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CONTENTS

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STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

SCOPE FOR FURTHER RESEARCH

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APPENDIX/ANNEXURE

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- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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THE RELATIONSHIP OF INSURANCE SECTOR DEVELOPMENT AND ECONOMIC GROWTH IN ETHIOPIA: EMPIRICAL EVIDENCE

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ABSTRACT

This study examines empirically the relation between insurance and economic growth in Ethiopia using time-series data from 1981 to 2010. The study examines long-run historical trends in the data using econometric tests for co-integration and Granger causality. Granger causality tests find evidence that, though they have long term relations, the developments of insurance and economic growth in Ethiopia are not casually related during this period. Therefore, the study conclude that Insurance is not an important prerequisite for stimulating economic growth and as the same time economic growth do not bring insurance development. The researcher suggested that further study need to be conducted to identify the factor for this and argue that the results could have important policy implications for Ethiopian economies that are developing their insurance and legal infrastructures. The reason may be attributed to effectiveness and efficiency of insurance institution and /or government regulations.

KEYWORDS
Relationship of insurance sector development, economic growth, in Ethiopia, empirical evidence.

1. INTRODUCTION

This study examines the dynamic historical relation between insurance development and economic growth in Ethiopia using time-series data from 1981 to 2010.

One of the debates in growth theory is the extent to which Insurance development leads to economic growth. It is not implausible to posit a positive correlation between growth in the insurance and real sectors. However, the causal relationship is not clear. Which is the cause and which is the effect? Is insurance development the leading engine for economic development or does it simply follow growth from elsewhere? Or has no causal relationship between them?

For instance, Hansson and Jonung (1997), Wachtel and Rousseau (1995), Rousseau and Wachtel (1998), Ward and Zurbruegg (2000), amongst others, have pointed out that economic growth can be either supply-led as a result of development in financial intermediaries like insurance companies, or alternatively, economic growth can promote the public demand for financial services like insurance. In fact, the question of whether the financial services sector preceded or followed economic growth has for a long time been debated in the economic history literature (e.g., see Sandberg, 1978, 1979; Nygren, 1983; Hansson and Jonung, 1997; Schön, 1988, 1995; Pearson,1992, 1993; Rousseau and Sylla, 2005).

Similarly, in the financial economics literature, there is no clear empirical evidence on the direction of the causal relation between the development of insurance markets and economic growth (e.g., see Outreville, 1990, p. 491 and Ward and Zurbruegg, 2000, p. 490).

Therefore, empirical studies need to be conducted to establish this causality. No time series study has been performed on Ethiopia. This study thus contributes to the literature by shedding light on the empirical linkage between insurance development and economic growth over the 30 years from 1981-2010 in Ethiopia.

The paper is organized as follows. Section I considers the theories and recent studies that provide for a link from insurance development to economic growth and arguments to the contrary. Section II contains a summary of the data used and the Insurance development and economic growth measuring variables. Section III describes the empirical methodology for conducting the tests. Section IV presents the results of these tests. Section V concludes.

SECTION I: INSURANCE DEVELOPMENT AND ECONOMIC GROWTH

Insurances are important for growth. As economists since Goldsmith (1969), McKinnon (1973), and Shaw (1973) have shown, insurance development and economic growth are positively correlated across countries. Schumpeter ([1911], 1936) wrote that insurance market promote growth by identifying and redirecting funds toward innovative projects. "The essential function of credit . . . consists in enabling the entrepreneur to withdraw the producers' goods which he needs from their previous employments, by exercising a demand for them, and thereby to force the economic system into new channels" (Schumpeter, page 106). This "supply leading" argument says that insurance development is a determinant of Economic growth. This is accomplished by the mobilization of savings and efficient allocation of resources; mitigation of the problem of asymmetric information, and monitoring of firms; and management of risk and reduction of transaction costs, among others.

The opposing argument is that the causality runs the other way: economic growth creates a demand for insurance development. The creation of modern insurance institutions and services is then a response to the demand from investors and savers in the economy (See Dolar and Meh, 2002 for more discussion).

