.0	20,820.6	0.13%	1.5%	1.6%
U.A.E.	772.2	159.9	612.3	54,750.0	0.30%	1.1%	1.4%
Yemen	18.8	1.8	17.0	6,720.2	0.03%	0.3%	0.3%
Total	\$5,864.2	\$1,012.5	\$4,851.7	\$605,665.9	0.20%	0.80%	1.0%

Sources:

1. ARIG: Annual Review of the Arab Insurance Market, 1999, Bahrain, 2001.
2. The Central Bank of the UAE: Economic Bulletin 1999, Abu Dhabi, UAE.
3. UAE Ministry of Economy & Commerce: Annual Report on the Activities of the Insurance Sector: 1999, Abu Dhabi, UAE.

Note: (a)

Four countries were excluded from the twenty-two Arab League of Nations, for lack of data, namely: 1) Comoros, 2) Djibouti, 3) Palestine, and 4) Somalia.

The following table, **Table 5**, contains the 1999 Insurance Penetrations – Gross Premium Income as a Percentage of Gross Domestic Product – in the economies of OECD countries. The data is presented for life, non-life and total insurance premium volumes.

Table 5

1999 Insurance Penetrations in the Economies of OECD Countries
(As Representatives of Predominantly Non-Islamic Countries)

Country	Gross Premium Income (GPI) in Million USDS	(GPI) Life in Million USDS	(GPI) Non- Life in Million USDS	Life Insurance Penetration: = GPI as (%) of GDP	Non-Life Insurance Penetration: = GPI as (%) of GDP	Total Premium Penetration: = GPI as (%) of GDP
Australia	\$39,497	\$25,530	\$13,967	6.2%	2.9%	9.0%
Austria	13,229	5,142	8,087	2.4%	3.1%	5.5%
Belgium	18,329	10,737	7,592	4.3%	2.8%	7.1%
Canada	47,157	22,454	24,703	3.3%	3.4%	6.7%
Czech Republic	1,815	572	1,243	1.1%	2.3%	3.4%
Denmark	12,099	7,068	5,031	4.0%	2.3%	6.3%
Finland	5,924	3,359	2,564	2.6%	1.9%	4.4%
France	129,163	81,460	47,703	5.6%	2.9%	8.4%
Germany	181,376	73,224	108,152	3.1%	3.6%	6.7%
Greece	2,720	1,493	1,226	1.2%	1.0%	2.2%
Hungary	1,214	500	714	1.0%	1.5%	2.5%
Iceland	244	13	230	0.2%	2.5%	2.7%
Ireland	14,386	10,066	4,320	10.7%	3.8%	14.5%
Italy	71,204	40,272	30,932	3.2%	2.4%	5.7%
Japan	328,617	238,798	89,818	5.5%	1.9%	7.4%
Korea	55,694	41,563	14,132	10.2%	3.2%	13.4%
Luxembourg	5,841	5,083	758	26.3%	3.9%	30.2%
Mexico	8,414	4,010	4,404	0.8%	0.9%	1.7%
Netherlands	39,154	22,584	16,570	5.6%	4.1%	9.7%
New Zealand	1,667	702	966	1.3%	1.8%	3.0%
Norway	7,264	3,360	3,905	2.2%	2.5%	4.7%
Poland	4,663	1,484	3,179	1.0%	2.0%	3.0%
Portugal	6,927	3,896	3,031	3.4%	2.5%	5.9%
Slovak Republic	574	190	384	1.0%	1.9%	2.9%
Spain	35,324	18,264	17,060	3.0%	2.7%	5.7%
Sweden	18,295	11,559	6,736	4.8%	2.3%	7.1%
Switzerland	35,680	21,087	14,593	8.1%	4.8%	12.8%
Turkey	2,632	423	2,210	0.2%	1.2%	1.4%
United Kingdom	215,195	148,219	66,976	10.2%	3.9%	14.1%
United States	1,055,045	499,628	555,417	5.0%	5.5%	10.5%
Total	\$2,359,343	\$1,302,741	\$1,056,602	5.0%	3.7%	8.7%

Sources:

1. OECD: Insurance Statistics Yearbook 1992-1999, Paris, 2001.
2. OECD: 1999 Main Economic Indicators, Paris, 2001.

Instrumentation

A) Dependent Variables:

1) Insurance Penetration: Insurance Penetration is one of the most commonly used indicators of insurance development in a given country. It refers to the ratio of direct gross insurance premiums to gross domestic product (GDP). Insurance penetration reflects the relative importance of the insurance industry in the country's economy, and captures changes in demand for insurance services. It is well recognized that deeper insurance penetration is often associated with more developed and mature insurance markets, and is frequently observed in developed countries. It is worth noting that the average value of this ratio for OECD countries was 7.3% in 1999, while it was only 1.3% for Arab countries. See **Tables 3** and **5**, on pages 61 and 63, respectively.

Although this measure does not give a complete picture of the insurance output because of the considerable variation in premium rates between different countries, it has the advantage of not being influenced by currency factors. Because the unit of measurement does not affect this variable, its information value is therefore substantially enhanced.

To measure the contribution of insurance companies to the financing of the national economy, it will suffice to compare the increase in technical reserves and provisions (or assets) of the insurance sector with the economy's financial requirements. However, such data generally do not exist and there has been a lack of quantitative evidence on this subject in both developed and developing countries.

The variable of insurance penetration is measured for the following three models:

Model 1: Life insurance penetration, i.e. the ratio of total direct life insurance premiums to gross domestic product (GDP).

B) Independent Variable:

Islamic Religious Beliefs: Religious beliefs may be regarded as a *trait characteristic* that is stable over time and is not easily influenced by situational factors.

This quasi-independent variable indicates whether a country is predominantly Islamic or not. It is proposed that predominant Islamic religious beliefs in a given country could be used to explain the development, or lack of it, in its insurance industry.

For Islamic religious beliefs, a value of one will be assigned if more than 50 percent of a country's population is Muslim; otherwise, a zero value will be assigned.

Applying this definition to the above chosen two sample groups, a value of one will be assigned to all of the countries in the Arab states group (level-1) since all of them are predominantly Islamic. A value of zero will be assigned to all of the countries in the OECD states group (level-2) since almost all of them are predominantly non-Islamic.

C) Reliability and Validity of the Instruments:

Reliability: All of the above stated instruments have face reliability. Further, they have been producing consistent and error free measurements in the past. Insurance penetration and insurance density are very well known insurance benchmarks for many past decades; they are mainly used to indicate the degree of insurance development in a given country. They are also used as indicators of the demand for insurance in a given country.

All of the above instruments have been used in previous studies of similar nature and they have proved to be reliable measures. Such research studies include: Zelizer (1979), Wasow (1986), Browne and Kim (1993), and Meng (1994).

- A) **Insurance Penetration Models:** Model 1: Life Insurance Penetration.
 Model 2: Non-life Insurance Penetration.
 Model 3: Gross Premiums Penetration.
- B) **Insurance Density Models:** Model 4: Life Insurance Density.
 Model 5: Non-life Insurance Density.
 Model 6: Gross Premiums Density.

The scores obtained fit the requirements of a parametric procedure. Therefore, a between-subjects (independent samples, two-tailed) *t*-test is appropriate.

The assumptions for applying the *t*-test are as follows:

1. Homogeneity of variance in the two selected sample groups, i.e. the variances (standard deviations) within each of the two groups are roughly equal.
2. Independence of the observations, and
3. Normal distribution of the dependent variable scores in the population to which they should generalize.

All of the above-mentioned assumptions are being met here by the particulars of this research study.

A comparison between the means of the scores of the two sample groups was then carried out, for each of the above six models, in order to verify the existence of a statistically significant relationship. The significance of the relationship was determined through the statistical *t*-test, which was then checked for effects size through the computation of R^2 i.e. Multiple Correlation Squared: Measure of Strength of Relationship. For detailed statistical analyses of the data, see **Appendix D**.

between Islamic religious beliefs and insurance development as measured by life insurance penetration in this model may be construed as an adverse one. The statistic was also found to be highly significant at $\alpha = .05$ and at $\alpha = .01$ with a negative coefficient of 0.96.

Model 2: Non-life Insurance Penetration:

The relationship between direct non-life insurance premiums and gross domestic product is assumed to be linear. This assumption is based on the findings of previous research in this area. The mean of the scores for the Arab states group (level-1) was found to be 1.31%, while the mean of the scores for the OECD states group (level-2) was found to be 2.72%. The *t*-test statistic of -38.52 has a negative coefficient, which means that the relationship between Islamic religious beliefs and insurance development as measured by non-life insurance penetration in this model may be construed as an adverse one. The statistic was found to be highly significant at $\alpha = .05$ and at $\alpha = .01$ with a negative coefficient of 0.97.

Model 3: Gross Premiums Penetration:

The relationship between direct gross premiums and gross domestic product is assumed to be linear. This assumption is based on the findings of previous research in this area. The mean of the scores for the Arab states group (level-1) was found to be 1.26%, while the mean of the scores for the OECD states group (level-2) was found to be 7.29%. The *t*-test statistic of -44.31 has a negative coefficient, which means that the relationship between Islamic religious beliefs and insurance development as measured by gross premium penetration in this model may be construed as an adverse one. The statistic was also found to be highly significant at $\alpha = .05$ and at $\alpha = .01$ with a negative coefficient of 0.98.

between Islamic religious beliefs and insurance development as measured by life insurance density in this model may be construed as an adverse one. The statistic was also found to be significant at $\alpha = .05$ and at $\alpha = .01$ with a negative coefficient of 0.66.

Model 5: Non-life Insurance Density:

The relationship between non-life insurance per capita and gross domestic product per capita is assumed to be non-linear, therefore, a natural logarithms scale was used in measuring the variables. This assumption is based on the findings of previous research in this area. The mean of the scores for the Arab states group (level-1) was found to be 3.09, while the mean of the scores for the OECD states group (level-2) was found to be 6.07. The *t*-test statistic of -7.51 has a negative coefficient, which means that the relationship between Islamic religious beliefs and insurance development as measured by non-life insurance density in this model may be construed as an adverse one. The statistic was found to be significant at $\alpha = .05$ and at $\alpha = .01$ with a negative coefficient of 0.55.

Model 6: Gross Premiums Density:

The relationship between gross premiums per capita and gross domestic product per capita is assumed to be non-linear; therefore, a natural logarithms scale was used in measuring the variables. This assumption is based on the findings of previous research in this area. The mean of the scores for the Arab states group (level-1) was found to be 3.23, while the mean of the scores for the OECD states group (level-2) was found to be 6.80. The *t*-test statistic of -7.57 has a negative coefficient, which means that the relationship between Islamic religious beliefs and insurance development as measured by life insurance density in this model may be construed as an adverse one. The statistic was also found to be significant at $\alpha = .05$ and at $\alpha = .01$ with a negative coefficient of 0.55.

C) Statistical Analyses of the Insurance Density Models:

(After Increasing the Power of the Design):

Model 4P: Life Insurance Density:

The relationship between life insurance per capita and gross domestic product per capita is assumed to be non-linear, therefore, a natural logarithms scale was used in measuring the variables. This assumption is based on the findings of previous research in this area. The mean of the scores for the Arab states group (level-1) was found to be 0.99, while the mean of the scores for the OECD states group (level-2) – after increasing the power of the design – was found to be 6.68. The *t*-test statistic of – 11.68 has a negative coefficient, which means that the relationship between Islamic religious beliefs and insurance development as measured by life insurance density in this model may be construed as an adverse one. The statistic was also found to be very significant at $\alpha = .05$ and at $\alpha = .01$ with a negative coefficient of 0.77. Increasing the power of the design has resulted in an improvement on the previous score by 11 basis points.

Model 5P: Non-life Insurance Density:

The relationship between non-life insurance per capita and gross domestic product per capita is assumed to be non-linear, therefore, a natural logarithms scale was used in measuring the variables. This assumption is based on the findings of previous research in this area. The mean of the scores for the Arab states group (level-1) was found to be 3.09, while the mean of the scores for the OECD states group (level-2) – after increasing the power of the design – was found to be 6.37. The *t*-test statistic of – 8.44 has a negative coefficient, which means that the relationship between Islamic religious beliefs and insurance development as measured by non-life insurance density in this model may be construed as an adverse one. The statistic was also found to be very significant at $\alpha = .05$

2. The 18 Arab countries selected for this study are true representatives of the population of Islamic religious beliefs worldwide.
3. The 30 OECD countries selected for this study are true representatives of the population of non-Islamic religious beliefs worldwide.
4. Insurance Penetration and Insurance Density are true measures of the dependent variables as they relate to insurance development.

