



Trends in
**Applied Sciences
Research**

ISSN 1819-3579



Academic
Journals Inc.

www.academicjournals.com

Institutional Practices and Life Insurance Consumption: An Analysis Using Developing Countries Scores

Hamid Sepehrdoust and Samaneh Ebrahimnasab

Faculty of Economics and Social Science, Bu-Ali Sina University, Hamedan, Iran

Corresponding Author: Hamid Sepehrdoust, Faculty of Economics and Social Science, Bu-Ali Sina University, Hamedan, Iran

ABSTRACT

Household expenditure on life insurance is one of the economic financial indicators of the society and plays an important role in mobilizing household's saving resources towards financial market development. Experimental evidence indicate that despite increasing importance of economic factors in life insurance market; decision making policies are heavily influenced by institutional factors, creating a large variation in life insurance consumption across developing countries. The present study aims to investigate the economic, regulatory and political factors determining life insurance demand in developing economies during the years 1999 to 2011. For this purpose, an econometric panel model was used to analyze the relevant data of life insurance demand in selected developing countries for the period of study. The results show that the regulatory variables including the governance of law and quality of rules and regulations, political factors including issues of political stability and democracy have positive and significant effect on life insurance demand. While economic variables including GDP per capita, financial development index and unemployment rate have positive effect, while inflation rate has negative effect on life insurance demand.

Key words: Developing countries, financial development, life insurance, panel data

INTRODUCTION

Insurance is an instrument for managing and coping with risk and replaces the uncertainty of loss occurrence at a lower cost. Since the last decades of the 19th century, insurance has become a popular product and practicality is based on three functions. Firstly, risk is transferred from the risk-averse individual to the risk-neutral insurer. Secondly, the aggregated risk is smaller than the sum of the individual risks it covers. Thirdly, the price each insured pays should reflect the risk he contributes. There is a trade-off between the cost of refining this classification and the benefit it creates by making the premiums proportional to the risks. The overall outcome of the above-mentioned three economic functions implies that insurance is economically desirable (Ziv-Av, 2006). Nowadays, investment on life insurance activities as one of the most active subsets of insurance industry play an important role in economic development of modern societies and basically affects living standard of individuals as well as welfare of the society. Optimal performance of life insurance industry is normally justified through its potential ability for massive collection of individual's savings and converting them into an active capital market needed for development purposes. Taking into account the time gap between insurance premiums received and compensations paid to the investors that create a good opportunity for life insurance companies to

equip capital market with huge amount required for boosting profitable economic activities, cutting the inflation rate, increment of income generating employment and ultimately achieving sustainable economic growth for developing countries.

Life insurance provides several important financial services for individuals and the economy. First, life insurance products encourage long-term saving and the reinvestment of substantial sums in public and private sector projects. By leveraging their role as financial intermediaries, life insurers have become a key source of long-term finance, encouraging the development of capital markets (Catalan *et al.*, 2000). Second, in the face of growing urbanization, population mobility and formalization of economic relationships between individuals, families and communities, life insurance has taken on increasing importance as a way for individuals and families to manage income risk. Despite the fact that the life insurance market has become an increasingly important financial sector in the world economy, there is a large variation in life insurance consumption across countries from low income to high income group. But what drives the large variation in life insurance consumption across countries remains unclear.

The observed experiences of developed economies during the past decades show that the growing system of life insurance industry has always been considered the main part of capital formation instrument leading to major constructive investments. The life insurance growing system on one hand mobilizes the private sector saving potentials and on the other hand reduces the government mandated responsibilities and thereby leaving the government to preserve its ability for consulting with other parts of the economy. Private and semi private life insurance companies usually deploy the technical reserves of premiums received from households for investing in public and private sectors aiming to increase manufacturing activities and level of employment (Skipper, 1998). The planners almost recognize that now a day, the key point to growth and development of economic sectors, particularly life insurance investments in financial parts of the economy is highly dependent on economic factors, but also on the condition of legal and political environment. In a society, the stability of political and legal system is quite essential for the growing market of life insurance, otherwise the prevailing poor legal and political institutions, political and social crisis, bad governance or unjustified judicial system running in the country would certainly frustrates economic condition and ultimately life insurance market in the society. In general, political instability, corruption, lack of democracy, increased risk and uncertainty have a major impact on investors motivation and eliminate those types of incentives which are necessary for achieving higher efficiencies in long-term investments opportunities, especially in the context of life insurance performance (Erbaş and Sayers, 2006).