THE INFLUENCE OF INSURANCE COMPANIES ON ECONOMIC GROWTH/SUPPLY LEADING

Ward and Zurbruegg (2000) and Kugler and Ofoghui (2005) report that in offering risk transfer, indemnification for unexpectedly large losses and financial intermediary services, insurance markets have had a significant productive impact within economies. For example, insurance can help to promote investment in productive assets by providing surety to investors and other contractual claimants (e.g., banks) that the value of the investment is protected against unanticipated severe losses (such as those arising from fire and flood damage). McMinn (1987) reports that insurance can provide an important post-loss financing function and mitigate agency problems, such as the underinvestment incentive, that can occur in (particularly highly levered) companies that suffer a large asset-loss. This leads to insurance having positive externalities in terms of employment creation, increased economic activity, and business innovation (technology) and risk-taking. Moreover, in efficient insurance markets, the setting of actuarially fair insurance prices will compensate for negative externalities such as the moral hazard problems arising from excessive risk-taking as a consequence of insurance (Rothschild and Stiglitz, 1976). Actuarial fair pricing should also help to facilitate the efficient accumulation of productive capital and provide a spur to economic growth (Ward and Zurbruegg, 2000). Additionally, Butler, Gardner and Gardner (1998) have shown that compensation insurance and sickness benefits has had significant moral hazard consequences as a result of increased absenteeism and produced reduced levels of productivity in the economy. Ward and Zurbruegg (2000) add that as major institutional investors, insurance companies not only help the efficient allocation of capital in an economy but also enhance returns on their investments through active monitoring of managerial activities and corporate governance. This reasoning leads us to ***HYPOTHESIZE*** that:

H1: Other things being equal, the insurance market directly influences economic growth.

THE INFLUENCE OF ECONOMIC GROWTH ON INSURANCE MARKET/DEMAND FOLLOWING

As noted earlier in introduction, the direction of causality between insurance and economic growth can run both ways. That is, financial intermediation may not only facilitate economic growth by providing credit facilities, risk transfer, loss indemnification, and so on, but conversely, it could be the case that economic growth creates the demand for insurance – for example, supplying investment funds and protecting accumulated productive capital against unanticipated losses

(Fohlin, 2002). As Hansson and Jonung (1997) point out, both lines of reasoning are plausible theoretically and so empirical analysis is needed to resolve the issue with regard to insurance. Ward and Zurbruegg (2000) contend that the risk management and financial intermediary benefits of insurance, and their impact on economic growth could persist over time. On the other hand, Rousseau and Wachtel (1998) contend that in developed economies insurance intermediation may become a relatively less important influence on economic growth as insurance markets become more advanced. Wachtel and Rousseau (1995) and Rousseau and Sylla (2005) provide empirical support for this view from their historical analysis of financial systems and economic development in Anglo-American countries. In the debate concerning the causal linkage between insurance intermediation and economic growth, Kindleberger (1982) argues that in the nineteenth century the demand for insurance services emerged directly from the rapid economic growth. King and Levine (1993) also suggest that economic development (that may be prompted by public as well as private sector investment) could stimulate the demand for ancillary services such as insurance. Moreover, Gelderblom and Jonker (2004) observe that to facilitate economic growth the demand for consumer and commercial credit has to be met by a ready supply of funds (savings). In their capacity as financial intermediaries insurance companies can also play an important role in the accumulation and investment of capital in the economy (Ward and Zurbruegg, 2000). Therefore, it is plausible that the growth of insurance services was stimulated by economic growth. That is, the demand for insurance is income elastic. For instance, in Sweden using Swedish economic data from 1861 to 1910 Fisher and Thurman (1989) in fact find that the growth of the insurance sector was caused by, not the cause of, economic growth. However in Ethiopia there is no empirical evidence on this issue. So I thus present the ***HYPOTHESES***:

H2: Other things being equal, economic growth directly influences the insurance market.

H3: Other things being equal, the insurance market and economic growth has no causal relationship.

RECENT EMPIRICAL STUDIES

Both lines of causation seem plausible and an empirical analysis is needed to resolve the issue. In a study of 80 countries, King and Levine (1993) find a robust correlation between insurance development and economic growth. They conclude that predetermined values of insurance development are a good predictor of economic growth over the next ten to thirty years, affirming the supply leading argument. Goldsmith (1969) analyzed data from thirty-five countries over the period from 1860 to 1963 and found that insurance and economic development are positively correlated over periods as long as several decades. Insurance development is measured in his study by the insurance penetration. However, it is an open question whether insurance development leads to economic development or vice versa, because each has feedback effects on the other. In a later study Goldsmith (1985) shows that insurance development largely occurs during the early stages of economic development when countries have low levels of income. However, Besci and Wang (1997) point out that even though insurance development occurs early and may precede economic growth; it is unclear that it provides causality in an economic sense.

