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Determinants of insurance contributing to economic growth of Nepal

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Abstract: *this study investigates determinants of insurance sector contributing to the economic growth of Nepal. Annual time series data of variables are taken from FY 2000 to 2018. OLS regression is used to determine the relationship between explanatory variables (total insurance premium & investment) and response variable (GDP as proxy of economic growth). Natural logarithms of variables are taken in order to make equation linear. Further, the result and analysis finding shows that insurance premium is positively significant to GDP and investment is also positively significant to GDP, which concludes insurance sector has positive and statistical significant relationship with economic growth. Hence, determinants of insurance sector contribute to the economic growth of Nepal.*

Keywords: Insurance, Life insurance, Non-life insurance, Reinsurance, total premium, investment, economic growth

Introduction

Insurance is a risk management mechanism to cover or get protection against financial loss; it is primarily taken to hedge against the risk of a contingent loss. An entity that is providing insurance is called insurer, insurance carrier or insurance company. A person or entity who buys insurance is known as policy holder or an insured. The insured receives a contract, which details the terms, condition and circumstances under which the insurer will compensate the insured. Premium is said to be the sum of money charged by the insurer to the policy holder for the coverage set forth in the insurance policy. Generally there are broad range of insurance and their classification. They can be classifying in 3 major categories Life Insurance, Non-Life Insurance, and Reinsurance. Life insurance is a contract in which insurer promises to pay a designated beneficiary a sum of money in exchange for premium; policy holder typically pays a premium either regularly or as one lump sum. Upon the death of an insured person. Non-life insurance or General insurance is insurance other than Life insurance.in which there is an insurance contract between policy holder and insurer, where the insurer promises to pay depending on the loss from financial event. It is taken as a means of providing financial protection for building, machinery, equipment, furniture, and vehicle and merchandise items against risk of fire, theft and accident. Reinsurance or stop loss insurance or also known as insurance for insurers; it is a practice whereby insurers transfer portions of their risk to other insurance parties by some form of contract to reduce the likelihood of paying a large sum of obligation resulting from an insurance claim. The one who diversifies its insurance portfolio is known as the ceding party. The party that accepts a portion of potential obligation in exchange for a premium is known as the reinsurer.

Role of insurance

Insurance plays a very significant role in developing economies, which are of two folds: first, to provide a strong safeguard in protecting loss of live and damage of properties; and second, to develop a system to accumulate adequate funds for investment and capital formation. A sound and healthy insurance sector is a necessary condition for the smooth functioning of economy and achieving sustainable and inclusive growth in the long run.

In simple words, the economy and society as a whole benefit from the certainty insurance brings through the following ways:

- Efficiently protecting through innovative risk management techniques.
- Freeing up business and professionals from everyday risks and encouraging innovation and competition.
- Relieving the burden from the state and providing comfort to individuals by providing safe, effective and affordable pension savings, protection and diversified products that convert pension saving into retirement income.

History of Nepalese insurance sector starts with the first general insurance company named “Nepal Insurance and Transport Company” established in 1947 which is currently known as Nepal Insurance Company. Rastriya Beema Sansthan is only composite of both life and non-life insurance company which was established in 1968 and started non-life insurance business in same years but started life insurance business from 1972.Before 1947, large amount of premium was collected by Indian insurance companies for long time. After establishment of life insurance Company by government of Nepal, Indian companies stopped to collect their premium and phased out their business in Nepal. Current scenario of Nepal, Till Mid-march of financial year 2018-2019, the total number of insurance companies has been 40 including 19 Life insurance companies, 20 Non-life insurance companies and 1 Reinsurance company.

The penetration rate of insurance industry in Nepal is lower than the standard as compared to other south Asian countries, in developed nation the insurance contribution to their GDP has reached substantial percentage for example U.K. (12.8%), USA (11.2%), Japan (7.6%), India (3.6%) whereas Nepal current premium penetration is around 1.5 % of GDP (OECD,2017). Despite the critical role and significance played by the insurance sector in economic growth, large number of research analysis has given logical evidence that insurance sector contributes to economic growth but only few articles are written in context of Nepal ,the study tries to examine the contribution of insurance companies in economic growth of Nepal. The study will further help to show trend analysis of insurance market development in relation to total premium collect and investment done by insurance sector.