Previous studies have identified a set of economic and institutional factors to explain the variations in life insurance consumption measured across countries. Using data from 45 countries in years 1980 and 1987, Browne and Kim (1993) suggest that life insurance consumption across countries is positively related to national income, dependency ratio and government spending on social security, while it is negatively related to the religion, inflation and the policy loading charge. Using data from 48 developing countries in 1986, Outreville (1996) also comes to the conclusion that life insurance consumption across countries on one hand is positively related to the national income and on the other hand is negatively related to inflation rate. In addition, he indicates that while life insurance consumption in a country is positively related to the financial market development, it is also negatively related to the monopolistic market structure of the same country (Chui and Kwok, 2009). The main purpose of the study was to examine the impact of economic, political and legal factors on life insurance demand in selected developing countries during the period 2011-1999. On the basis of hypotheses set that is expected that legal factors such as the rule of law and quality of regulations, political factors such as political stability and democracy and

economic factors including per capita income growth and financial development should have positive effect, while unemployment and inflation rates should have negative effect on demand for life insurance in developing economies. The results are expected help policymakers understand what drives the supply of and demand for life insurance and also help to design strategies for developing life insurance markets.

Life insurance demand model has been explored in theoretical study of Yaari (1965) on the basis of households expected utility maximization and using the title of "uncertainty insurance, life insurance and consumer theory". Yaari (1965) and Hakansson (1969) were the first to develop a theoretical frame-work to explain the demand for life insurance. In this framework the demand for life insurance is attributed to a person's desire to bequeath funds to dependents and provide income for retirement. The consumer maximizes lifetime utility subject to a vector of interest rates and a vector of prices, including insurance premium rates (Beck and Webb, 2003). Yaari (1965) proposed the lifetime spinning of households with uncertainty in their lifetime and believes that, in an economic decision making, the households attempt to purchase the life insurance to increase their expected lifetime utility and eliminate their uncertain lifetime consumption. Therefore, in his model, the household steps forward to maximize his expected lifetime utility subject to the aggregated savings over the lifetime period (Eq. 1).

$$\begin{aligned} \text{Max Eu}(c) &= \int_0^T \{ \Omega(t)\alpha(t)g[c(t)] + \pi(t)\beta(t)\phi[S(t)] \} dt \\ \text{s.t. } S(t) &= m(t) - c(t) + j(t)S(t) \end{aligned} \tag{1}$$

where, the variables; T , $\Omega(t)$, $\alpha(t)$, $g(c)$, $\pi(t)$, $\beta(t)$, $\phi[S(t)]$ and $S(t)$ are, respectively life duration, survival, discounted subjective function, utility function, the risk of death, harmonious mental function inheritance, inheritance and saving functions. In the process of savings accumulation, $j(t)$, $m(t)$ and $c(t)$ are, respectively the income growth, consumption growth and interest rates. Yaari (1965) was of the opinion that, when inheritance is motivated, individuals attempt to manage uncertainty through purchasing life insurance and meanwhile his optimal consumption path becomes as equal as in a certain mode. The optimal time path of life insurance consumption is in Eq. 2.

$$\begin{aligned} \dot{c}^* &= - \left\{ j(t) + \frac{\alpha(t)}{\alpha(t)} \right\} \frac{g'(c^*(t))}{g''(c^*(t))} \\ g'' &< 0, g' > 0 \end{aligned} \tag{2}$$

where, α is the rate of time preference and $\dot{\alpha}(t)/\alpha(t)$ is the consumer's subjective discount rate. If there is no incentive for life insurance and inheritances, the optimal consumption is indicated as Eq. 3:

$$\dot{c}^* = - \left\{ j(t) + \frac{\dot{\alpha}}{\alpha} - \pi(t) \right\} \frac{g'(c^*(t))}{g''(c^*(t))} \tag{3}$$

where, $\pi(t)$ is the death probability and $\alpha/\dot{\alpha} - \pi(t)$ is the subjective discount rate which is greater than $\alpha/\dot{\alpha}$, that means, due to prevailing uncertainty, the future utility of consumption diminishes strongly. In other words, lack of any incentives for investment in life insurance and accumulation