While studies have been done to examine causality, their estimation procedures do not explicitly confront the potential biases induced by simultaneity or omitted variables, including country-specific effects. These cross-country regression estimates have not exploited the time-series dimension of the data. Also, they do not control for the endogeneity of all the regressors. There are at least three reasons why the causality may vary for individual countries. First, insurance institutions may be more efficient in one country versus another, thus better able to promote real growth. Second, insurance sector policies and regulations also differ across countries. Third, postulated by Levine, Loayza and Beck (2000), is that the effectiveness of the government also plays an important role.

Numerous regression studies, such as the ones by Fernandez and Galetovic (1994), Graff (1999), Arestis and Demetriades (1996), conducted on a smaller subset of countries have also led to conflicting results on this causality, with some indicating reverse causality (demand following) and others resulting in insignificant parameters. It is generally thought that country specific studies need to be conducted to further resolve the issue. A study by De Gregorio and Guidotti (1995) notes that over time, the correlations between insurance development and economic growth are stronger in the early stages of development and are diminished or even eliminated for OECD countries. They also show that the effect of insurance development on growth becomes weaker as countries become more developed, perhaps because of problems with measuring insurance development or because insurance intermediaries actually have larger effects in less-developed countries than in more developed ones.

In a study of twelve countries, Arestis and Demetriades (1996) show that the direction of causality depends on the variable used and that each country exhibit different results. These results do not exhibit a pattern for developed or developing countries. This confirms the hypothesis that institutional considerations and policies of countries do play a role in the relationship between insurance and growth. They suggest that insurance markets differ across countries in their cost efficiency and the degree of competition, all of which might affect their roles in economic efficiency and growth.

Zhi Zhuo (1998) is focusing on China and conducts a cross-regional study for 1995 and a time series analysis for the period 1986 to 1995. In accordance with other findings both the cross-regional and the time series analysis show that GDP per capita and consumer price index are significantly correlated with insurance consumption. Further the children dependency ratio is important, whereas the education level is not causally related.

Browne, Chung & Frees (2000) apply a pooled cross-sectional panel model to motor vehicle and general liability insurance in the OECD over the 1986-1993 periods. They regress liability insurance consumption on a variety of factors, including income, wealth and the legal system. Income and the legal system are positively correlated to insurance consumption, while loss probability and wealth are negatively correlated with insurances consumption. Foreign firms in the market and risk aversion are positively connected to motor vehicle insurance consumption and hence contrary to general liability consumption. Browne et al (2000) argue that income is affecting insurance consumption. The correlation with risk aversion is statistically insignificant for motor vehicle insurance consumption and negatively connected in the cross-sectional model for general liability insurance consumption.

Ward and Zurbruegg (2000) analyse Granger causality between total real insurance premiums and real GDP for nine OECD countries over the 1961 to 1996 period. For two countries (Canada, Japan) the authors found the insurance market leading GDP and for Italy they found a bidirectional relationship. The results for the other countries (Austria, Switzerland, the U.K. and U.S) showed no connection. Results from the Error-Correction model depict similar results and adding Australia and France to the group of countries giving evidence for some kind of connection. In interpreting the findings, the authors refer to cultural predispositions towards uncertainty avoidance (Hofstede, 1995; Fukuyama, 1995) and resulting propensity for insurance and the effects of regulation. Furthermore they offer differing insurance density and its dynamic growth as another possible explanation.

Webb, Grace & Skipper (2002) use a Solow-Swan model and incorporate both the insurance and the banking sector, with the insurances divided in property/liability and life products. Their findings indicate that insurance intermediation is significant. When split into the three categories banking and life insurance sector remain significant for GDP growth, while property/liability insurances lose their importance. Furthermore results show that a combination of one insurance type and banking has the strongest impact on growth.