Limitations of the Study

The main limitations of this study may be summarized as follows:

1. The potential for error in sampling is present in this research as in all studies requiring samples. This study may further contain errors resulting from incomplete measurement techniques. As a result, caution must be exercised in the interpretation of results. However, the study hypothesis were tested at ($\alpha = .05$ and $\alpha = .01$), confidence levels which are widely used in studies of similar nature. Further, the statistical techniques utilized were basic and did not place any severe limitations on the analyses.
2. This dissertation is based on *archival research*. The advantage of archival research is that it allows access to behaviors that would otherwise be unobservable. However, archival research presents some disadvantages, the main of which is that the accuracy and appropriateness of the data depend entirely on the people who

Summary

In sum, it can be concluded that the methodology used in this study is the application of quantitative statistical analysis to historical economic and demographic data from two economically homogenous groups. The basic hypothesis is that Islamic religious beliefs may adversely affect insurance development in a given country. A one-way, between-subjects (groups) design was chosen to validate this hypothesis. One explanatory variable and two well-known insurance development benchmarks: insurance penetration and insurance density were, selected as dependent variables.

The results of the methodology used to analyze the data confirm the existence of statistically significant adverse relationship between the means of the scores of the two groups for all of the six models chosen for measuring the dependent variables.

Therefore, the results of the present study – after taking into consideration all of the above stated assumptions and limitations – indicate, as has been hypothesized, that Islamic religious beliefs apparently have significant adverse influence in insurance development – as measured by insurance penetration and insurance density – in a given country. This is more apparent with life insurance than with non-life insurance.

This conclusion is consistent with results attained by previous research in this area. Such research studies include: Zelizer (1979), Wasow (1986), Browne and Kim (1993), Meng (1994), and Nik-Mat (1995).

In strong support of this conclusion one might cite the case of Turkey who is a long time member of the OECD countries, which is regarded as a sort of a “rich man’s club.” Since Turkey is a predominantly Islamic country, its insurance development as measured

CHAPTER FOUR

FINDINGS, RESULTS, AND ANALYSES

The main purpose of this chapter is to report the findings and results of the six models used for testing the main hypothesis of the dissertation presented in chapter three. Further, this chapter will present analyses of the following:

- 1 The role of the insurance industry in economic development.
- 2 The relationship between insurance functions and a developing country's needs and difficulties in economic growth.
- 3 Components of integrated government policies for guaranteeing a well-developed insurance market to fulfill all of the functions of insurance.

Findings and Results

The primary objective of this dissertation is to analyze the relationship between insurance development and Islamic religious beliefs as an independent variable. The basic proposed hypothesis is that Islamic religious beliefs adversely influence insurance development in a given country.

The methodology used in this study is the application of quantitative statistical analysis to historical economic and demographic data from two economically homogenous groups. A one-way, between-subjects (groups) design was used to validate the proposed hypothesis.

A) Findings and Results Relevant to Insurance Penetration Models:

Insurance penetration is one of the most commonly used indicators of insurance development in a given country; it refers to the ratio of insurance premiums to gross domestic product (GDP). Insurance penetration reflects the relative importance of the insurance industry in the country's economy, and captures changes in demand for insurance services. It is well-recognized fact that deeper insurance penetration is often associated with more mature insurance markets, which is frequently observed in developed countries.

Finding (I): Relevant to Model 1: Life Insurance Penetration:

Life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states. $[(M_{ARAB} = 0.24\%, M_{OECD} = 4.58\%), t = -36.00, R^2 = 0.96, p < .05 \text{ \& } p < .01]$

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured in this model by life insurance penetration.

Finding (II): Relevant to Model 2: Non-Life Insurance Penetration:

Non-life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states. $[(M_{ARAB} = 1.31\%, M_{OECD} = 2.72\%), t = -38.52, R^2 = 0.97, p < .05 \text{ \& } p < .01]$

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured in this model by non-life insurance penetration.

Finding (V): Relevant to Model 5: Non-Life Insurance Density:

Non-life insurance density was found to be higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.09, M_{OECD} = 6.07), t = -7.51, R^2 = 0.55, p < .05 \text{ \& } p < .01]$$

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured in this model by non-life insurance density.

Finding (VI): Relevant to Model 6: Gross Premiums Density:

Gross premiums density was found to be higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.23, M_{OECD} = 6.80), t = -7.57, R^2 = 0.55, p < .05 \text{ \& } p < .01]$$

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured in this model by gross premiums density.

The results for all of the above three insurance density models are consistent with results attained by previous research in this area. Such research studies include: Zelizer (1979), Wasow (1986), Browne & Kim (1993), Meng (1994), and Nik-Mat (1995).

C) Findings and Results Relevant to Insurance Density Models:

(After Increasing the Power of the Design):

In order to improve the robustness of the results, the technique of further limiting the sample was used. This technique leads to the production of powerful and convincing relationship through minimizing the error variance i.e. the differences among scores found within each condition.

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured in this model by gross premiums density.

The increase in the power of the design has resulted in a significant improvement in the measure of the strength of the relationship (R^2), in all of the above three insurance density models and hence improved the robustness of the results.

The results for all of the above three insurance density models – after increasing the power of the design – are consistent with results attained by previous research in this area. Such research studies include: Zelizer (1979), Wasow (1986), Browne and Kim (1993), Meng (1994), and Nik-Mat (1995).

Further, this research shows that in estimating the development of insurance, the type of dependent variable used makes a difference. The models using insurance density as a dependent variable tend to explain less of the variability, as can be seen from comparatively low R^2 's, while the models using insurance penetration produce much higher R^2 's (the same is true for t -test values). This phenomenon reflects the fact that insurance development as measured in terms of dollar amount rises with the economic level of activity. The density of insurance reveals the significance of insurance development as compared to the economic level, and can vary a lot from one country to another. In other words, the density of an insurance industry is more subject to country specific factors, such as the path of social economic change, unique cultural tradition, and the domestic policies adopted in relation to insurance development.

Different as these two patterns are, they both stress the importance of building a financial infrastructure that can meet the needs of development. In other words, to break the “vicious circle”, a more efficient and more diversified financial market is needed.

Mobilizing Savings for Growth:

Insurance organizations are among the financial intermediaries that mobilize savings and channel other funds into the capital markets. Although the insurance industry is much smaller than banking in some countries, the importance of insurance in forming a mature and stable financial system is still significant.

Forming a Diversified Financial Market:

Having noticed financial systems in some developing countries have failed because of a lack of efficiency and a heavy reliance on credit-issuing institutions, economists have emphasized the need to deepen the financial markets in developing countries. One approach is the building of diversified financial systems by encouraging the use of different types of credit instruments and the emergence of non-bank financial intermediaries.

The insurance industry is very important in building a diversified modern financial system for the following reasons:

1. Life insurance policies as credit instruments, or financial assets to individuals, are different from other major instruments, especially saving accounts in the banking system. This is because life insurance policies are usually purchased for long-term use, and cashing in a life insurance policy may cause an economic loss; in addition, the cash value of an insurance policy may not be as clearly stated as the values of other financial

insurance industry can stimulate the capital market. These effects benefit both insured individuals and the economy as a whole.

Supplement to Social Welfare Programs:

Some United Nations' studies have noticed, among other things, the importance of insurance in increasing the social stability of developing countries. This function can be seen in the following forms of insurance:

1. Compulsory workers' compensation and/or employers' liability;
2. Employee benefit packages, including such things as health insurance, industrial life, pension annuities, and so on;
3. Life insurance, health insurance, and even property-liability insurance purchased by individuals; and
4. Property-liability insurance purchased to provide protection for personal assets and business property.

In traditional economies with an extended family structure, which is often seen in the developing world, older family members usually rely on the younger members' current income. Government-sponsored social protection and security funds are either scarce or much less than sufficient to meet the ever-increasing social burden as the family support structure collapses with the evolution of economic development. Natural hazards and various accidents further constitute severe factors that threaten fledgling businesses, and governments may not have the ability to provide financial assistance. When not addressed well, these problems can add to the political and economic instability of a country.

can be expected to grow even more dramatically. For example, at the end of 1990 in Korea, insurance employment consisted of less than one hundred thousand people, while at the end of 1999 the employment in the insurance industry had increased to over 500,000 people, including around 400,000 in insurance agencies. (OECD: Insurance Statistics Yearbook 1992-1999.)

Saving the Precious Foreign Exchange:

For most developing countries, it is a difficult task to retain the foreign exchange that they possess. International insurance transactions arising from invisible trade and from foreign insurance operations through their branches can be a major component of a developing country's balance of payments. For this reason, the United Nations Conference on Trade and Development (UNCTAD) emphasizes the role of insurance industry in a developing country for retaining foreign exchange and for supporting international trade. Considering the trend in a developing country's economic growth through participation in international trade and production, the lack of insurance services should be addressed.

Government Policies in Insurance Development

We have described above the various contributions that a well-developed insurance industry can make to a developing country's economic growth and social welfare.

Most developing countries, including some of the richer newly industrialized countries, still face development difficulties. Various problems may exist, including the

Insurance Education:

UNCTAD emphasized the key role of insurance and risk management education. In addition, the empirical studies of Outreville (1990), Browne and Kim (1993), and Meng (1994), all noticed the positive relationship between education and insurance development. It is not only that the most essential element in the modern insurance industry is the highly educated, experienced, and skilled professional work force, but also that education can make people more aware of the functions of insurance services in their business and individual lives. While increasing the level of general education is beyond the range of promoting insurance, the establishment of a country's own insurance education system, both in terms of continuing professional education and insurance and risk management courses in college curriculums, is necessary for the long-term development of a healthy insurance industry, as well as the long-term demand for insurance.

Shaping and Administering the Insurance Market:

Because insurance companies are responsible for the financial protection of their numerous policyholders (and possibly the policyholders' beneficiaries), the failure of an insurance company will leave these people and businesses unprotected, and the impact can be disastrous. The health and attractiveness of the insurance industry are so important that most countries have decided that insurance industries need to be regulated and monitored by government agencies to ensure that the marketing, underwriting, and investment activities of the industry will not have a negative impact. Government's responsibilities in this respect include the following:

Insurance Legislation: Insurance laws are necessary to ensure efficient regulation of the industry and compatibility of local insurance laws with international markets. They

professional personnel. The lesson for developing countries is that insurance legislation and regulation should go hand in hand; without efficient supervision, insurance legislation will have little influence on market behavior and activities.

Reinsurance Market: The presence of local reinsurance increases the capacity and stability of an open insurance industry. In countries where local insurance markets contain only a few companies, governments may find it necessary to sponsor the creation of a relatively neutral reinsurance organization to avoid conflicts of interest among insurers and to increase the local risk retention capacity.

Other Policy Considerations: Different approaches for regulating life insurance and property-liability insurance should be considered. Life insurance differs from property-liability insurance in its purposes, exposures, lengths of policy period, cash-flow patterns, portfolio characteristics, and investment activities. Therefore, the operations of these two sectors of insurance industry need to be governed by different approaches. In cases where composite companies are allowed, the operations and accounting activities of the two lines must be separated to satisfy different regulatory requirements.

Encouraging Cooperative or Mutual Insurance Organizations:

The capital requirements of cooperative or mutual insurance organizations can be met when sufficient contributors are available. Further, because of the non-profit-like nature of this type of organization, “it is run for their [the policyholders’] exclusive benefit”, and “sells insurance at cost.”

Therefore, public confidence can be built quickly, and so these types of operations are especially appropriate for developing countries, where government regulation and its

1. Defining different asset-holding structures for life and property-liability insurance organizations to guarantee their unique functions (which differ from those of the banking industry); and
2. Maintaining the efficiency of insurance operations and thus the attractiveness of insurance services (for example, in life insurance, a positive and appropriate real interest rate should be maintained).

Insurance-Related Tax Policies:

To promote insurance, reasonable and well-designed tax policies are needed to encourage capital accumulation by the insurance organization and the purchase of insurance by the public. For example, in some developing countries, practices of attaching sales tax to the sale of insurance, in both life and property-liability lines have been observed by UNCTAD. Another study made by UNCTAD pointed out that “if a government decides to use tax policy to encourage life insurance development, it might be most appropriate to view such as a part of a total package of social welfare and, in the process, examine other economic endeavors to see if they too are deserving of encouragement via tax policy.” In the same study, it was further pointed out that taxes attached to the sale of life insurance products, especially those that are purchased to fund private pension plans, hurt the interest of the beneficiaries and dramatically reduce these products’ attractiveness as individual financial assets.

On the other hand, tax saving can be made one of the motives for individuals and organizations to buy insurance. For example, it has been noted that, in the context of the United States tax system, the purchase of life insurance may result in tax deferral. In

speed up economic growth is not only possible but also necessary, as has been witnessed in several successful cases, such as South Korea.

An integrated set of policies is needed to use insurance to encourage economic growth and to provide economic protection for the public. Some of the components of government policies toward the development of insurance were then discussed, with emphasis on the insurance industry as part of a diversified financial system. Considering the large differences with respect to the stages, sizes, and types of economies, it is impractical to provide standardized policies for all countries. Rather, it is hoped to draw attention to the overall effects of these policy components, and to stress the need for a developing country's governmental authorities to draft an overall and integrated package of policies. It is believed that such integrated policies will promote an efficient, healthy, and stable insurance industry.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, DISCUSSION, RECOMMENDATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

The material presented in this chapter is divided into five main sections. The first section summarizes the current study. Section two contains the conclusions; the interpretations of the findings related to the literature. Section three contains the discussion relating to the future implications of the study's findings. Section four contains the recommendations for promoting insurance in predominantly Islamic countries. The fifth and final section contains suggestions for future research.