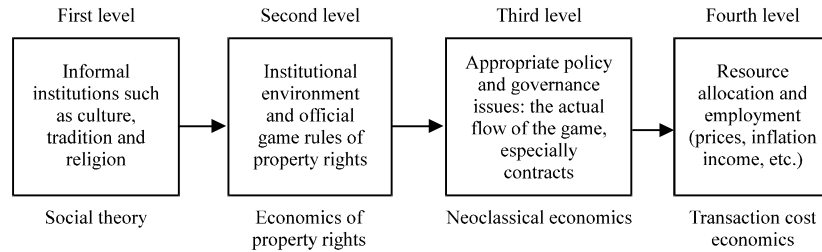


Fig. 1: Four-level model of institutional analysis (Williamson, 2000)

of inheritances, the consumption growth increases. Under the framework of new institutional economics and based on transaction cost, Williamson (2000), stated that an appropriate legal and political environment leads to increase confidence level of investors towards insurance activities and thereby increases the demand for life insurance increases. According to the four-level institutional model, designed by Williamson (2000) as shown in Fig. 1, the first level indicates the indexes that show socio-rooted status of the society including traditions, customs, religion and culture.

The second and third institutional level includes legal and political environments of the society. Williamson (2000) believes that in case of a good governance system that is expected to decrease the transaction costs and develops life insurance contracts in the society. In his fourth level of analysis, Williamson (2000) attempts to explain indicators such as optimal allocation of resources and price optimization. On the basis of this idea, the political instability and poor quality judicial system (longer judicial proceedings, corruption and injustice for insurance holders), causes increase in transaction costs, investment risk and decreasing rates of incentives for long-term investments in life insurance sector. In general, one may come to the conclusion that, improving the legal and political conditions, enhancing the rule of law and improving the quality of legislation would certainly raise the degree of assurance and reliability among the investors and eventually increases demand for life insurance through transaction costs reduction (Williamson, 2000).

In their study, Sigma (1999) and Enz (2000) point to the “S curve” relationship between economic development and insurance market development. Specifically, consumption of life insurance is expected to accelerate as a developing economy grows, but then slows as economic development becomes comparable to that in the developed world. As a consequence, the income elasticity of demand for life insurance should be greater in the developing economies than in developed economies. Beck and Webb (2003) used a panel data for 68 countries over the period from 1961 to 2000 to investigate the determinants of cross-country variation in life insurance consumption. Beck and Webb (2003) document that, out of the eight economic variables, the six demographic variables and the three institutional variables included in their study, national income, inflation and banking sector development are the most robust determinants of life insurance consumption across countries and over time. In particular, while life insurance consumption is positively related to national income and banking sector development, it is negatively related to inflation.

Feyen *et al.* (2011), studied life insurance in 90 developed and developing countries for the years 2008-2000 and the factors affecting it. The results suggest that, existence of a strong legal structure and per capita income have positive effect while inflation rate has negative and significant effect on life insurance demand. In another attempt, Nesterova (2008) examined the factors affecting life insurance demand in 14 European countries for the period 2006-1996 and

came to the conclusion that inflation has negative effect and rule of law has positive and significant effect on demand of life insurance. Ward and Zurbruegg (2002) studied the problem of life insurance demand for an overall 25 OECD and 22 Asian countries during the period of 1998-1987 and concluded that per capita income, financial development, political stability and rule of law have positive and significant effect on the demand of life insurance. In another study on selected OECD countries for the period 2000-1999, Li *et al.* (2007) expressed the conclusion that, income and financial development have positive and significant effect on the demand of life insurance, while inflation has negative and significant effect on the demand of life insurance. Chui and Kwok (2009) in their research titled “Cultural practices and life insurance consumption: An international analysis using globe scores” could study 38 countries including low, medium and high income countries for the period 2004-1966 and concluded that, the variables such as real per capita income and banking development index have positive and meaningful impact on life insurance demand, while inflation rate has negative and significant effect on the demand of life insurance. Diacon (1980) also examined the life insurance demand of United Kingdom for the period 1968-1946 and the results showed that the variables such as income, income tax and the changes in unemployment rate have positive and significant effect, while inflation rate has negative effect on the demand for life insurance.