The paper is organized as follows first section is introductory; section second presents the review of literature. Similarly section third presents data and methodology followed by fourth section which discusses the results. Fifth section concludes the study and suggestions; last section enlists references of the study.

Literature review

The relationship between insurance sector and economic growth has become a valuable topic for research because of the significant role it plays in an economy. The financial system has been recognized as an important sector in economic growth of the country. Various theories have shown that there is a significant relationship between the financial system and economic growth, this review section possess of existing study regarding the relationship between insurance sector and economic growth.

(Arena, 2006) In his research paper tested whether there is a causal relationship between insurance and economic growth using GMM for the dynamic model & found the strong evidence that there is positive and statistical significant causal relationship between life and non-life insurance and economic growth. (Arena, 2008) applied dynamic panel data analysis in fifty five developing and a developed countries result shows that life and non-life insurance positively affects economic growth in developed and developing countries. But they conclude that life insurance affects economic growth only in developed countries.

(Kugler & Ofoghi, 2005) in their research paper “Does insurance promote economic growth?” Authors used co-integration approach, results shows that there was a causal relationship between economic growth and insurance sector in both long run and short run. Similarly, (Adams & Lindmark, 2009) used co integration and causality test which conclude that there is a positive effect between the developments of banking sector, insurance sector to the economic growth of Sweden.

(Ward & Zurbruegg, 2000) Studied Nine OECD countries and concluded that in a section of the relevant countries, the insurance sector to economic growth, another section of the insurance industry have achieved the right result in a causal relationship.

(Verma & Gholia, 2013) by using OLS regression model investigate the relationship between life insurance and economic growth. Diagnostic test were done to check the robustness of OLS regression model. The empirical study reveals that life insurance has positive and significant relationship with economic growth of India.

(Gurung, 2010) Study reveals that the growth of insurance policies for both life and non-life insurance companies has been increasing and significant during the study period, moreover, the investment of insurance companies has been positive but fluctuating over the period under the study. The correlation coefficient between total premium collection and total investment was positive with R-square 0.97. These results conclude that the performance of insurance business in Nepal is satisfactory.

(Thapa & Neupane, 2065) Argued that the insurance sector’s business in Nepal started to expand because many firms were established and the public became aware of the businesses. As a result, many people were involved in it which ultimately contributed to the nation development. At that time they found there were around 19 insurance companies (both life and non-life) working in Nepal. Insurance companies collect the savings of the public in the form of premium and then invest it in the form of capital on a long term basis in development projects together with mitigating from various types of risks.

(Pant & KC, 2017) in their research paper found evidence suggesting that insurance may contribute to economic growth by creating investment climate and managing risk in more efficient way, theoretically, the studies show insurance has positively contribute to different levels of development. Similarly, (Ghimire, 2017) in his research paper ‘‘Contribution of insurance industries in economic development of Nepal” said that insurance mobilizes resources collecting small amount of fund in terms of premium and provides large amount of fund to government and private sector. Insurance address the requirement of medium and high income class people, but large portion of low income and poor people are excluded from the insurance services, further researcher concludes that insurance has played positive role in economic development of Nepal.