The main findings and results of the dissertation may be summarized as follows:

A) Findings and Results Relevant to Insurance Penetration Models:

Finding (I): Relevant to Model 1: Life Insurance Penetration:

Life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{\text{ARAB}} = 0.24\%, M_{\text{OECD}} = 4.58\%), t = -36.00, R^2 = 0.96, p < .05 \text{ \& } p < .01]$$

Finding (II): Relevant to Model 2: Non-Life Insurance Penetration:

Non-life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{\text{ARAB}} = 1.31\%, M_{\text{OECD}} = 2.72\%), t = -38.52, R^2 = 0.97, p < .05 \text{ \& } p < .01]$$

Finding (III): Relevant to Model 3: Gross Premiums Penetration:

Gross Premiums penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{\text{ARAB}} = 1.26\%, M_{\text{OECD}} = 7.29\%), t = -44.31, R^2 = 0.98, p < .05 \text{ \& } p < .01]$$

Finding (V)P: Relevant to Model 5P: Non-Life Insurance Density:

Non-life insurance density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.09, M_{OECD} = 6.37), t = -8.44, R^2 = 0.63, p < .05 \text{ \& } p < .01]$$

Finding (VI)P: Relevant to Model 6P: Gross Premiums Density:

Gross premiums density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.23, M_{OECD} = 7.30), t = -9.74, R^2 = 0.70, p < .05 \text{ \& } p < .01]$$

The increase in the power of the design has resulted in a significant improvement in the measure of the strength of the relationship (R^2), in all of the above three insurance density models and hence improved the robustness of the results.

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured by all of the above six insurance penetration and density models. This is more evident with life insurance than with non-life insurance.

This conclusion is consistent with results attained by previous research in this area. Such research studies include: Zelizer (1979), Wasow (1986), Browne and Kim (1993), Meng (1994), and Nik-Mat (1995).

The insurance business was initially rejected by the Muslim jurists who participated in the First International Conference on Islamic Economics held at Mecca – Saudi Arabia, in 1976. However, the Islamic *Fiqh* (Jurisprudence) Council, at its second session held at Mecca in 1986, adopted a more moderate view of insurance. The Council recognized mutual types of insurance, but not other types.

Broadly speaking, religious leaders and scholars in most Islamic countries continue to question the conformity of some insurance products with *Shari'ah*. Some even argue that in addition to the speculative aspects of insurance, the insurers often exploit the insured.

According to Haberbeck (1987:138,141), the chief objection to insurance for profit (from an Islamic point of view) rests on the *gimar/maysir* (gambling) element, which is currently part of, but not necessary on *gharar* (uncertainty) and *juhala* (ignorance) elements, which also exist in mutual insurance. Other objections or reservations about insurance are related to ownership, the rights of the policyholders, investments (fixed interest-carrying programs), policy wording, rating, and concepts of probability and insurable interest.

The methodology used in this study is the application of quantitative statistical analysis to historical economic and demographic data from two economically homogenous groups. A one-way, between-subjects (groups) design was used to validate the proposed hypothesis.

The chosen design was used to analyze the database from two economically homogenous groups, namely: Group-1: 18 Arab countries, as representative of countries with predominantly Islamic religious beliefs, and Group-2: 30 OECD countries, as representative of countries with predominantly non-Islamic beliefs. One explanatory

economic development in developing countries. These studies were: Wasow (1986), Beenstock, Dickson, and Khajuria (1988), Kim (1988), Truett and Truett (1990), Outreville (1990), Outreville (1991), Brown and Kim (1993), Meng (1994), and Nik-Mat (1995). Almost all of these studies applied correlation designs to cross-country analysis of insurance development data.

One major drawback of previous research in this area; is the lack of theoretical model underlying the empirical work. As a result, prior studies have generally employed several variables selected simply because the authors thought they were important. Other technical weaknesses restricting the robustness of these studies include insufficient treatment of differences among countries, lack of statistical analyses of correlation among the variables employed, potential for error in sampling, incomplete measurement techniques, and potentially biased estimations.

The second section of the chapter contained review of studies on the relationship between insurance and Islamic beliefs. The theoretical framework for conducting research in this area lies in the premise that the majority of Islamic scholars, relying on the teachings of the *Qur'an* and the *Sunnah*, have prohibited all types of conventional insurance contracts on the grounds that they contain elements of *gharar* (uncertainty), *juhala* (ignorance), *maysir/gimar* (gambling), and *riba* (usurious interest), all of which are contrary to Islamic teachings. Only cooperative Islamic insurance companies operating in accordance with Islamic principles (*Shari'ah*) are acceptable.

The research in this area is very limited indeed. There were only three recent studies dealing with the relationship between insurance and Islamic beliefs, namely: Rispler

The fourth and final section of this chapter presented detailed comments and critiques of the literature relating to this dissertation. This section discussed around ten comments on and/or critiques of the existing literature.

The chapter was then concluded with a summary of the review of the literature relevant to the field of the dissertation. This summary outlined how the current study will attempt to overcome some of the shortcomings of the previous empirical research and how it will attempt to fill-in part of the gap that currently exist in the literature in this field.

Research Methods and Procedures:

The methodology used in this study is the application of quantitative statistical analysis to historical economic and demographic data from two economically homogenous groups. A one-way, between-subjects (groups) design was used to validate the proposed hypothesis.

One explanatory variable and two well-known insurance development benchmarks: insurance penetration and insurance density were, selected as dependent variables.

The participants' economic and demographic data were collected from various credible sources. The instrumentation used were as follows:

A) Dependent Variables:

1. Insurance Penetration.
2. Insurance Density.

B) Quasi-Independent Variable: Islamic Religious Beliefs.

The quasi-independent variable of Islamic religious beliefs is a between-subjects factor, which may be confounded by many other participants variables, such as the level of economic development, per capita income, price of insurance, and so on. To control these

The main findings and results of the dissertation may be summarized as follows:

A) Findings and Results Relevant to Insurance Penetration Models:

Finding (I): Relevant to Model 1: Life Insurance Penetration:

Life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 0.24\%, M_{OECD} = 4.58\%), t = -36.00, R^2 = 0.96, p < .05 \& p < .01]$$

Finding (II): Relevant to Model 2: Non-Life Insurance Penetration:

Non-life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 1.31\%, M_{OECD} = 2.72\%), t = -38.52, R^2 = 0.97, p < .05 \& p < .01]$$

Finding (III): Relevant to Model 3: Gross Premiums Penetration:

Gross Premiums penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 1.26\%, M_{OECD} = 7.29\%), t = -44.31, R^2 = 0.98, p < .05 \& p < .01]$$

B) Findings and Results Relevant to Insurance Density Models:

Finding (IV): Relevant to Model 4: Life Insurance Density:

Life insurance density was found to be higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 0.99, M_{OECD} = 6.13), t = -9.53, R^2 = 0.66, p < .05 \& p < .01]$$

Finding (V): Relevant to Model 5: Non-Life Insurance Density:

Non-life insurance density was found to be higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.09, M_{OECD} = 6.07), t = -7.51, R^2 = 0.55, p < .05 \& p < .01]$$

The increase in the power of the design has resulted in a significant improvement in the measure of the strength of the relationship (R^2), in all of the above three insurance density models and hence improved the robustness of the results.

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured by all of the above six insurance penetration and density models. This is more evident with life insurance than with non-life insurance.

This conclusion is consistent with results attained by previous research in this area. Such research studies include: Zelizer (1979), Wasow (1986), Browne and Kim (1993), Meng (1994), and Nik-Mat (1995).

Conclusions

In this section, the interpretations of the study's findings are discussed in connection with the relevant literature in the field.

The main findings and results of the dissertation may be summarized as follows:

A) Findings and Results Relevant to Insurance Penetration Models:

Finding (I): Relevant to Model 1: Life Insurance Penetration:

Life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$[(M_{ARAB} = 0.24\%, M_{OECD} = 4.58\%), t = -36.00, R^2 = 0.96, p < .05 \text{ \& } p < .01]$

production of powerful and convincing relationship through minimizing the error variance i.e. the differences among scores found within each condition.

Finding (IV)P: Relevant to Model 4P: Life Insurance Density:

Life insurance density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 0.99, M_{OECD} = 6.68), t = -11.68, R^2 = 0.77, p < .05 \text{ \& } p < .01]$$

Finding (V)P: Relevant to Model 5P: Non-Life Insurance Density:

Non-life insurance density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.09, M_{OECD} = 6.37), t = -8.44, R^2 = 0.63, p < .05 \text{ \& } p < .01]$$

Finding (VI)P: Relevant to Model 6P: Gross Premiums Density:

Gross premiums density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.23, M_{OECD} = 7.30), t = -9.74, R^2 = 0.70, p < .05 \text{ \& } p < .01]$$

The increase in the power of the design has resulted in a significant improvement in the measure of the strength of the relationship (R^2), in all of the above three insurance density models and hence improved the robustness of the results.

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured by all of the above six insurance penetration and density models. This is more evident with life insurance than with non-life insurance.

Insurance as a whole is a relatively “new” activity in most predominantly Islamic countries. The introduction of Western-style insurance into the Islamic world should therefore be perceived as a revolutionary step, or as a “major change.” The ideal Islamic solution represents a lesser degree of change; it combines familiar Islamic elements with others. This should render the Islamic solution psychologically easier to tolerate. In practice, however, predominantly Islamic countries, almost with no exception, adopted the Western-style insurance. The Islamic insurance companies are still few in number.

Thus, a major change was indeed imported into most predominantly Islamic countries. Yet no psychological or cultural preparation was provided to the public. Undoubtedly, there is a need to accompany each major change with a psychological/cultural change. The psychological unprepared-ness of the public to welcome insurance manifests itself in the fact that most of the insurance is still purchased by governmental sectors, not by individuals. It also shows up in the low ratio of life insurance policies purchased in the Islamic world relative to other countries of similar size and similar standard of living. Life insurance creates for Muslims a greater theological problem than other types of insurance. Several references suggested that only by educating the public and informing it what insurance is all about could this psychological gap be filled.

Sometimes the unpopularity of life insurance is blamed on the existence of a too small middle class in predominantly Islamic countries. It has been suggested that the middle class is essential for the acceptance of any reform. However, since other types of insurance were adopted with fewer inhibitions, it seems that it is the psycho-religious taboo against life insurance, which has yet to be overcome.

The ideal Islamic solution represents the golden mean between Western-style insurance (which is according to Muslim scholars “capitalistic,” and operates on several principles which the *Shari’ah* rejects), and the security provisions provided by the *Shari’ah* transactions and by the social responsibility of members within the Islamic community.

The search for the golden mean is characteristic of Islamic thought. It is also apparent in the tremendous need to maintain that Islamic economic thought is neither socialist nor capitalist, rather a third and better way, and that it contains only the benefits of socialism and capitalism, not their detriments. The same golden path was presumably found in PLS banks.

However, the few Islamic insurance companies, which do exist, provide Muslims with a feasible alternative to Western-style insurance; an alternative that despite all criticism is workable and religiously approved.

It is difficult to predict what percentage of Muslims will shift from regular insurance companies to the Islamic ones, once the latter acquire more experience and a good reputation. It is also hard to estimate how many Muslims, who for religious motives never owned insurance policies, will join the Islamic insurance companies.

In conclusion of this section, it can be stated the study’s main finding that Islamic religious beliefs adversely affect insurance development in a given country, is consistent with results attained by previous research in this area. Such research studies include: Zelizer (1979), Wasow (1986), Browne and Kim (1993), Meng (1994), and Nik-Mat (1995). All of these research studies (except Zelizer, 1979) were reviewed in chapter two of this dissertation.

Finding (V): Relevant to Model 5: Non-Life Insurance Density:

Non-life insurance density was found to be higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.09, M_{OECD} = 6.07), t = -7.51, R^2 = 0.55, p < .05 \text{ \& } p < .01]$$

Finding (VI): Relevant to Model 6: Gross Premiums Density:

Gross premiums density was found to be higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.23, M_{OECD} = 6.80), t = -7.57, R^2 = 0.55, p < .05 \text{ \& } p < .01]$$

C) Findings and Results Relevant to Insurance Density Models:**(After Increasing the Power of the Design)**

In order to improve the robustness of the results, the technique of further limiting the sample was used. This technique leads to the production of powerful and convincing relationship through minimizing the error variance i.e. the differences among scores found within each condition.