Boon (2005) investigates the growth supportive role of commercial banks, stock markets and the insurance sector. The author's findings show short and long run causality running from insurance to GDP, and a bidirectional relationship between capital formation and loans. GDP growth seems to enhance stock market capitalization in the short run and the market capitalization enters significantly when determining the capital formation in the long run. Total insurance funds affect GDP growth in the long and capital formation in the short and the long run

CONSEQUENCES

Economists have examined various explanations for growth, including the role of financial intermediaries such as insurance. This emphasis has accompanied big strides in understanding insurance. In terms of policy, if insurance exert an economically large impact on growth, then this raises the degree of urgency attached to legal, regulatory, and policy reforms designed to promote insurance market development. Since even small differences in growth rates upheld over generations will cause appreciable differences in living standards, finding policies that matter becomes crucial. There has been a great deal of skepticism about the conclusions drawn from cross country regressions. The failure to account for time series properties, endogeneity and omitted variable bias were mentioned previously. In addition, Arestis and Demetriades (1997) discusses econometric problems due heterogeneity of the slope coefficients across countries. Cross country regressions refer only to the "average effect" of a variable. This presents a crucial limitation to causality tests as there exists significant differences in causality patterns across countries, which can be detected by time series methods.

This study therefore uses time series econometrics to study the relationship between insurance and growth. Using a single country eliminates cross country variations that bias the results. Whereas previous studies simply used level variables without testing, unit root tests will be performed for each variable to ensure stationary to alleviate possible spurious regression. Time series studies have been conducted on US, UK and Japan, but none has been conducted on Ethiopia. Wachtel and Rosseau (1998) conducted their study on the US, UK, Netherlands, Japan using the insurance penetration as the measure of insurance development. This analysis is conducted on Ethiopia for the period 1981 to 2010 with the aim of establishing the long term causality relation between insurance development and economic growth. This study will be beneficial to the academic debate on the role of insurance development in overall economic growth. If evidence points to the supply leading hypothesis, establishing this linkage will be crucial to formulation of policies and the setting up of insurance institutions especially in developing countries. If empirical evidence supports the demand following hypothesis, then further research should be directed towards other factors which influence economic growth. If empirical evidence supports the no cause effect relationship hypothesis, then further research should be conducted to identify the reason why not cause effect.

SECTION II: DESCRIPTION OF VARIABLES AND DATA

Description of Variables: As a standard, real GDP per capita is used to measure real growth rates (2000 is used as the base year). A limitation of studies on the insurance sector is that there is no direct measure of insurance development or the quality of services provided. Therefore the traditional measure of insurance development, insurance penetration is used.

Natural logarithm transformations have been applied on all variables prior to analysis; hence coefficients on the level variables reflect elasticity. The first difference of the natural logarithms approximate growth rates of the variables. This transformation is convenient since all variables in their levels were later found to be unit root processes.

Description of Data: The data contains 30 observations for insurance penetration and GDP per capita from 1991 to 2010. The data obtained from the IMF's International Financial Statistics, National Bank of Ethiopia and Ethiopia's CSA. As expected, there is a strong positive correlation (0.89) between GDP per capital and insurance penetration. For 1981-2010, insurance markets show a strong positive correlation with GDP in Ethiopia as shown in table 1.

TABLE:1 CORRELATIONS BETWEEN INSURANCE PREMIUM AND GDP PER CAPITA

		Insurance premium	GDP per capita
Insurance premium	Pearson Correlation	1	.890**
	Sig. (2-tailed)		.000
GDP per capita (constant 2000 US$)	Pearson Correlation	.890**	1
	Sig. (2-tailed)	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

SECTION III: METHODOLOGY

Nearly all empirical studies of the relationship between insurance development and economic growth are confined to cross country studies in a regression framework. This technique, as well as others, is valid only if the variables are stationary or co integrated. A time series is said to be stationary if all the moments of the series (mean, variance, etc.) are independent of time. Non stationary series have a variance which is asymptotically infinite. When a linear combination of individually non-stationary series is stationary, then these are said to be co-integrated. The extent by which they diverge from each other will have stationary characteristics and will reflect only the disequilibrium stochastic nature of the data.

If non-stationary and non co-integrated series are estimated using the ordinary regression framework, a spurious regression results. The spurious regression problem arises in the case where truly unrelated series are seen to be related because of the fact that they share a common time trend. To avoid this problem, we need to ensure that the time series used are stationary or co integrated. Hence, tests for unit root and co-integration are conducted before proceeding with the Granger-causality tests.

Unit Root Tests: When testing for unit roots, the Augmented Dickey Fuller (ADF) test and the Phillips-Perron test (PP) are used. The null hypothesis in this case is the presence of unit root. Failure to reject the null hypothesis leads to conducting the test on the difference of the series. Further differencing is conducted until stationary is reached and the null hypothesis is rejected. As with the convention for annual time series, one lag lengths is used for the ADF test.