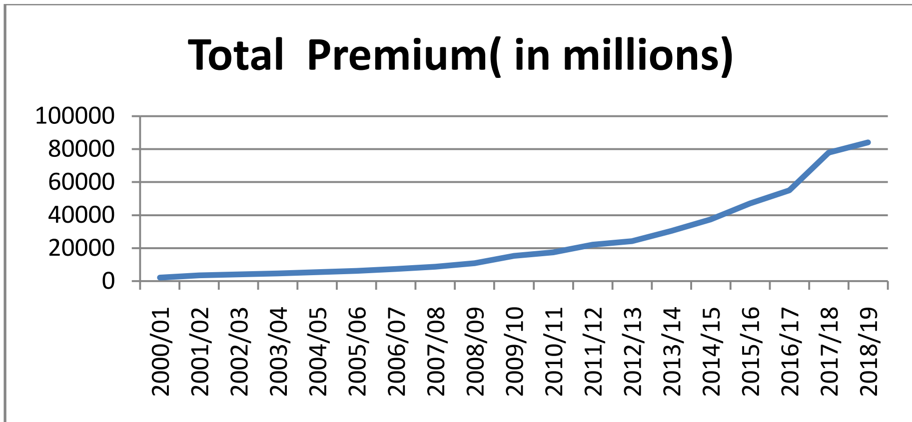
Data and Methodology

Data sources

In this research paper, five macroeconomic variables have been taken to examine the contribution of insurance in an economy. Total insurance premium collected, life insurance premium, Non-life insurance, investment and gross domestic product. The paper is based on secondary data which has been collected from annual reports and publication of insurance board of Nepal (Beema Samiti), economic survey an annual publication of government of Nepal, published by ministry of finance. The study is based on the annual time series data of 18 years from FY 2000 to FY 2018.

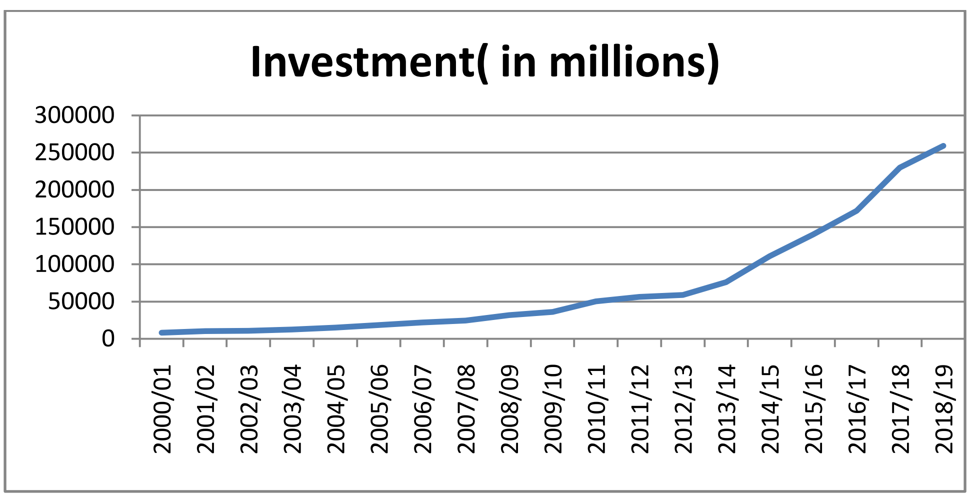
Determinants of insurance sector

Total insurance premium: Insurance premiums are the primary source of income for any insurance companies. Collection of premiums is done on issuance of policies to individuals and firms, these accumulated premium forms capital which is further mobilized into long term investment.it includes annual total premiums of life insurance premium and non-life insurance premium both from FY 2000 to FY 2018.the increases in collection of premiums shows the growth in insurance sector.



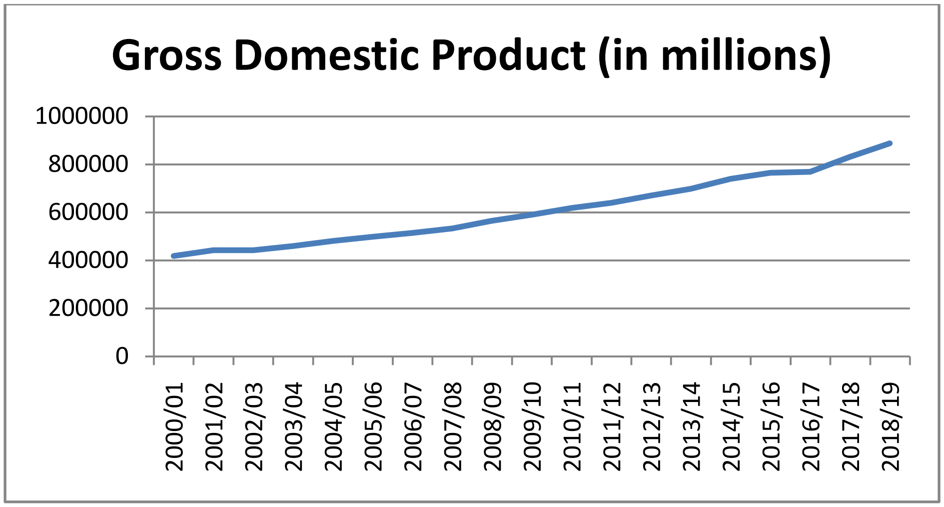
Graph 1 (source: insurance board)

Investment: Insurance companies channelize the premiums into long term investment by investing in productive sectors. Investment is the driving factor for infrastructure of development, the level of investment and quality of investment will directly influence the rate of economic growth. As a risk transfer mechanism, insurance sector channelized the savings into long term investment. The graphical presentation shows annual data of the increase in investment by insurance companies into productive sector from FY 2000 to FY 2018.