Finding (IV)P: Relevant to Model 4P: Life Insurance Density:

Life insurance density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 0.99, M_{OECD} = 6.68), t = -11.68, R^2 = 0.77, p < .05 \text{ \& } p < .01]$$

Finding (V)P: Relevant to Model 5P: Non-Life Insurance Density:

Non-life insurance density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 3.09, M_{OECD} = 6.37), t = -8.44, R^2 = 0.63, p < .05 \text{ \& } p < .01]$$

Similarly, the average insurance density for Arab countries for life insurance, non-life insurance, and gross premiums in 1999 amounted to USD \$3.80, \$18.10, and \$22.00, respectively, while the corresponding averages for the OECD countries amounted to USD \$1,119, \$837, and \$1,957, respectively. See **Tables 3, 4, 5, and 6** on pages 61, 62, 63, and 64, respectively.

If Muslim peoples, already over one and a half billion in number, are to catch up with the achievements of the developed countries, they need to reevaluate the techniques and methods they employ in conducting their economic affairs. Merely copying other economic models or simply rejecting them cannot be the adequate answer to their problems. Such emulation has not been successful in the past and is unlikely to be effective in the future.

However, there are concepts and economic disciplines and models that have proven to be useful in the developed world. If they can be adjusted to comply with the needs as well as laws, principles, ideals and cultures of predominantly Islamic countries, they may be worth studying for possible application in the Islamic world.

The insurance industry has been shown to be a necessary and valuable factor in the economies of the developed countries. With some modifications, it may also prove to be indispensable and a valuable tool to the development and expansion of the economies of predominantly Islamic countries.

However, Islamic scholars came up with another solution to the problem of “insurance within or outside Islam.” The solution, generally speaking, is adjusting insurance to the nature of the *Shari'ah* rather than vice versa.

3. This procedure can be adopted by all those situations in which insurance is spread over a long period, such as life insurance, or those instances where one and the same insured keeps on renewing the contract, as, for example, the third party insurance of vehicles or insurance of buildings, machines and ships. Some contracts of insurance are of an extremely short durations, related to a temporary phenomenon such as air travel or goods on high seas, etc.

For these types of insurance, the government may establish a separate trust, whose function should be to invest the premiums payment made by the policyholders and create a reserve fund. The money so invested and profit accruing there-from would be the property of the trust. These should be used to meet the obligations on account of claims. Any other policyholder should neither be paid the principal nor profit from this fund, but the installments paid should be treated as a subscription in favor of the trust.

Takaful – Islamic Insurance:

Takaful, an Arabic term meaning joint guarantee, has further been suggested by some Islamic scholars as an alternative to conventional insurance. *Takaful* is a pact among a group of members or participants who agree to jointly guarantee themselves against loss or damage that may be inflicted upon any of them, and as defined in the pact. Should any member or participant suffer a catastrophe or disaster, he/she would receive a certain sum of money or financial benefit from a fund, as also defined in the pact, to help him/her to meet the loss or damage.

In general, *takaful* business is divided into two classes: (a) family *takaful* business, and (b) general *takaful* business. Under the family *takaful* business, the participants are

the premiums, and the profit would be used to enlarge the fund as well as to make payments to the compensatory claims.

- The *takaful* company has to maintain, as many funds as there are risk types.

By the end of 1995, there were an estimated 26 *takaful* companies, with a total of \$300 million dollars of premiums within the Arab countries. The total number of *takaful* companies worldwide was around 50.

Recommendations

The main findings and results of the dissertation may be summarized as follows:

A) Findings and Results Relevant to Insurance Penetration Models:

Finding (I): Relevant to Model 1: Life Insurance Penetration:

Life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 0.24\%, M_{OECD} = 4.58\%), t = -36.00, R^2 = 0.96, p < .05 \text{ \& } p < .01]$$

Finding (II): Relevant to Model 2: Non-Life Insurance Penetration:

Non-life insurance penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 1.31\%, M_{OECD} = 2.72\%), t = -38.52, R^2 = 0.97, p < .05 \text{ \& } p < .01]$$

Finding (III): Relevant to Model 3: Gross Premiums Penetration:

Gross Premiums penetration was found to be deeper in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{ARAB} = 1.26\%, M_{OECD} = 7.29\%), t = -44.31, R^2 = 0.98, p < .05 \text{ \& } p < .01]$$

Finding (V)P: Relevant to Model 5P: Non-Life Insurance Density:

Non-life insurance density – after increasing the power of the design – was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{\text{ARAB}} = 3.09, M_{\text{OECD}} = 6.37), t = -8.44, R^2 = 0.63, p < .05 \text{ \& } p < .01]$$

Finding (VI)P: Relevant to Model 6P: Gross Premiums Density:

Gross premiums density - after increasing the power of the design - was found to be much higher in OECD states than in Arab states. The mean of the scores for OECD states is significantly higher than for Arab states.

$$[(M_{\text{ARAB}} = 3.23, M_{\text{OECD}} = 7.30), t = -9.74, R^2 = 0.70, p < .05 \text{ \& } p < .01]$$

The increase in the power of the design has resulted in a significant improvement in the measure of the strength of the relationship (R^2), in all of the above three insurance density models and, hence, improved the robustness of the results.

The results obtained apparently confirm the proposed hypothesis that Islamic religious beliefs have significant adverse influence in insurance development in a given country as measured by all of the above six insurance penetration and density models. This is more evident with life insurance than with non-life insurance.

This conclusion is consistent with results attained by previous research in this area. Such research studies include: Zelizer (1979), Wasow (1986), Browne and Kim (1993), Meng (1994), and Nik-Mat (1995).

The ideal Islamic model for insurance combines elements from Western-style insurance with Islamic elements such as cooperation and absence of interest. For the promotion of insurance in predominantly Islamic countries, it is necessary for each country

Awareness:

It is important for a Muslim to know the direct benefits that he or she will receive from insurance companies. Understanding the function of Islamic insurance companies in the economic well being of the society is critical for the success of these institutions.

Highlighting the morality, from an Islamic point of view, of the decision to use the insurance products, and the impact that insurance has on reducing social problems and enhancing social welfare and justice, could effectively stimulate this awareness. If a Muslim sees insurance as a blessing from God, and, therefore, a morally acceptable tool for dealing with the progress of civilization, then he or she will be more interested in cooperating toward promoting insurance and more willing to use insurance as a risk-management device.

Knowing that insurance allows families to continue their activities in much more normal fashion after a loss is important, but it is equally important for Muslims to understand the role of insurance in business. They need to know how insurance aids the planning process, facilitates credit transactions, lowers a firm's cost of capital, helps and supports research and development, and acts as an antimonopoly device. Finally, there is the role of the insurance industry in the economy, especially in helping the banking industry and other financial institutions in promoting the development and expansion of capital markets and the distribution of income.

In order to achieve high levels of awareness about the role of insurance in a society, among other things, the following four important legal principles, which are reflected in all insurance contracts, must be clearly spelled out:

Values shape attitudes, which in turn influence behavior. The analysis of values, therefore, provides a basis for understanding people's attitudes in terms of how they perceive opportunities and threats in their environment and how to respond to them.

Muslim mental attitudes towards life in general and wealth in particular are fundamentally different from the views held in the West, which causes Muslims to behave differently towards risk and how to manage it. "To explain this attitude simply by mentioning fatalism would indeed be an over simplification of the matter," wrote Klingmuller. "The fear of the unknown, in actual fact rears casuistry and determinism which, once being existent, already by its presence creates psychological barriers against providence."

Muslim attitudes toward risk and how to manage it are also different from the views held in the West. Even within different Muslim groups, the concept of risk is different. "The typical idea of risk, the taking over of an abstract hazard, is alien to Islamic Law," wrote Klingmuller.

Not all pure risks are insurable. The following requirements are needed before a pure risk can be insured:

1. There must be a large number of exposure units.
2. The loss must be accidental and unintentional.
3. The loss must be determinable and measurable.
4. The chance of loss must be calculable.

In this area, there is a definite need for clarification. Islam does not preach fatalism, in its totalities. The view that whatever a person does and whatever the circumstances may be, the end is inevitable. Therefore, there is a room for elaboration on risk, and the qualified legal Islamic scholars must do this.

success of insurance companies. In a conventional insurance company, the premiums are calculated in accordance with ratemaking principles. The most recent study in this area has been conducted by Kiseok (1994), who developed a model that provides ratemaking principles, which have the following characteristics:

1. Individual premiums can be calculated.
2. The risk associated with the contingency of claims is introduced with strong theoretical justifications.
3. The insolvency risk and the investment of insurers are introduced with strong theoretical justifications.

In an Islamic model of an insurance company, the premium must be calculated according to Islamic law. This means that the insurance company can neither discriminate nor include high margin of profit in its premium calculation. Premiums, therefore, should be sufficient enough to cover claims (including necessary reserves), operating expenses (such as agent commissions), and all other costs related to underwriting, record keeping, mailing, claim investigation, claim evaluation, etc.), and extra two to five percent for participation fee. Participation fees can be used to further develop and expand Islamic insurance companies.

However, without having enough exposures, the premiums could be very high, which would make insurance very difficult for many Muslims to afford and would put Islamic insurance companies at a disadvantaged position relative to conventional insurance companies. One solution could be for Islamic insurance companies, at least at their early stages of development (first 10 years), to have access to international reinsurance markets.

A. Taxation:

1. Premium payments on all forms of life insurance policies, up to certain levels should be tax deductible.
2. Principal payments or any other form of payments by life insurance companies to the beneficiaries should be tax-exempt.
3. Dividend payments to the stockholders of life insurance companies for certain periods of time (e.g. five years) should be tax-exempt.
4. All profits of life insurance companies, as long as they are invested in the company, should be tax-exempt.

B. Financial Support:

1. Part of *Zakat* payments to needy persons should be used as premiums for purchasing life insurance policies for the receivers of the *Zakat*.
2. The insurance company's ability to meet its short- and long-term obligations is very critical to its survival. This ability depends upon how quickly an insurance company can use its operating cash flows and convert its short-term investments in financial assets into cash.

The lack of adequate liquidity can force an insurance company to sell its investments or part of its fixed assets, which may result in substantial losses. This is why government should design a special form of risk-free short-term financial instrument, so that Islamic insurance companies can be able to invest their needed liquid assets and receive acceptable returns.

- (b) Revoke licenses of an insurer (or representative) if its operation is not in accordance with pre-established regulations, and liquidate insolvent insurers.
 - (c) Examine insurance companies periodically to make sure that insurers holding assets and reserves are adequate and their operations are in accordance with *Shari'ah*.
 - (d) Regulate policy language, preventing insurers from including unfair or unreasonable provisions in insurance policies.
 - (e) Study and recommend acceptable methods of investment.
 - (f) Provide guidelines to the insurers on how to prepare and file their financial reports.
 - (g) Promote and provide training facilities for insurance personnel and their agents. Monitor advertising and marketing activities of the insurance companies.
 - (h) Regulate insurance rates in order to ensure that rates are adequate but not excessive or unfairly discriminatory.
 - (i) Investigate consumer complaints.
4. Islamic insurance companies can engage in short-term direct investments only by investing in low-risk trade related activities. The Islamic central insurance regulatory body can define level and degree of risk and detail of investments.

Long-term indirect investment should be done through specialized Islamic financial institutions or Islamic investment companies. In all cases, Islamic insurance companies

These financial institutions should also be able to use appropriate risk management techniques (including insurance) to reduce the risk in their operations. The use of insurance for covering risk in long-term projects is highly recommended.

The Relationship between Islamic and Non-Islamic Financial Institutions:

The relationship between Islamic insurance companies and their non-Islamic counterparts should be carefully determined, and may be limited to the exchange of services for fees. At the early stages of development of an Islamic insurance industry, there will be a need for re-insurance support and services.

At this stage, some sort of customer client relationship should be developed. In the later stages when a viable Islamic re-insurance industry has been developed, the relationship should be the same as for other financial institutions.

Legal Form of Islamic Insurance Companies:

The legal forms of Islamic insurance companies should be determined based upon the economic conditions (level of development), social norms, cultural factors and needed products in each Islamic country. Private insurance companies can be organized either as proprietary or cooperative entities. A principal difference between the two is that policy owners in cooperatives will become owners of the insurance company. In the case of stock companies, the shareholders must be informed in advance that the company's equity will be invested separately from premiums collected from the insured. Based upon the circumstances, the following forms of organizations (some with slight modifications) can be used:

1. Incorporated propriety insurers;

2. To extract gains for its promoters;
3. To earn fees and commissions by forming a separate company to manage the insurer or to market its products;
4. To lower insurance costs for owners;
5. To provide owners with a type of insurance protection not otherwise available to them in the market; and
6. To sell services only (medical, legal, or administrative) on a prepaid basis.

In Islamic economies, the main motive for the formation of insurance companies should be:

1. To provide Muslims with needed insurance protection at the lowest possible costs,
2. To provide coverage for financial transactions; and
3. To help businesses grow.