MATERIALS AND METHODS

Based on the theoretical and experimental studies discussed above and in order to investigate the effect of economic, political and legal factors on life insurance demand, relevant statistical data of selected developing countries regarding life insurance demand were collected from World Development Indicators (2012), World Governance Indicators (WGI) and annual reports of International Journal of Insurance (Sigma, 2000) for the period of 2011-1999, including Iran, Kuwait, Pakistan, Bangladesh, Tunisia, Algeria, Morocco, Malaysia, Indonesia, Venezuela and Ecuador. In this study, a panel data model (Eq. 4) was used to analyze the data in which the dependent variable was set to be the life insurance penetration in selected developing countries that is expected to be affected by certain economic, political and institutional factors. Panel data analysis allows us to exploit cross-country and time-series variation in life insurance consumption and directs us to investigate which economic and institutional factors give rise to a vibrant life insurance market. Normally, two indicators of life insurance consumption including life insurance density and life insurance penetration have been commonly used as dependent variables in previous studies on life insurance consumption across countries (Browne and Kim, 1993; Outreville, 1996; Beck and Webb, 2003). Since life insurance density measures the absolute size of the life insurance consumption adjusted for population and expresses the average amount a typical person spends on life insurance in a country, this measure will be naturally larger in rich countries than in poor countries if life insurance is a normal good. While life insurance penetration is measured as the ratio between life insurance premiums and GDP and can be expressed as a person’s average expenditure on life insurance out of the average income in a society (Chui and Kwok, 2009). Therefore, life insurance penetration that measures life insurance consumption relative to the size of the economy and rich countries may not have larger life insurance penetration than poor countries.

$$\text{Life Insurance}_{it} = \beta_0 + \beta_1 \text{Economics}_{it} + \beta_2 \text{LAW}_{it} + \beta_3 \text{Politics}_{it} + \epsilon_{it} \quad (4)$$

Table 1: Expected results for model estimation of the study

Type and definition of variable	Symbol of variable	Expected sign
Economic factors		
Per capita income	GDPCAP _{it}	+
Financial development	M2 _{it} /GDP _{it}	+
Unemployment rate	UNE _{it}	+
Inflation rate	INF _{it}	-
Legal factors		
Rule of law	RL _{it}	+
Rules and regulations quality	RQ _{it}	+
Political stability		
Political factors	PS _{it}	+
Democracy	DEMOC _{it}	+

where, *i* is country, *t* is time, Life Insurance_{it} is indexed by life insurance penetration rate as a measure of demand for life insurance, Economic_{it} is the economic variables including GDP per capita (GDPCAP_{it}), financial development ratio (M2_{it}/GDP_{it}), unemployment rate (UNE_{it}) and the rate of inflation as measured changes in consumer price index (INF_{it}), LAW_{it} is legal variables including rule of law (RL_{it}) and quality of regulations (RQ_{it}), Politics_{it} is political variables including political stability (PS_{it}) and democracy index (DEMOC_{it}).

Indeed, several studies have found evidence that the development of the insurance sector is related to economic growth (Ward and Zurbruegg, 2000; Webb, 2000; Soo, 1996). As far as the economic determinants are concerned, the previous studies in life insurance markets, document that while there is a strong positive relationship between income and life insurance consumption, there is a strong negative relationship between expected inflation rate and life insurance consumption (Browne and Kim, 1993; Outreville, 1996; Beck and Webb, 2003). Considering the institutional determinants, studies in the literature document that financial intermediaries are better developed in countries with higher degree of investor protection and also the legal system, commonly used as a proxy for investor protection, can explain a significant fraction of the cross-country differences in the development of financial intermediaries. Beck and Webb (2003) use rule of law data obtained from the political risk services as a measure of the degree to which people in a country trust the legal system to settle disputes and enforce contracts. Based on theoretical and experimental results of past studies, the researcher expects to conclude the present study with the results as depicted in column 3 of Table 1, with the help of positive and negative signs.