Graph 2 (source: insurance board)

Gross domestic product: GDP is the total market value or monetary value of all the finished goods and services produced within a nation territory in a specific time period, it functions as a comprehensive scorecard of the country's economic performance. Graphical presentation shows annual time series data from FY 2000 to FY 2018.



Graph 3 (source: economic survey)

Model

In this research paper, Ordinary least square (OLS) regression is applied to examine the relationship between explanatory variable and response variable. OLS regression is a statistical method of analysis that estimates the relationship between one or more independent variables and dependent variable; the method helps to estimate the relationship by minimizing the sum of the squares in the difference between the observed and the predicted value of the dependent variables configured as straight line.

The formula equation is as follow:

$$Yi = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \ \ldots\ldots\ldots\ldots + \beta_p x_{ip} + \epsilon$$

where,

Yi =dependent variable

Xi=independent variable

β0=intercept (constant)

βp= slope coefficient of independent variables

ϵ= error (residuals)

In this research paper following function is used:

GDP = F (PREM, INV)

Natural logarithm of variables is taken in order to make equation linear. Linear equation helps to make trends visible and describes the relationship between variables.

$$LnGDP = \beta_0 + \beta_1 LnPREM + \beta_2 LnINV + \in$$

Where,

$LnGDP$= (Response variable) natural logarithm of Gross domestic product

β_0 = constant (intercept)

$\beta_1 LnPREM$= coefficient of natural logarithm of total insurance premium.

$\beta_2 LnINV$= coefficient of natural logarithm of investment

$\in$ = error (residuals)

Result and discussion

Following are the result which has been drawn from using Eviews 10, in which annual time series data from FY 2000 to FY 2018 has been taken and least square method in used to examine the relationship between dependent and independent variables.

Dependent Variable: LNGDP

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	22.07411	0.094459	233.6887	0.0000
LNPRM	0.107689	0.037145	2.899153	0.0105
LNINV	0.103003	0.037206	2.768413	0.0137

R-squared	0.995413	Mean dependent var	27.10832
Adjusted R-squared	0.994839	S.D. dependent var	0.232935
S.E. of regression	0.016734	Akaike info criterion	-5.198823
Sum squared resid	0.004480	Schwarz criterion	-5.049701
Log likelihood	52.38882	Hannan-Quinn criter.	-5.173586
F-statistic	1735.892	Durbin-Watson stat	1.246502
Prob(F-statistic)	0.000000		

Table 1 (source: Author calculation)

LNGDP = 22.07411 + 0.107689 LNPRM + 0.103003 LNINV + E

The above analysis projects R-square 0.995413 or 99.54 % which interpret that 99.54% of dependent variable is explained by independent variables and remaining 0.46% by other variables. Adjusted R-square is 0.99483 or 99.48 % which shows how closely the data are fitted to the regression line (Goodness of fit). The prob(F-statistics) is 0.00 which is lower than 0.05 0r 5 % which means overall model is statistically significant.

Further, The Coefficient of independent variable or explanatory variable, LNPREM is positive 0.107689 which suggests 1 percent increase in premium leads to 0.107689 point increase in gross domestic product. Similarly, the coefficient of LNINV is positive 0.103003 which suggests 1 percent increase in investment from insurance sector results to increase in o.103003 point increase in gross domestic product.

Diagnostic test

In order to evaluate the adequacy of the model specification diagnostic test are performed, three diagnostic tests are ran in order to evaluate the adequacy. Breusch –Godfrey Serial correlation test, Heteroskedasticity test and Normality test.