Products and Contracts:

A) Products:

A demand for insurance products is a derived demand and in an Islamic society is affected by the following factors:

1. The level of existing risk and its seriousness (the possible impact of risk on individuals and organizations) and the need for protection;
2. Consumers' perceptions about insurance as a mechanism for managing risk;
3. Scope of coverage and whether it is in accordance with the *Shari'ah*;
4. Price (premium);
5. Consumers' income;
6. Cost of alternative coverage(s).

stipulation, for the validity of any contract is the mutual consent of the contracting parties. In this regard, the *Qur'an* (IV: 29) states: “*Oh you who believe, squander not your wealth among yourselves in vanity, except it be a trade by mutual consent.*” The prophet is also reported to have said: “It is not lawful to take the property of a Muslim except by his consent,” and “Sale is by consent.”

In 1961, the Congress of the Week of Islamic Law, which was held in Damascus, Syria, fervently accepted this thesis against a system of numerous nominate contracts. It was stated that as the parties are free to make contracts of their own choice, all kinds of contract would be acceptable, providing that they do not contradict the basic principles of the *Shari'ah's* laws of contracts and the generally acknowledged principles of Islam.

Suggestions for Future Research

Future research is suggested in the following areas:

1. A survey research on the attitudes of Muslims towards insurance is recommended to be conducted in the future with a larger cross-sectional representative sample from all over the Islamic world, with the aim of ascertaining the exact attitude of Muslims towards all classes of insurance in general and life insurance in particular.
2. An investigation study could be undertaken on the performance of existing Islamic insurance companies in order to determine their strengths and weaknesses with the aim of making specific recommendations to overcome their weaknesses and to build on their strengths to further promote Islamic financial institutions.

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APPENDIX A

A CASE STUDY OF THE UNITED ARAB EMIRATES (UAE)

In this appendix we present a brief introduction of the UAE, an outline of its rapid economic growth, a summary of its insurance industry's development in the past, the challenges facing it, and its expected growth in the future in relation to the current study's findings.

The UAE is located in Western Asia on the Arabian Peninsula. It's bordering the Gulf of Oman, the Arabian Gulf, Saudi Arabia, Oman, and Qatar. Its total area is around 83,600 sq km. The UAE is strategically located at the southern approaches to the Strait of Hormuz, which represents a vital transit point for world crude oil. The capital of the UAE is Abu Dhabi. Arabic is the country's official language, although English is widely used and it is regarded as the language of commerce. Population of the UAE is around 3.5 million, with around 80% expatriates. Islam is the religion of the majority of around 96% of the population. The currency of the UAE is the Dirham (AED), USD \$1.00 = AED 3.6725.

The UAE is a federation of seven Emirates (principalities), namely: Abu Dhabi, Dubai, Sharjah, Ras Al Khaimah, Fujairah, Umm Al Quwain, and Ajman. The UAE is a relatively new country; it gained its independence from the United Kingdom in 1971.

The UAE has an open economy with a high per capita income and a sizable annual trade surplus. Its wealth is based on oil and gas production (about 33% of GDP), and the fortunes of the economy fluctuate with the prices of these commodities. Since 1973, the UAE has undergone a profound transformation from an impoverished region of small desert principalities to a modern state with a high standard of living. At current levels of production, oil and gas reserves should last for more than 100 years.

The value of the output of the non-oil sectors reached AED 159.9 billion in 2000, accounting for 66.1% of GDP, against AED 151.1 billion and a ratio of 75.2% in 1999. The value of the overall output of the commodity sectors reached AED 140.4 billion in 2000, accounting for 58.0% of GDP, against AED 104.4 billion and a ratio of 52.1% in 1999.

The value of the output of the oil and natural gas sector rose to AED 82.0 billion in 2000, an increase of 64.6% compared to its level in 1999. The oil sector's contribution to GDP also increased from 24.8% in 1999, to 33.9% in 2000. This was mainly attributed to the increase in average oil prices from USD \$17.6 a barrel in 1999, to USD \$27.2 a barrel in 2000, an increase of 54.5%.

As the output growth rate exceeded the rate of population growth, GDP per capita rose by 13.8% in 2000 to reach AED 77,830, against AED 68,395 in 1999. Likewise, consumption per capita increased by 2.4% in 2000.

The following table, **Table 13**, shows the significant increase in the UAE's GDP during the 1990's decade, as well as, the remarkable increase in its per capita GDP, its total exports and, hence, its current account surplus over the same period.

From 1990 to 2000, the economy had experienced high economic growth rates: GDP rose from AED 125.7 billion, to AED 241.9 billion. Further, international trade had witnessed a significant increase; the total export-import in 1990 was AED 122.0 billion, while in 2000, the figure had become AED 285.7 billion. Further more, per capita GDP had also increased from AED 67,360 in 1991, to AED 77,830 in 2000.

have discussed privatization of government-owned industries and the establishment of a stock market. Federal government steps toward privatization have been tentative although the Emirate of Abu Dhabi's ongoing privatization of the power/water sector is an ambitious initiative. With the establishment of stock exchanges in Abu Dhabi and Dubai in 2000, it is believed that a nationwide, regulated exchange will be in place by the end of 2002.

The unemployment rate appears to be holding steady. Observers have noted that unemployment among UAE nationals may be an issue in the future, and Emiratization of the UAE economy remains a national objective.

Principal Growth Sectors:

The Oil Sector:

The UAE has nearly 98 billion barrels of proven oil reserves, or about 9.8% of total proven world oil reserves, and 5.8 trillion cubic meters of proven natural gas reserves, approximately 4.6% of total world proven natural gas reserves. The UAE is thus the fourth largest gas reserve country in the world after Russia, Iran, and Qatar. The majority of the oil and gas reserves are located in the Emirate of Abu Dhabi, which holds 94% and 92%, respectively. UAE oil production capacity stands at 2.3 million barrels per day (mbd) as of July 2000. The UAE--and Abu Dhabi in particular--remains one of only a few states with significant excess production capacity. While Dubai produces at maximum capacity, Abu Dhabi is nearing completion of a 5.0 billion-dollar capacity expansion program that will take Abu Dhabi capacity to 2.6 mbd. Oil's share of GDP declined from 44.2% in 1990 to 33.9% in 2000. In 2000 the value of oil exports rose by 62.3%, the value of gas exports by 11.2% and the value of petroleum derivatives by 6.4%.

The following table, **Table 14**, indicates a significant shift in the structure of the UAE's economy, with the relative share of the oil and gas sector declining from 46.1% in 1990, to 34.2% in 2000. The relative share of the manufacturing sector has also increased from 7.4% in 1990, to 11.9% in 2000. Relative Shares of other sectors that have increased during this ten-year period include: the transport, storage and communication sector, the real estate and business sector, the financial services sector, and the tourism sector. The following figures, **Table 14**, demonstrate the success of the UAE Government's efforts to diversify the economy.

Table 14
Structural Change of the UAE's Economy between 1990 and 2000

Economic Sector	1990		2000	
	AED Million	Relative Share (%)	AED Million	Relative Share (%)
Oil & Gas	57,939	46.1	82,655	34.2
Manufacturing Industries	9,242	7.4	28,846	11.9
Construction	9,987	7.9	17,247	7.1
Wholesale & Retail Trade	11,285	9.0	22,268	9.2
Transport, Storage and Communication	5,931	4.7	16,153	6.7
Financing & Insurance	6,275	5.0	14,363	5.9
Real Estate & Business	6,860	5.4	18,618	7.7
Government Services	12,927	10.3	24,637	10.2
Others ^a	5,261	4.2	17,101	7.1
Total	125,707	100.0	241,888	100.0

Source: The Central Bank of the UAE, Annual Reports and Economic Bulletins, 1990 and 2000
UAE Ministry of Planning, Annual Statistical Abstract, 1990 and 2000

Note: USD \$1.00 = AED 3.671 and (= 3.6725 November 1997 onwards)
(a) Including Agriculture, Live Stock, Water & Electricity, Restaurants & Hotels, Social & Personal Services, and Housing Services

There are no restrictions on the import or export of either the UAE Dirham or foreign currencies, by foreigners or UAE nationals, with the exception of the currencies of those countries subject to United Nations sanctions. Since 1981, the UAE Dirham has been pegged to the US dollar at an exchange rate of 3.673 in an effort to stabilize the Dirham and control inflation. Periodically there are calls to peg the Dirham to a basket of currencies, including the EURO.

The government sector includes the accounts of the federal government as well as accounts of the seven individual emirate governments. Only the federal budget, a small part of the total, is published. The fiscal deficit narrowed from AED 29.5 billion in 1999 (14.7% of GDP), to AED 6.9 billion in 2000 (2.9% of GDP). This deficit was entirely financed by returns on government's investments. UAE government sources project continued fiscal deficits for the next several years, assuming current policies remain unchanged.

There is no income tax in the UAE. Foreign banks pay a 20% tax on their profits. Foreign oil companies with equity in concessions pay taxes and royalties on their proceeds. There are no consumption taxes. A 4% customs duty is imposed on almost all imports except tobacco products and alcoholic beverages. According to federal Law no. 2 of 1998, customs duties were increased from 50% to 70% on imported tobacco items, and has reach 100% on July 1, 2000.

Balance of Payments Situation:

In 2000, the UAE ran a current account surplus of AED 10.4 billion. This represented 4.3% of GDP. This current account surplus represents an increase of 85.2% over the level achieved in 1999, and it is attributed mainly to the increase in oil prices in the international markets.

UAE and to nearby locations in neighboring GCC countries. As part of its drive to diversify its economy away from oil to regional trade, Dubai has developed free zones at the two main seaports and its international airport. At these sites, it handles re-export cargo with considerable expertise and precision. Given that international shippers operating between Europe and the Far East prefer to make only one stop in the Gulf, Dubai has managed to secure the lion's share of the business of unloading, breaking down, and reloading cargo for onward shipment. Dubai's physical facilities and sheer expertise in this area make its ports the preferred stops for most shippers on these routes. Cargo unloaded at Dubai and ferried across the Gulf to Iranian ports is then brought to markets in central Asia via Iranian road and rail lines. Dubai's cargo village at its international airport handles more air cargo than any other airport in the region, much of it coming into Dubai by sea from the Far East or the subcontinent and then going out by air to Europe.

Other ports in the region, including in the UAE, have noticed Dubai's success and are seeking a share of the re-export business for themselves. While they may never be able to match Dubai for volume, efficiency and expertise, Khor Fakkan and Fujairah, both in the UAE, possess something Dubai does not -- they are located on the Gulf of Oman outside the entrance to the Arabian Gulf.

An international cargo ship can cut 24 hours off the sailing time from Europe to the Far East by not joining the queue to pass through the busy straits; further, by-passing the Gulf means lower insurance rates.

The UAE has well-developed water and electricity utilities but will soon run out of capacity to meet increasing demand. Overall, the growth in water demand is greater than for power. Both Abu Dhabi and Dubai expect to double electric power output between

Growth of the UAE's Insurance Industry

Rapid economic growth, and increases in personal income and living standards in the UAE naturally have led to an increase in the total demand for insurance. The development of any insurance industry has its roots in the nation's economic development and structure.

Generally, the following rules are acceptable:

1. The growth of the insurance industry corresponds to a country's economic growth,
2. The size of the insurance industry in terms of yearly premium income relative to the country's gross domestic product (GDP) will increase as the GDP per capita increases,
3. The demand and supply of insurance are influenced by a country's particular economic structure, social factors, and
4. Other things being equal, there can be large differences among the sizes of insurance industries of countries with different systems, as risks borne by individuals and firms in one country may be borne by the government in another.

The UAE ranked first among Arab countries in insurance density (per capita insurance premium) in 1999. The UAE's figure was USD \$266.00, while the average for all Arab countries in 1999 was only USD \$22.00. See **Table 2** on page 7.

Only foreign insurance companies were operating in the Emirates of Abu Dhabi, Dubai, and Sharjah before the country's independence in 1971. The officials responsible for the economic sector in the country have realized the importance of insurance in the economical, commercial, and construction activities that were taking place in the country

1. Participation in the capital of newly established local national insurance companies.
2. All purchases of local and federal governments are to be insured through local national insurance companies.
3. All government contracts including construction, oil and gas contracts are stipulated to be insured through local national insurance companies.
4. The official federal and local Chamber(s) of Commerce have also recommended that all their members utilize the services of local national insurance companies to insure their respective imports, exports, and properties.

These measures were taken in order to help these companies in their early years of operation so that they can gain financial strength, good reputation, and finally are able to stand-alone and become firmly established. In turn, these companies were expected to play a pivotal role, in the long run, in the development of the economy of the country as a whole. By the end of phase one in 1983, the total underwritten premiums in the UAE amounted to AED 1,004.5 million, comprised of life insurance premiums of AED 89.8 million, and non-life insurance premiums of AED 914.7 million. The total number of personnel employed by all insurance companies operating in the UAE by the end of 1983 amounted to 1,460 employees.