Co-integration Tests: If the variables are non-stationary, then the next step would be to determine if these variables are co-integrated. If a set of non-stationary variables are in fact co integrated, then their linear combination should be stationary. In a regression framework, the equilibrium error term et from the regression of the variables must be stationary. Thus, one can test the null hypothesis of non co-integration by performing the unit root tests on et. The Engle-Granger method of residuals-based testing is used.

Vector Auto Regressions (VAR): To test the null hypothesis that insurance development does not Granger cause economic growth, a VAR system is constructed. The vector autoregressive approach facilitates investigation of dynamic interactions among jointly endogenous variables in stationary multivariate systems without imposing *a priori* structural restrictions. A major advantage of this approach is that the investigator does not have to decide which variables are endogenous or exogenous. Moreover, problems associated with simultaneous equation models are avoided because VARs do not include current variables as regresses.

A VAR is a linear regression where:

$x_t = c + \Pi xi,t-1 + \Pi 1xi,t-2 + \ldots + \Pi t-p+1xi,t-p+1 + \varepsilon_t$ t=1,2…p i=1,2…m where c is a constant and x_t is a vector of 1xm variables in the system.

A VAR is a system where each variable is regressed on a constant and its own p lags as well as p lags of each of the variables in the system. A variable x_{1t} is said to Granger cause another variable x_{2t} if any lagged values of x_{1t} are significant in the equation for x_{2t}. On the other hand, the null hypothesis cannot be rejected if all the lagged values of x_{1t} are jointly insignificant in the equation.

SECTION IV: EMPIRICAL RESULTS

Unit root tests were performed on the variables for the period and all variables were found to have unit roots. Differencing the data to obtain the growth rates leads to rejection of the null for all variables at the 5% level. Therefore all variables at their levels are non-stationary (Table 2) but their growth rates are stationary (Table 3). The results of these tests are presented in Tables 2 and 3.

TABLE 2: AUGMENTED DICKEY-FULLER (ADF) AND PHILLIPS-PERRON (PP) STATISTICS

GDP per capita and insurance development (in level)

1981-2010				
GDP per capita	ADF	p-value	PP	p-value
	1.934	0.9986	1.579	0.9978
Insurance penetration	1.437	0.9973	1.509	0.9976

5% critical Values: ADF= -2.989; PP= -2.989

10% critical Values: ADF= -2.625; PP= -2.625

TABLE 3: AUGMENTED DICKEY-FULLER (ADF) AND PHILLIPS-PERRON (PP) STATISTICS

Growth rate of variables (first difference)

1981-2010				
GDP per capita	ADF	p-value	PP	p-value
	-3.861	0.0023	-3.811	0.0028
Insurance penetration	-4.789	0.0001	-4.766	0.0001

5% critical Values: ADF=-2.992; PP= -12.596
10% critical Values: ADF=-2.626; PP= -10.260

Unable to rejecting the unit root hypothesis for any of the **series in levels**, the study examine next the possibility that these variables are co-integrated or share a common stochastic trend. The Engle Granger method is used. The first step for using the Engle Granger method is co-integration test by using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. Table 4 gives the results for tests of co-integration.

TABLE 4: AUGMENTED DICKEY-FULLER (ADF) AND PHILLIPS-PERRON (PP) STATISTICS TESTS OF CO INTEGRATION

1981-2010				
co-integration of GDP and Insurance(e_t)	ADF	p-value	PP	p-value
	-3.871	0.0023	-3.822	0.0027

5% critical Values: ADF=-2.992; PP= -12.596
10% critical Values: ADF=-2.626; PP= -10.260

The null hypothesis of non co-integration cannot be rejected for the data. The linear combination of variables does not yield a stationary relationship. Since the variables in their levels are non-stationary and non-cointegrated, the VARs are then constructed using the growth rates (first differences) of the variables. Previous tests show that these time series are stationary (see Table 3 and graph 1).

Each of the equations in the VAR system contains the GDP per capita and insurance penetration. The nested likelihood method indicates that one lags should be included in the system.