RESULTS

In order to choose between pooling and panel data for model estimation, Limer-F test was used. The null hypothesis of the Limer F test is set to accept pooling data analysis, while the alternative hypothesis is set to reject it and accept panel data analysis as shown in Eq. 5.

$$F_{(N-1,NT-N-K)} = \frac{(R^2_{UR} - R^2_R) / (N-1)}{(1 - R^2_{UR}) / (NT - N - K)} \quad (5)$$

where, *N* is number of countries, *T* is number of observations for the years 1999 to 2011, *R*² is coefficient of determination of bound models (OLS), *R*²_{UR} is coefficient of determination from the unconstrained model (using panel data) and *K* is the number of estimated parameters. According

Table 2: Limer F test results, Hausman and dependency sections

Type of tests	Model 1	Model 2	Model 3	Model 4
Limmer-F	208/2	105/6	113/7	98/43
Probability	(0/00)	(0/00)	(0/00)	(0/00)
Hausman-F	40/72	98/37	64/16	82/89
Probability	(0/00)	(0/00)	(0/00)	(0/00)
Dependency between sections	0	0/49	0	0
Probability	(0/53)	(0/63)	(0/68)	(0/96)

Research findings

Table 3: Model estimation and coefficients output of economic, legal and political variables

Independent variables	Dependent variable: Life insurance penetration: life premiums (GDP%)			
	Model 1	Model 2	Model 3	Model 4
B0	-5/004** (-6/66)	-4/24** (-6/68)	-5/18** (-5/63)	-4/57** (-9/26)
GDPCAP	0/61** (5/56)	0/58** (6/19)	0/65**	0/597** (8/31)
M ₂ /GDP	0/154** (3/006)	0/0032* (2/25)	0/0046* (2/45)	0/0037* (2/39)
UNE	0/01** (2/62)	0/008* (2/17)	0/015** (3/5)	0/136** (3/23)
INF	-0/0015**	0**	-0/027*	-0/052**
RL	(-3/86) 0/36**	(-4/07) -	(-2/56) -	(-4/45) -
RQ	(10/3)	0/104**	-	-
PS	-	(2/87)	0/136** (3/08)	- 0/293**
DEMOC	-	-	-	(4/06)
R ²	0/972 291/9	0/972 298/5	0/974 313/7	0/973 307/9
F-Statistic (prob)	(0/00)	(0/00)	(0/00)	(0/00)

Source: Research findings, *,**Coefficients are significant at 1 and 5 level, respectively

to the results obtained for F value calculation in Table 2, the null hypothesis was rejected and selection of panel data analysis was accepted for model estimation. Further, to choose between using fixed effects method (explanatory variables in sections are correlated) and random effect (explanatory variables in sections are not correlated), Hausmen-F was used to test the relevant hypothesis. Moreover, the Boy's sectional dependency test was used to evaluate the relationship between the sections through measuring pair correlation coefficients as shown in Eq. 6.

$$CD = \sqrt{\frac{2T}{N(N-1)}} \left(\sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij} \right) \quad (6)$$

where, T is time series and N is number of countries. The test statistic of dependence between the cross sections in Table 2 indicates a lack of dependence between the observed sections in present study.

The model estimation results in Table 3, show that the legal environment including rules and Regulations Quality (RQ) and Rule of Law (RL) have positive and significant effect on the life

insurance demand. Further, results show that the political environment including Political Stability (PS) and democracy (DEMOC) have positive and significant impact on life insurance demand. The coefficients value of economic variables extracted from model estimation in Table 2 including GDP per capita, financial development index and unemployment rate indicate positive and significant effect on life insurance demand as well.

DISCUSSION

Increasing demand for life insurance investment requires a sound economic, legal and political environment. Creating such an environment could certainly promote life insurance market towards a dynamic and effective financial market. In this regard due to close relationship between life insurance market and economic activities of the society, legal and political institutions are considered factors affecting these two sectors and ultimately development of life insurance investment. Estimation of the proposed model in this study showed that the legal environment including rules and Regulations Quality (RQ) and Rule of Law (RL) have positive and significant effect on the life insurance demand. This result is consistent with theoretical expectations of the study and findings of Feyen *et al.* (2011), Nesterova (2008), Ward and Zurbruegg (2002) studies. Improvement of good governance, rules and regulations in life insurance market leads to facilitate insurance activities and contracts. For better performance of life insurance market it requires an accurate rule, transparent regulation and existence of fair judicial system that facilitates life insurance contracts to execute in optimized manner for insurance investors.