At the end of the second phase in 1989, there were 54 insurance companies operating in the UAE's market; 18 local national insurance companies, and 36 foreign insurance companies. The reduction in foreign insurance companies was due to the fact that the Insurance Companies and Agents Law of 1984 had set the minimum required capital for insurance companies at AED 10 million, which led to the exit of many foreign companies who were not able to meet this requirement. By the end of phase two in 1989, the total

1.1%, and 1.4%, respectively, while the corresponding averages for OECD countries amounted to 5.0%, 3.7%, and 8.7%, respectively. Similarly, the UAE's insurance density for life insurance, non-life insurance, and gross premiums in 1999 amounted to USD \$55.1, \$211.1, and \$266.0, respectively, while the corresponding averages for the OECD countries amounted to USD \$1,119, \$837, and \$1,957, respectively. See **Tables 3, 4, 5, and 6** on pages 61, 62, 63, and 64, respectively.

This gap could be attributed mainly to the country inhabitants' Islamic religious beliefs as per the hypothesis and conclusions of this current study. This is especially evident in connection with life insurance. In order to bridge part of this gap or to eliminate it, it is recommend for the UAE to adopt the set of integrated policies outlined in chapter five for the promotion of insurance in predominantly Islamic countries.

Table 15
UAE's Insurance Premium Growth, 1990 to 2000

Year	Total Premium		Life Insurance		Non-Life Insurance	
	AED Million	Growth (%)	AED Million	Growth (%)	AED Million	Growth (%)
1990	1,203.4	–	154.5	–	1,048.9	–
1991	1,364.8	13.4	168.7	9.2	1,196.1	14.0
1992	1,656.0	21.3	198.6	17.7	1,457.4	21.8
1993	1,967.8	18.8	241.2	21.5	1,726.6	18.5
1994	2,226.4	13.1	283.4	17.5	1,943.0	12.5
1995	2,366.5	6.3	314.3	10.9	2,052.2	5.6
1996	2,437.6	3.0	350.5	11.5	2,087.1	1.7
1997	2,501.7	2.6	441.9	26.1	2,059.8	(1.3)
1998	2,722.3	8.8	507.1	14.8	2,215.2	7.5
1999	2,833.8	4.1	586.9	15.7	2,246.9	1.4
2000	3,058.7	7.9	691.9	17.9	2,366.8	5.3

Source: UAE Ministry of Economy and Commerce, Annual Reports on the Activities of the Insurance Sector, (1990 – 2000)

Note: USD \$1.00 = AED 3.671 and (= 3.6725 November 1997 onwards)

In principle, the development of direct insurance or re-insurance activity is linked to the economical & industrial activity on the one side, and to the increasing public insurance-awareness on the other, in addition to any political or social changes that may take place.

The insurance sector in the UAE became a basis of support for economic and social changes because of its progress alongside with the economic development and prosperity, which the country had witnessed. The year 2000 was the year of insurance boom as the previous figures confirm. However, as from the dawn of the twenty-first century, new challenges began to confront this sector, locally and internationally. On the local level, there began the stage of horizontal expansion in establishing new local national insurance companies, which led to a big increase in the local market's capacity, coupled with the fierce competition between foreign companies and local companies, on one side, and among local insurance companies competing among themselves, on the other. As for the challenges that appeared on the international level, we may point to the most important ones namely, the emergence of gigantic insurance conglomerations in Europe and the USA, and the globalization and liberalization of insurance services through The General Agreement on Tariffs and Trade (GATT).

The insurance market in the UAE will witness important developments in the form of expansion of newly introduced insurance products, the most important of which are personal insurances, life insurance and others. The flourishing in demand for such products can be expected after taking into consideration the data of premium development that was underwritten during the previous years. See **Table 15**, on page 178. Of these insurances are medical insurance and individual loans insurance, whether personal loans or loans granted for the purpose of purchasing real estate and/or other properties. Then comes third party

Funds collected from medical insurance may be used in upgrading the efficiency of services, through research & development, procurement of new equipment, developing laboratories, in addition to developing financial accounting systems and medicines commensurate with the role of health centers and hospitals of the future.

Of the expected insurance products to expand in future, is the insurance of electronic machines, such as computers and related peripheral equipment, especially when the use of the computer has become widely spread in government departments as well as in the private sector, and even at the individual level. The known computer coverage to date is the insurance against the perils of fire or water leakage.

Indemnification includes repair or replacement of the damaged parts as well as reproduction of lost data in consequence to an accident. As for the items that entered the insurance markets recently, they are going side by side along with the maintenance contracts. They cover the damages that may befall the computer due to change of voltage and the wear and tear of equipment due to usage, and may include the covers of the tampering with information contained within the computer, upon supplying them or using them for illegal purposes such as theft, etc.

Underwriting such types of insurance requires cooperation and coordination with specialized reinsurance companies. Further, among the expected novelties during the few coming years with respect to insurance market in the UAE and other Arab markets, is the insurance against professional third party liability, such as the liability of the engineer, the doctor, the auditor and other professionals whose work may directly affect others. This insurance covers the liability that arises from the unintentional damages they may cause. Such insurance products are expected to spread after some Arab countries have passed

In addition to new insurance products that are expected to expand in the UAE and other Arab countries, emerges the issue of technological development in the insurance industry, where insurance companies in industrial countries have dispensed with the use of most of their paper work after relying on automation. Reaching internal information, viewing, and controlling company files require knowledge of information technology and its systems. American insurance companies, according to a recent report, are intending to market insurance policies through the Automatic Teller Machines (ATM's), where the customer can insure his/her house or vehicle for a specified sum, he/she can then pay the premium to the concerned insurance company through the ATM machine. The ATM machine will then issue him/her an insurance policy on the spot.

A direct relationship emerged between this flourishing insurance industry, on one side, and the protection of the consumer on the other side, and consequently arose the need for the enactment of laws and regulations for protecting consumers. When claims arise leading to conflict, the parties involved would resort to arbitration committees specialized in insurance matters. These committees are authorized to settle conflicts before resorting to courts and incurring exorbitant legal fees.

Advanced western governments attach great concern to the issue of protecting insurance companies from losses. For this reason they play an active role in controlling these companies and regularly review their records. By reviewing their balance sheets and studying their status and reserves, they can follow up the activities of these companies directly. They further monitor advertisements of insurance companies for their conformity with reality. In case such advertisements included false information, then the company responsible will be penalized. There are three kinds of controls:

It is well known that the insurance market in the UAE is a free market, without any laws or regulations that limit its activities. Hypothetically, competition in an open market should yield benefits to the consumers in the form of better services and innovative products. Such benefits are required and encouraged by everyone as long as it is fair and within the limits of sound technical underwriting bases and rules. However, competition becomes unacceptable when it deviates from its just and right course, because it would damage the interests of all parties concerned, both the individual consumers and the insurance companies. Thus, it will become harmful, in the end, to the economy as a whole.

Unfair competition will be at the expense of fair prices, and/or at the expense of sound technical bases of insurance contracts, which will affect the capability of insurance companies in performing their role. This kind of competition will adversely affect the profits of these companies, as in the long run; it will increase the percentage and amount of technical losses and reduce the income from premiums, and thus, limiting the companies' capabilities to increase their investments.

International Challenges:

During the last few years, there was a great tendency for reinsurance companies towards consolidation, or buying one another on the international level, which led to the appearance of gigantic insurance companies. This matter surpassed reinsurance companies to reach direct insurance companies themselves and even to brokers.

No doubt, consolidating financial and technical potentialities create reserve capabilities and larger potentialities to accept risks. This is what reinsurance companies are after. However, the need for such gigantic companies is limited in the Arab insurance markets because, up to date, Arab insurance companies are still of medium to small size.

opportunities for active industries and exports of the UAE, which is in line with the directives of the government to make the UAE a regional trade center. The UAE's joining the WTO necessitate on the local level to concentrate on commodities and services that can compete, and particularly on capital intensive commodities that depend on energy, such as: petrochemicals and aluminum etc.

However, the most important effect is the effect of this agreement on the services sector, which includes insurance, banking, transportation, real estates, brokerage, financial investments, hotels, construction, communications and the media. Due to sectoral similarity, the agreement's impact may be direct on some sectors and indirect on others.

This obligates all these establishments, operating in these sectors, to improve their performance so as to be able to deal with the expected international competition. They should be able to offer high standard of services at competitive prices through the utilization of advanced technology. Perhaps mergers among these small establishments to create bigger establishments, capable of competing, may be one of the most important measures to be undertaken, in order to be able to deal with the expected foreign competition.

Unlike most other Arab countries, the UAE do not face great and direct challenges from the globalization through joining the WTO, because foreign companies are already here, and because local insurance companies possess strong financial capabilities.

The present Arab insurance companies may seek to establish gigantic re-insurance companies on the Arabic level, as the general orientation of international economy tends towards the creation of huge blocs, whose aim is to increase revenues, decrease expenses and strengthen financial positions of these blocs.

million which ended in 1999 and the second for AED 50 million, ending three years thereafter, is within the scope of this preparedness to provide appropriate solvency and reserves for these companies, and to create the necessary confidence that will dispel the fears of all the insured policyholders.

Local legislative authorities may, through the higher committee for insurance, encourage local national companies to merge or to cooperate to create great insurance conglomerations.

In addition to the importance of integration with the Gulf and Arab insurance markets, such a cooperation and openness will lead to the creation of investment funds and joint stock exchanges among Arab countries, which will provide the most important Arab insurance investments with greater confidence and help in generating higher profits. Exchange of premiums and insurance risks will be necessary.

As for the UAE, the pros of its joining the WTO seems much greater than its cons, especially when it is seeking to become a regional center for international trade.

Summary

Strategically located in Western Asia, the UAE has an open economy with a high per capita income and a sizable annual trade surplus. Its wealth is based on oil and gas production. The UAE has undergone a profound transformation from an impoverished region of small desert principalities to a modern state with a high standard of living. The country's Gross Domestic Product - GDP (the broadest measure of economic development) has increased in great leaps since the country's independence in 1971, to reach AED 249.1

APPENDIX B: LIST OF PARTICIPANTS

Group-1: Arab Countries: **(Predominantly Islamic)**

01. Algeria
02. Bahrain
03. Egypt
04. Iraq
05. Jordan
06. Kuwait
07. Lebanon
08. Libya
09. Mauritania
10. Morocco
11. Oman
12. Qatar
13. Saudi Arabia (KSA)
14. Sudan
15. Syria
16. Tunisia
17. United Arab Emirates (UAE)
18. Yemen

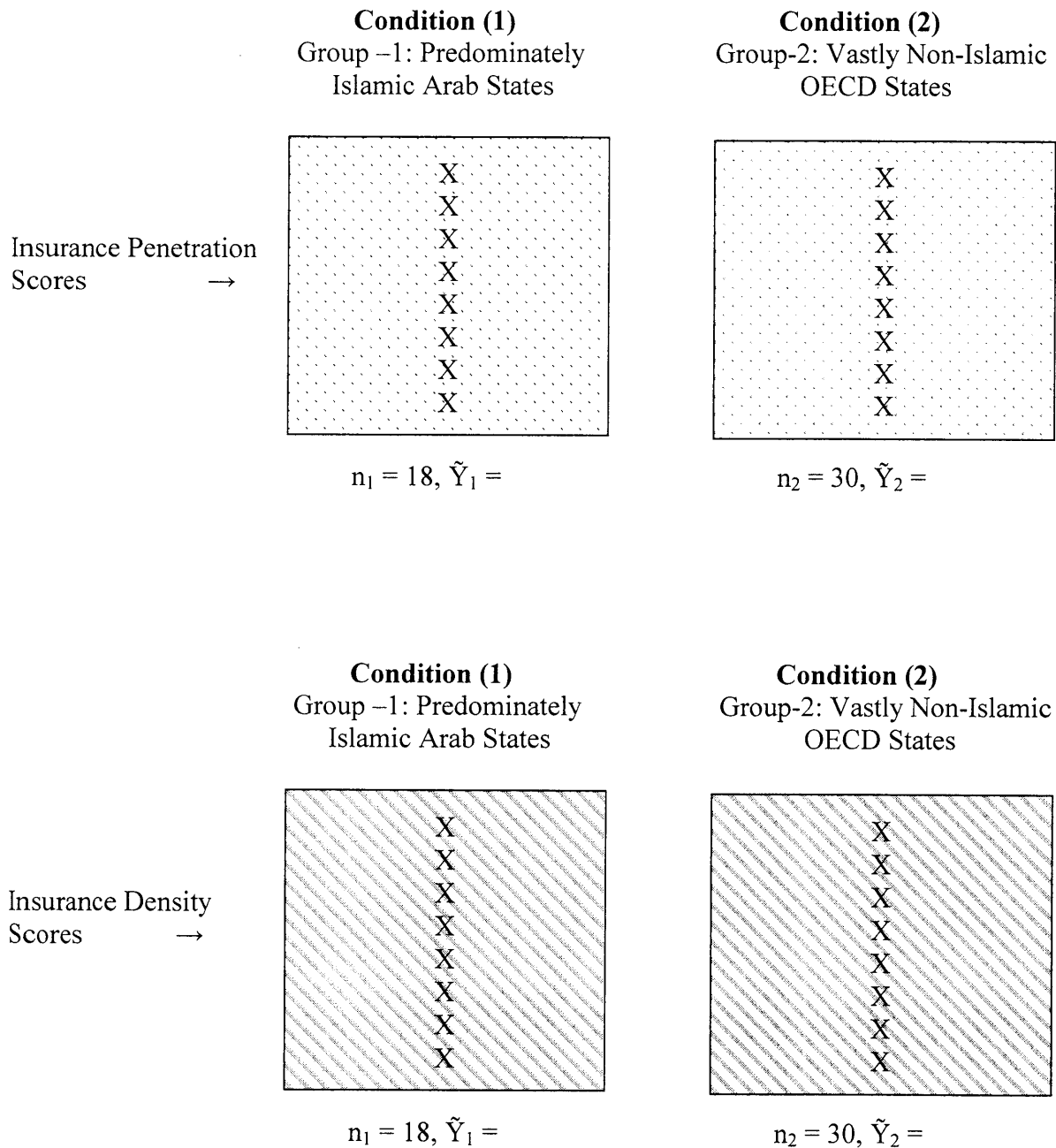
Note: Four countries were excluded from the twenty-two Arab League of Nations, for lack of data, namely:
1) Comoros, 2) Djibouti,
3) Somalia, and 4) Palestine.