Auto correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.443462	Prob. F(1,15)	0.2482
Obs*R-squared	1.667884	Prob. Chi-Square(1)	0.1965

Table 2 (source: Author calculation)

Null hypothesis: there is no serial correlation

Alternative hypothesis: there is serial correlation

Result: prob. Chi square is greater than 0.05. so,we accept null hypothesis.

Heteroscedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.140293	Prob. F(2,16)	0.1501
Obs*R-squared	4.010295	Prob. Chi-Square(2)	0.1346
Scaled explained SS	2.391976	Prob. Chi-Square(2)	0.3024

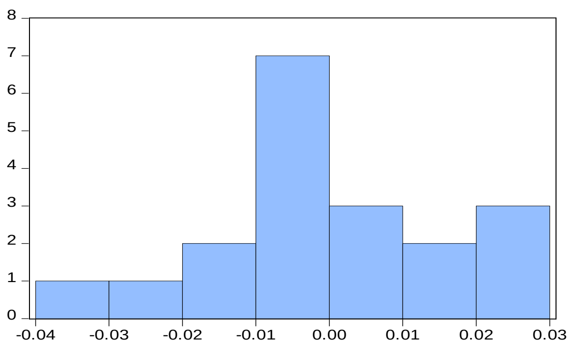
Table 3 (source: Author calculation)

Null hypothesis: there is no Heteroskedasticity

Alternative hypothesis: there is Heteroskedasticity

Result: Prob. Chi square is greater than 0.05 which means we cannot reject null hypothesis so, we accept null hypothesis, which conclude that there is NO problem of Heteroskedasticity.

Normality test



Series: Residuals	
Sample 2000 2018	
Observations 19	
Mean	7.74e-15
Median	-0.001276
Maximum	0.027610
Minimum	-0.033846
Std. Dev.	0.015777
Skewness	-0.132829
Kurtosis	2.682201
Jarque-Bera	0.135827
Probability	0.934341

Table 4 (source: Author calculation)

Null hypothesis: residuals are normally distributed

Alternative hypothesis: residuals are not normally distributed

Result: prob. Value is greater than 0.05 which means we cannot reject null hypothesis, so we accept null hypothesis which conclude residuals are normally distributed.

Conclusion

The result and analysis concludes that there is a positive and significant relationship between explanatory variables (i.e. Total insurance premium and investment) and response variables (GDP as a proxy of Economic growth). This further tells that percent increase in explanatory variables results in increase in percent of economic growth. Which concludes insurance sector does contribute to the economic growth. Nepal’s premium penetration is around 1.5 % of GDP which is far lower than the standard of other developed countries. Some of the reasons of low performance of insurance sector are as follows; lack of awareness about the benefit of insurance, Government is not giving it much priority as they should, lack of product diversification etc. But the two of major highlights that can be drawn from this paper is First, increase in collection of insurance premium positively contribute to increase in gross domestic product so insurance sector should collect more premium by covering large market. As we know insurance in Nepalese economy plays only a small role because it only covers small market, insurance sector should provide services targeting low and middle income customers. So, that large number of customers can mitigate their risk and contribute to investment made by insurance companies this will also help to generate employment in the economy as insurance companies needs agent, brokers etc. Second, increase in investment also has positive relationship with GDP, which implies increase in investment by insurance sector do increase its contribution to the GDP. As we know Nepalese financial system has various participant financial institutions such as Banks, insurance companies, finance companies and financial market. The collaboration of bank and insurance company (Banca assurance) will help the banks to solve liquidity crunch problem as insurance companies being cash rich are capable to produce liquidity to the banks in return for sales of their products. Financial market of Nepalese economy is in progressive stage, secondary market is doing well but Bond and derivatives are still in infant stage a lot has to be done so, insurance sector should invest in bond market and should channelize fund to other productive sector, which will contribute to economic development by allocating funds and capital to the needy. Bond insurance can help to develop the reach of insurance sector to bond market it is a contract in which bond issuer purchase and guarantees the repayment of principal and interest payments to the bondholders in the event of default. In order to accelerate the insurance sector awareness campaign should be done to cover low and middle level income customer, Government policies should prioritize insurance sector by introducing favorable policies targeting development of insurance sector and in closing, insurance companies should provide different product or product diversification.

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