The study showed that the legal environment including rules and regulations quality and rule of law have positive and significant effect on the life insurance demand and it confirms the study of Dicey (1927) as he stated that the judiciary as a legal entity, supports property rights including material and spiritual assets of insurer under the terms of the contract and the law. The results also showed that the political environment including political stability and democracy have positive and significant impact on life insurance demand. This result confirms to the studies of Ward and Zurbruegg (2002) that document a vibrant life insurance market depends to a large extent on the institutional framework and political stability of a country. If fraud is common in claims reporting, insurance becomes prohibitively costly for a large part of the population. Political stability of states provides peaceful and secure environment for economic activities that increases incentives for investment in productive activities such as long-term life insurance investment. Presence of political stability and democracy in developing countries would certainly effect on life insurance industry in both sides. First, the life insurance holders achieve well bargaining power while facing with government economic decisions and policy makings and second, the private sector companies in life insurance industry get the opportunity to participate effectively in financial market to face increased demand of the society for life insurance. Lack of political any stability shortens the economic horizon of both potential buyers and suppliers of life insurance products, dampening the development of a healthy life insurance market. This result exactly confirms the results derived by Erbas and Sayers (2006).

Economic variables including GDP per capita, financial development index and unemployment rate showed positive and significant effect on life insurance demand also which confirms findings of Chui and Kwok (2009), Li *et al.* (2007), Diacon (1980) and Beck and Webb (2003). Increase in per capita income stimulates the purchasing power of the people and enables them to allocate considerable part of their savings in life insurance program. Moreover, it has been found that financial development including banking sector development is positively correlated with life

insurance penetration and therefore a limited financial market and lack of adequate credit facilities would be the biggest obstacle for development of long-term life insurance investment in the society. Though, the positive coefficient does not imply a causal effect on life insurance penetration but it shows a direct relationship between well-developed financial market and higher life insurance consumption in our cross-country analysis.

Considering the relationship between economic life condition of the people and the demand for life insurance demand, the study comes to the conclusion that with any rise in unemployment rate the demand for life insurance will increase in developing economies because lack of confidence and certainty about expected income in the future life. Therefore, the only way remained to deal with upcoming risk would be purchasing life insurance to secure the family during pension life insurance in the future. In general and based on findings of the study, it is recommended that in order to protect the rights of the insurer and guarantee their insurance contracts, the rule of law and fair judicial system should be well considered by the government in developing countries. Because of significant and positive effect of quality of laws and regulations on life insurance demand, it is necessary to pursue transparent unrestricted rules for better development of insurance market on one hand and take drastic steps for elimination of those rules and regulations that may restrict insurance contracts performance in the society. Lack of any property protection and contract enforcement hampers life insurer's ability to invest efficiently and control the price of their products.

Moreover it has been found that, weak governance tends to make risks more difficult to quantify which results in lower insurability and the structures and methods for reducing uncertainty is not developed and undermined by weak governance in countries under study that entails to low insurance coverage. Therefore, Governments in developing countries should try for bringing about a stable political environment to increase the penetration rate of life insurance investment within the society since it facilitates exchange of knowledge and provides more confidence among the investors internally and externally as well. Governments should pay well attention to create democratic and participatory society for the people as insurers in the decision-making processes, where extensive freedom of expression activities exists and investor's bargaining power to criticize so-called policies is valued.

In summary, the economic variables including GDP per capita, financial development index and unemployment rate with positive effects and inflation rate with negative effect are the most determinant predictors of life insurance consumption across developing countries over time. In addition, the regulatory variables including the governance of law and quality of rules and regulations, the political factors including issues of political stability and democracy have positive and significant effect on life insurance demand.

ACKNOWLEDGMENT

Authors would like to express their thanks and appreciation to the Iran Research Institute of Insurance for its cooperation and mutual support of this research.