Group-2: OECD Countries: **(Predominantly Non-Islamic)**

01. Australia
02. Austria
03. Belgium
04. Canada
05. Czech Republic
06. Denmark
07. Finland
08. France
09. Germany
10. Greece
11. Hungary
12. Iceland
13. Ireland
14. Italy
15. Japan
16. Korea
17. Luxembourg
18. Mexico
19. Netherlands
20. New Zealand
21. Norway
22. Poland
23. Portugal
24. Slovak Republic
25. Spain
26. Sweden
27. Switzerland
28. Turkey
29. United Kingdom
30. United States

APPENDIX C: DIAGRAM OF THE DESIGN

The design used in this study is: **One-way, between-subjects (groups) design.**



APPENDIX D: STATISTICAL ANALYSES OF DATA

1. Life Insurance Penetration Model (*t*-test) and (R^2) Calculation:

Group-1: Predominantly Islamic Arab States:

Country	Life Ins. Premiums as % of GDP	
	(Y)	ΣY^2
Algeria	0.000	0.000
Bahrain	0.005	0.000
Egypt	0.002	0.000
Iraq	0.010	0.000
Jordan	0.003	0.000
Kuwait	0.001	0.000
Lebanon	0.005	0.000
Libya	0.000	0.000
Mauritania	0.000	0.000
Morocco	0.008	0.000
Oman	0.002	0.000
Qatar	0.000	0.000
S. Arabia	0.000	0.000
Sudan	0.000	0.000
Syria	0.000	0.000
Tunisia	0.001	0.000
U.A.E.	0.003	0.000
Yemen	0.000	0.000
Total	0.043	0.000

Sample (N_1)	Mean ($\bar{Y}$)	Est. Population Variance (S_1^2)
$N_1 = 18$	$\bar{Y} = (\Sigma Y/N)$ 0.043/18 =	$\frac{\Sigma Y^2 - (\Sigma Y)^2 / N}{N - 1}$
$DF_1 = (N_1 - 1)$ $\Rightarrow$	0.002	(0.000 - 0.0001)/17
$DF_1 = 18 - 1$	X 100 $\Rightarrow$	X 100 $\Rightarrow$
$DF_1 = 17$	$\bar{Y}_1 = 0.24\%$	$(S_1^2) = 0.0000\%$

Group-2: Vastly Non-Islamic OECD States:

Country	Life Ins. Premiums as (%) of GDP	
	(Y)	ΣY^2
Australia	0.062	0.004
Austria	0.024	0.001
Belgium	0.043	0.002
Canada	0.033	0.001
Czech Republic	0.011	0.000
Denmark	0.040	0.002
Finland	0.026	0.001
France	0.056	0.003
Germany	0.031	0.001
Greece	0.012	0.000
Hungary	0.010	0.000
Iceland	0.002	0.000
Ireland	0.107	0.011
Italy	0.032	0.001
Japan	0.055	0.003
Korea	0.102	0.010
Luxembourg	0.263	0.069
Mexico	0.008	0.000
Netherlands	0.056	0.003
New Zealand	0.013	0.000
Norway	0.022	0.000
Poland	0.010	0.000
Portugal	0.034	0.001
Slovak Republic	0.010	0.000
Spain	0.030	0.001
Sweden	0.048	0.002
Switzerland	0.081	0.007
Turkey	0.002	0.000
United Kingdom	0.102	0.010
United States	0.050	0.003
Total	1.375	0.137

Sample (N_2)	Mean ($\bar{Y}$)	Est. Population Variance (S_2^2)
$N_2 = 30$	$\bar{Y} = (\Sigma Y/N)$ 1.375/30 =	$\frac{\Sigma Y^2 - (\Sigma Y)^2 / N}{N - 1}$
$DF_2 = (N_2 - 1)$ $\Rightarrow$	0.0458	(0.137 - 0.063)/29
$DF_2 = 30 - 1$	X 100 =	X 100 $\Rightarrow$
$DF_2 = 29$	$\bar{Y}_2 = 4.58\%$	$(S_2^2) = 0.26\%$

3. Gross Premium Penetration Model (*t*-test) and (R^2) Calculation:

Group-1: Predominantly Islamic Arab States:

Gross Premium as (%) of GDP		
Country	(Y)	ΣY^2
Algeria	0.006	0.000
Bahrain	0.020	0.000
Egypt	0.007	0.000
Iraq	0.031	0.001
Jordan	0.019	0.000
Kuwait	0.007	0.000
Lebanon	0.028	0.001
Libya	0.005	0.000
Mauritania	0.005	0.000
Morocco	0.028	0.001
Oman	0.011	0.000
Qatar	0.013	0.000
S. Arabia	0.006	0.000
Sudan	0.003	0.000
Syria	0.004	0.000
Tunisia	0.016	0.000
U.A.E.	0.014	0.000
Yemen	0.003	0.000
Total	0.226	0.004

Sample (N_1)	Mean ($\bar{Y}$)	Est. Population Variance (S_1^2)
$N_1 = 18$	$\bar{Y} = (\Sigma Y/N)$ 0.226/18 =	$\frac{\Sigma Y^2 - (\Sigma Y)^2 / N}{N - 1}$
$DF_1 = (N_1 - 1)$ $\Rightarrow$	0.0126	$(0.004 - 0.00284)/17$
$DF_1 = 18 - 1$	X 100 $\Rightarrow$	X 100 $\Rightarrow$
$DF_1 = 17$	$\bar{Y}_1 = 1.26\%$	$(S_1^2) = 0.0068\%$

Group-2: Vastly Non-Islamic OECD States:

Gross Premium as (%) of GDP		
Country	(Y)	ΣY^2
Australia	0.090	0.008
Austria	0.055	0.003
Belgium	0.071	0.005
Canada	0.067	0.004
Czech Republic	0.034	0.001
Denmark	0.063	0.004
Finland	0.044	0.002
France	0.084	0.007
Germany	0.067	0.004
Greece	0.022	0.000
Hungary	0.025	0.001
Iceland	0.027	0.001
Ireland	0.145	0.021
Italy	0.057	0.003
Japan	0.074	0.005
Korea	0.134	0.018
Luxembourg	0.302	0.091
Mexico	0.017	0.000
Netherlands	0.097	0.009
New Zealand	0.030	0.001
Norway	0.047	0.002
Poland	0.030	0.001
Portugal	0.059	0.003
Slovak Republic	0.029	0.001
Spain	0.057	0.003
Sweden	0.071	0.005
Switzerland	0.128	0.016
Turkey	0.014	0.000
United Kingdom	0.141	0.020
United States	0.105	0.011
Total	2.186	0.254

Sample (N_2)	Mean ($\bar{Y}$)	Est. Population Variance (S_2^2)
$N_2 = 30$	$\bar{Y} = (\Sigma Y/N)$ 2.186/30 =	$\frac{\Sigma Y^2 - (\Sigma Y)^2 / N}{N - 1}$
$DF_2 = (N_2 - 1)$ $\Rightarrow$	0.0729	$(0.254 - 0.1593)/29$
$DF_2 = 30 - 1$	X 100 =	X 100 $\Rightarrow$
$DF_2 = 29$	$\bar{Y}_2 = 7.29\%$	$(S_2^2) = 0.3266\%$

4. Life Insurance Density Model (t -test) and (R^2) Calculation:

Group-1: Predominantly Islamic Arab States:

Life Ins. Premiums per Capita		
Country	$\ln(Y)$	$\Sigma(\ln Y)^2$
Algeria	-0.92	0.85
Bahrain	3.79	14.36
Egypt	0.88	0.77
Iraq	1.57	2.46
Jordan	1.19	1.42
Kuwait	2.83	8.01
Lebanon	3.26	10.63
Libya	0.74	0.55
Mauritania	0.00	0.00
Morocco	2.26	5.11
Oman	2.71	7.34
Qatar	0.00	0.00
S. Arabia	0.79	0.62
Sudan	-2.30	5.29
Syria	-1.61	2.59
Tunisia	0.99	0.98
U.A.E.	4.01	16.08
Yemen	-2.30	5.29
Total	17.89	82.36

Sample (N_1)	Mean ($\bar{Y}$)	Est. Population Variance (S_1^2)
$N_1 = 18$	$\ln \bar{Y} = (\Sigma Y/N)$ = 17.89/18	$\frac{\sum Y^2 - (\sum Y)^2 / N}{N - 1}$ (82.36 - 17.78)/17
$DF_1 = (N_1 - 1)$ $\Rightarrow$	= 0.99 $\Rightarrow$	= 3.80 $\Rightarrow$
$DF_1 = 17$	$\ln \bar{Y}_1 = 0.99$	$(S_1^2) = 3.80$

Group-2: Vastly Non-Islamic OECD States:

Life Ins. Premiums per Capita		
Country	$\ln(Y)$	$\Sigma(\ln Y)^2$
Australia	7.18	51.55
Austria	6.45	41.60
Belgium	6.95	48.30
Canada	6.54	42.77
Czech	4.03	16.24
Denmark	7.19	51.70
Finland	6.47	41.86
France	7.22	52.13
Germany	6.67	44.49
Greece	4.96	24.60
Hungary	3.91	15.29
Iceland	3.87	14.98
Ireland	7.89	62.25
Italy	6.51	42.38
Japan	7.54	56.85
Korea	6.88	47.33
Luxembourg	9.37	87.80
Mexico	3.71	13.76
Netherlands	7.24	52.42
New Zealand	5.21	27.14
Norway	6.62	43.82
Poland	3.64	13.25
Portugal	5.96	35.52
Slovak	3.56	12.67
Spain	6.12	37.45
Sweden	7.17	51.41
Switzerland	7.98	63.68
Turkey	1.79	3.20
United	7.81	61.00
United States	7.43	55.20
Total	183.87	1212.67

Sample (N_2)	Mean ($\bar{Y}$)	Est. Population Variance (S_2^2)
$N_2 = 30$	$\ln \bar{Y} = (\Sigma Y/N)$ = 183.87/30	$\frac{\sum Y^2 - (\sum Y)^2 / N}{N - 1}$ (1212.67 - 1126.94)/29
$DF_2 = (N_2 - 1)$ $\Rightarrow$	= 6.13 $\Rightarrow$	= 2.96 $\Rightarrow$
$DF_2 = 29$	$\ln \bar{Y}_2 = 6.13$	$(S_2^2) = 2.96$

5. Non-Life Insurance Density Model (*t*-test) and (R^2) Calculation:

Group-1: Predominantly Islamic Arab States:

Non-Life Ins. Premiums per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Algeria	2.07	4.28
Bahrain	4.99	24.90
Egypt	1.87	3.50
Iraq	2.27	5.15
Jordan	2.91	8.47
Kuwait	4.35	18.92
Lebanon	4.80	23.04
Libya	3.36	11.29
Mauritania	0.69	0.48
Morocco	3.20	10.24
Oman	3.96	15.68
Qatar	5.52	30.47
S. Arabia	3.62	13.10
Sudan	0.10	0.01
Syria	3.03	9.18
Tunisia	3.47	12.04
U.A.E.	5.35	28.62
Yemen	0.00	0.00
Total	55.56	219.38

Sample (N_1)	Mean ($\ln \tilde{Y}$)	Est. Population Variance (S_1^2)
$N_1 = 18$	$\ln \tilde{Y} = (\Sigma Y/N)$	$\frac{\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N}{N-1}$
	$55.56/18$	
$DF_1 = (N_1-1)$	$=$	$(219.38 - 171.50)/17$
$\Rightarrow$	3.09	$= 2.82 \Rightarrow$
$DF_1 = 18-1$	$\Rightarrow$	
$DF_1 = 17$	$\ln \tilde{Y}_1 = 3.09$	$(S_1^2) = 2.82$