REFERENCES

- Beck, T.H.L. and I. Webb, 2003. Economic, demographic and institutional determinants of life insurance consumption across countries. *World Bank Econ. Rev.*, 17: 51-86.
- Browne, M.J. and K. Kim, 1993. An international analysis of life insurance demand. *J. Risk Insurance*, 60: 616-634.

- Catalan, M., G. Impavido and A. Musalem, 2000. Contractual savings or stock market development: Which leads? Policy Research Working Paper No. 2421, Department of Financial Sector Development, World Bank, Washington, DC., USA.
- Chui, A.C.W. and C.C.Y. Kwok, 2009. Cultural practices and life insurance consumption: An international analysis using globe scores. *J. Multinational Financial Manage.*, 19: 273-290.
- Diacon, S.R., 1980. The demand for UK ordinary life insurance: 1946-1968. *Geneva Papers Risk Insurance*, 5: 3-22.
- Dicey, A.V., 1927. *Introduction to the Study of the Law of the Constitution*. 8th Edn., Macmillan, London, UK., Pages: 577.
- Enz, R., 2000. The S-curve relation between per-capita income and insurance penetration. *Geneva Papers Risk Insurance*, 25: 396-406.
- Erbas, N.S. and C.L. Sayers, 2006. Institutional quality, knightian uncertainty and insurability: A cross-country analysis. International Monetary Fund, Working Paper No. WP/06/179, pp: 1-13. <https://www.imf.org/external/pubs/ft/wp/2006/wp06179.pdf>.
- Feyen, E., R. Lester and R. Rocha, 2011. What drives the development of the insurance sector? An empirical analysis based on a panel of developed and developing countries. The World Bank, Policy Research Working Paper No. 5572, USA.
- Hakansson, N.H., 1969. Optimal investment and consumption strategies under risk, an uncertain lifetime and insurance. *Int. Econ. Rev.*, 10: 443-466.
- Li, D., F. Moshirian, P. Nguyen and T. Wee, 2007. The demand for life insurance in OECD countries. *J. Risk Insurance*, 74: 637-652.
- Nesterova, D., 2008. Determinants of the demand for life insurance: Evidence from selected CIS and CEE countries. Master's Thesis, National University of Kyiv-Mohyla Academy of Ukraine.
- Outreville, J.F., 1996. Life insurance markets in developing countries. *J. Risk Insurance*, 63: 263-278.
- Sigma, 1999. Asia's insurance markets after the storm. Swiss Re-Working Paper No. 5.
- Sigma, 2000. Emerging markets: The insurance industry in the face of globalization. Swiss Re, No. 4, Zurich.
- Skipper, Jr. D.H., 1998. Foreign insurers in emerging markets: Issues and concerns. Occasional Paper 97-2, Center for Risk Management and Insurance, Washington, DC., USA. <http://rmictr.gsu.edu/Papers/FOREIGN.pdf>.
- Soo, H.H., 1996. Life insurance and economic growth: Theoretical and empirical investigation. Ph.D. Thesis, Department of Economics, University of Nebraska, Lincoln.
- Ward, D. and R. Zurbruegg, 2000. Does insurance promote economic growth? Evidence from OECD countries. *J. Risk Insurance*, 67: 489-506.
- Ward, D. and R. Zurbruegg, 2002. Law, politics and life insurance consumption in Asia. *Geneva Papers Risk Insurance*, 27: 395-412.
- Webb, I., 2000. The effect of banking and insurance on the growth of capital. Ph.D. Thesis, Georgia State University, College of Business Administration, Atlanta.
- Williamson, O.E., 2000. The new institutional economics: Taking stock, looking ahead. *J. Econ. Literature*, 38: 595-613.
- World Development Indicators, 2012. World development indicators on CD-ROM. The World Bank, Washington, DC, USA.
- Yaari, M.E., 1965. Uncertain lifetime, life insurance and the theory of the consumer. *Rev. Econ. Stud.*, 32: 137-150.
- Ziv-Av, D., 2006. Competition versus regulation in the insurance market: A law and economic analysis of policy and institutes. Master's Thesis, University of Hamburg, Hamburg, Germany.