Group-2: Vastly Non-Islamic OECD States:

Non-Life Ins. Premiums per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Australia	6.42	41.22
Austria	6.69	44.76
Belgium	6.51	42.38
Canada	6.56	43.03
Czech Republic	4.88	23.81
Denmark	6.64	44.09
Finland	6.14	37.70
France	6.55	42.90
Germany	6.83	46.65
Greece	4.73	22.37
Hungary	4.26	18.15
Iceland	6.65	44.22
Ireland	6.86	47.06
Italy	6.21	38.56
Japan	6.51	42.38
Korea	5.61	31.47
Luxembourg	7.46	55.65
Mexico	3.76	14.14
Netherlands	6.93	48.02
New Zealand	5.53	30.58
Norway	6.76	45.70
Poland	5.93	35.16
Portugal	5.67	32.15
Slovak Republic	4.26	18.15
Spain	6.01	36.12
Sweden	6.45	41.60
Switzerland	7.46	55.65
Turkey	3.47	12.04
United Kingdom	6.85	46.92
United States	7.53	56.70
Total	182.12	1139.35

Sample (N_2)	Mean ($\tilde{Y}$)	Est. Population Variance (S_2^2)
$N_2 = 30$	$\ln \tilde{Y} = (\Sigma Y/N)$	$\frac{\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N}{N-1}$
	$=$	
	$182.12/30$	
$DF_2 = (N_2-1)$	$=$	$(1139.35 - 1105.59)/29$
$\Rightarrow$	6.07	
$DF_2 = 30-1$	$\Rightarrow$	$= 1.16 \Rightarrow$
$DF_2 = 29$	$\ln \tilde{Y}_2 = 6.07$	$(S_2^2) = 1.16$

6. Gross Premium Density Model (*t*-test) and (R^2) Calculation:

Group-1: Predominantly Islamic Arab States:

Gross Premium per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Algeria	2.08	4.33
Bahrain	5.26	27.67
Egypt	2.20	4.84
Iraq	2.71	7.34
Jordan	3.09	9.55
Kuwait	4.55	20.70
Lebanon	5.00	25.00
Libya	3.43	11.76
Mauritania	0.69	0.48
Morocco	3.53	12.46
Oman	4.20	17.64
Qatar	5.53	30.58
S. Arabia	3.66	13.40
Sudan	0.00	0.00
Syria	3.04	9.24
Tunisia	3.56	12.67
U.A.E.	5.58	31.14
Yemen	0.00	0.00
Total	58.11	238.80

Sample (N_1)	Mean ($\ln \bar{Y}$)	Est. Population Variance (S_1^2)
$N_1 = 18$	$\ln \bar{Y} = (\Sigma Y/N)$ = 58.11/18	$\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N$ = $N-1$
$DF_1 = (N_1-1)$ =>	= 3.23	$(238.80 - 187.60)/17$ = 3.01 =>
$DF_1 = 18-1$	=>	
$DF_1 = 17$	$\ln \bar{Y}_1 = 3.23$	$(S_1^2) = 3.01$

Group-2: Vastly Non-Islamic OECD States:

Gross Premium per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Australia	7.56	57.15
Austria	7.27	52.85
Belgium	7.45	55.50
Canada	7.24	52.42
Czech Republic	5.17	26.73
Denmark	7.65	58.52
Finland	7.01	49.14
France	7.63	58.22
Germany	7.45	55.50
Greece	5.54	30.69
Hungary	4.80	23.04
Iceland	6.71	45.02
Ireland	8.20	67.24
Italy	7.06	49.84
Japan	7.84	61.47
Korea	7.06	49.84
Luxembourg	9.51	90.44
Mexico	4.43	19.62
Netherlands	7.79	60.68
New Zealand	6.08	36.97
Norway	7.39	54.61
Poland	4.77	22.75
Portugal	6.52	42.51
Slovak Republic	3.14	9.86
Spain	6.76	45.70
Sweden	7.57	57.30
Switzerland	8.44	71.23
Turkey	3.66	13.40
United Kingdom	8.14	66.26
United States	8.17	66.75
Total	204.01	1451.28

Sample (N_2)	Mean ($\ln \bar{Y}$)	Est. Population Variance (S_2^2)
$N_2 = 30$	$\ln \bar{Y} = (\Sigma Y/N)$ = 204.01/30	$\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N$ = $N-1$
$DF_2 = (N_2-1)$ =>	= 6.80	$(1451.28 - 1387.34)/29$ = 2.20 =>
$DF_2 = 30-1$	=>	
$DF_2 = 29$	$\ln \bar{Y}_2 = 6.80$	$(S_2^2) = 2.20$

7. Life Insurance Density Model - Calculation:(After Limiting the Population)

Group-1: Predominantly Islamic Arab States:

Life Insurance Premiums per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Algeria	-0.92	0.85
Bahrain	3.79	14.36
Egypt	0.88	0.77
Iraq	1.57	2.46
Jordan	1.19	1.42
Kuwait	2.83	8.01
Lebanon	3.26	10.63
Libya	0.74	0.55
Mauritania	0.00	0.00
Morocco	2.26	5.11
Oman	2.71	7.34
Qatar	0.00	0.00
S. Arabia	0.79	0.62
Sudan	-2.30	5.29
Syria	-1.61	2.59
Tunisia	0.99	0.98
U.A.E.	4.01	16.08
Yemen	-2.30	5.29
Total	17.89	82.36

Sample (N ₁)	Mean (ln $\bar{Y}$)	Est. Population Variance (S ₁ ²)
N ₁ = 18	$\ln \bar{Y} = (\Sigma Y/N)$ = 17.89/18	$\frac{\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N}{N-1}$ = (82.36 - 17.78)/17 = 3.80 =>
DF ₁ = (N ₁ -1) => DF ₁ = 18-1	= 0.99 =>	
DF₁ = 17	ln$\bar{Y}_1$ = 0.99	(S₁²) = 3.80

Group-2: Vastly Non-Islamic OECD States:

Life Insurance Premiums per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Australia	7.18	51.55
Austria	6.45	41.60
Belgium	6.95	48.30
Canada	6.54	42.77
Denmark	7.19	51.70
Finland	6.47	41.86
France	7.22	52.13
Germany	6.67	44.49
Greece	4.96	24.60
Iceland	3.87	14.98
Ireland	7.89	62.25
Italy	6.51	42.38
Japan	7.54	56.85
Korea	6.88	47.33
Luxembourg	9.37	87.80
Mexico	3.71	13.76
Netherlands	7.24	52.42
New Zealand	5.21	27.14
Norway	6.62	43.82
Portugal	5.96	35.52
Spain	6.12	37.45
Sweden	7.17	51.41
Switzerland	7.98	63.68
United	7.81	61.00
United States	7.43	55.20
Total	166.94	1152.01

Sample (N ₂)	Mean (ln $\bar{Y}$)	Est. Population Variance (S ₂ ²)
N ₂ = 25	$\ln \bar{Y} = (\Sigma Y/N)$ = 166.94/25	$\frac{\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N}{N-1}$ = (1152.01 - 1114.76)/24 = 1.55 =>
DF ₂ = (N ₂ -1) => DF ₂ = 25-1	= 6.68 =>	
DF₂ = 24	ln$\bar{Y}_2$ = 6.68	(S₂²) = 1.55

8. Non-Life Insurance Density Model - Calculation:(After Limiting the Population)

Group-1: Predominantly Islamic Arab States:

Country	Non-Life Insurance Premiums per Capita	
	$\ln(Y)$	$\Sigma(\ln Y)^2$
Algeria	2.07	4.28
Bahrain	4.99	24.90
Egypt	1.87	3.50
Iraq	2.27	5.15
Jordan	2.91	8.47
Kuwait	4.35	18.92
Lebanon	4.80	23.04
Libya	3.36	11.29
Mauritania	0.69	0.48
Morocco	3.20	10.24
Oman	3.96	15.68
Qatar	5.52	30.47
S. Arabia	3.62	13.10
Sudan	0.10	0.01
Syria	3.03	9.18
Tunisia	3.47	12.04
U.A.E.	5.35	28.62
Yemen	0.00	0.00
Total	55.56	219.38

Sample (N_1)	Mean ($\ln \tilde{Y}$)	Est. Population Variance (S_1^2)
$N_1 = 18$	$\ln \tilde{Y} = (\Sigma Y/N)$ = 55.56/18	$\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N$ = $N-1$
$DF_1 = (N_1-1)$ =>	= 3.09	$(219.38 - 171.50)/17$ = 2.82 =>
$DF_1 = 18-1$	=>	
$DF_1 = 17$	$\ln \tilde{Y}_1 = 3.09$	$(S_1^2) = 2.82$

Group-2: Vastly Non-Islamic OECD States:

Country	Non-Life Premiums Insurance per Capita	
	$\ln(Y)$	$\Sigma(\ln Y)^2$
Australia	6.42	41.22
Austria	6.69	44.76
Belgium	6.51	42.38
Canada	6.56	43.03
Denmark	6.64	44.09
Finland	6.14	37.70
France	6.55	42.90
Germany	6.83	46.65
Greece	4.73	22.37
Iceland	6.65	44.22
Ireland	6.86	47.06
Italy	6.21	38.56
Japan	6.51	42.38
Korea	5.61	31.47
Luxembourg	7.46	55.65
Mexico	3.76	14.14
Netherlands	6.93	48.02
New Zealand	5.53	30.58
Norway	6.76	45.70
Portugal	5.67	32.15
Spain	6.01	36.12
Sweden	6.45	41.60
Switzerland	7.46	55.65
United Kingdom	6.85	46.92
United States	7.53	56.70
Total	159.32	1032.04

Sample (N_2)	Mean ($\ln \tilde{Y}$)	Est. Population Variance (S_2^2)
$N_2 = 25$	$\ln \tilde{Y} = (\Sigma Y/N)$ = 159.32/25	$\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N$ = $N-1$
$DF_2 = (N_2-1)$ =>	= 6.37	$(1032.04 - 1015.31)/24$ = 0.70 =>
$DF_2 = 25-1$	=>	
$DF_2 = 24$	$\ln \tilde{Y}_2 = 6.37$	$(S_2^2) = 0.70$

9. Gross Premium Density Model - Calculation: (After Limiting the Population)

Group-1: Predominantly Islamic Arab States:

Gross Premium per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Algeria	2.08	4.33
Bahrain	5.26	27.67
Egypt	2.20	4.84
Iraq	2.71	7.34
Jordan	3.09	9.55
Kuwait	4.55	20.70
Lebanon	5.00	25.00
Libya	3.43	11.76
Mauritania	0.69	0.48
Morocco	3.53	12.46
Oman	4.20	17.64
Qatar	5.53	30.58
S. Arabia	3.66	13.40
Sudan	0.00	0.00
Syria	3.04	9.24
Tunisia	3.56	12.67
U.A.E.	5.58	31.14
Yemen	0.00	0.00
Total	58.11	238.80

Sample (N ₁)	Mean (ln $\tilde{Y}$)	Est. Population Variance (S ₁ ²)
N ₁ = 18	$\ln\tilde{Y} = (\Sigma Y/N)$ = 58.11/18	$\frac{\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N}{N-1}$
DF ₁ = (N ₁ -1)	=	(238.80 - 187.60)/17
=>	3.23	= 3.01 =>
DF ₁ = 18-1	=>	
DF₁ = 17	ln$\tilde{Y}_1$ = 3.23	(S₁²) = 3.01

Group-2: Vastly Non-Islamic OECD States:

Gross Premium per Capita		
Country	ln (Y)	$\Sigma(\ln Y)^2$
Australia	7.56	57.15
Austria	7.27	52.85
Belgium	7.45	55.50
Canada	7.24	52.42
Denmark	7.65	58.52
Finland	7.01	49.14
France	7.63	58.22
Germany	7.45	55.50
Greece	5.54	30.69
Iceland	6.71	45.02
Ireland	8.20	67.24
Italy	7.06	49.84
Japan	7.84	61.47
Korea	7.06	49.84
Luxembourg	9.51	90.44
Mexico	4.43	19.62
Netherlands	7.79	60.68
New Zealand	6.08	36.97
Norway	7.39	54.61
Portugal	6.52	42.51
Spain	6.76	45.70
Sweden	7.57	57.30
Switzerland	8.44	71.23
United Kingdom	8.14	66.26
United States	8.17	66.75
Total	182.47	1355.50

Sample (N ₂)	Mean (ln $\tilde{Y}$)	Est. Population Variance (S ₂ ²)
N ₂ = 25	$\ln\tilde{Y} = (\Sigma Y/N)$ = 182.47/25	$\frac{\Sigma \ln Y^2 - (\Sigma \ln Y)^2 / N}{N-1}$
DF ₂ = (N ₂ -1)	=	(1355.50 - 1331.81)/24
=>	7.30	= 0.99 =>
DF ₂ = 25-1	=>	
DF₂ = 24	ln$\tilde{Y}_2$ = 7.30	(S₂²) = 0.99