$\Delta \ln GDP_t = \alpha 1 + \beta 11 \Delta \ln GDP_{t-1} + \gamma 12 \Delta INSP_{t-1} + e_t$ (eq.1)

$\Delta INSP_t = \alpha 2 + \beta 21 \Delta \ln GDP_{t-1} + \gamma 22 \Delta INSP_{t-1} + e_t$ (eq.2)

If the lagged values of the independent variables are significant, then we say that these variables Granger cause the dependent variable. If only equation 1 is significant, we can infer that economic growth Granger causes insurance development. If all two equations are significant, then we can infer a bi-directional causality. However, if equation 1 is not significant and equations 2 are significant, we conclude that insurance development Granger causes economic growth. If both equations are insignificant economic growth and insurance development has not causal effect each other.

For the data and variables used for the 1981 to 2010 period, there is no indication that insurance development Granger causes economic growth. The measures of insurance development are not significant in the regressions for GDP per capita. Equation 1 has consistently low F values. The null hypothesis that insurance development has effect on economic growth thus can be rejected. In addition, at the 10% level, we can say that there is no reverse causality. Economic growth Granger does not causes insurance development. The R2 values for the entire system are also very low as shown in Table 5.

TABLE 5: RESULTS OF THE 2 EQUATION VECTOR AUTO REGRESSION

Cause	**Effect**		
		ΔlnGDP Eq. 1	ΔINSP Eq. 2
	ΔlnGDPt-1	0.3095621 (0.1817052)	.0225561 (.0777473)
	ΔINSPt-1	.3353575 (.4413624)	.0772047 (.1888483)
	R2	0.1796	0.0601
	F	0.95	0.16
	p-value	.4	.85

All the variables are first differences (growth rates). Standard errors are in parenthesis. F values from the test of joint significance.

The result of the VARs for this period (1981-2010) has several limitations. First, all the regressions suffer from low power as indicated by the low R2. Second, there are also indications of multi-collinearity as evidenced by low F values and high t-statistics for some coefficients. Multi-collinearity occurs because these different variables are correlated.

A further analysis shows that the coefficients on the insurance turn out to be insignificant in almost all equations in the VAR. A two variable VAR is performed on GDP per capita and insurance penetration to determine the relationship of these two variables. The results are on Table 6.

TABLE 6: VAR RESULTS FOR GDP PER CAPITA AND INSURANCE PENETRATION (1981-2010)

Effect	Cause	Coefficient	Standard Errors	R^2	X^2	P-value
INS	GDPt-1	**0.0322045**	.5085031	.0601	2.2426	0.326
GDP	INSPt-1	**-.1264409**	.2029331	.1796	1.6101	0.447

Insignificant and positive coefficient for the measure of insurance development is obtained when GDP per capita taken solely as the measure of insurance intermediation. This is an indication that for this measure of insurance intermediation, insurance development indeed not causes economic growth. The second equation in the VAR system indicates reverse causality does not exist. Bi-directional causality can thus be ruled out for the insurance development and economic growth.

A similar study by **Ward and Zurbruegg (2000)** in nine OECD countries concludes that insurance development does not Granger causes economic growth in either direction for four countries (Austria, Switzerland, the U.K., and U.S.).

SECTION V: CONCLUSION

The period 1981 to 2010 indicate that insurance development did not Granger cause economic growth in Ethiopia. Furthermore, there is no indication of reverse causality. Similarly bi-directional causality is not detected. Therefore, both the supply leading, demand following and bi-directional causality hypotheses are rejected. But "no Granger causality" hypothesis is not rejected.

In the earlier stage of development, VARs yield insignificant results. No clear causality can be detected in the system. Since the data were obtained from reconstructed estimates, measurement error possibly explains the inconclusiveness of the results. A VAR using this variable shows evidence of the rejection of supply leading and demand following hypotheses. Availability and completeness of data for the periods 1981-2010 limit the scope of the study. For example, other measures of insurance development could be used but data are not available for this time period.

Given the data available, the conclusion of no clear causality can also be explained by the scope and quality of insurance development available during this period. This corroborates the evidence (Arestis and Demetriades, 1996) that the causal link between insurance and economic growth is crucially determined by the nature and operation of insurance institutions and policies pursued in each country. A measure of the quality of insurance intermediation has not been proposed and will be a good area for research. Directions for future research include the differences between life insurance and other insurance market. This

can be conducted both on an international setting and within Ethiopia. In the design of government policies, it is imperative to ascertain whether one form of insurance intermediation is more effective than the other in promoting economic growth. There are at least three reasons why the causality may vary for individual countries. First, insurance institutions may be more efficient in one country versus another, thus better able to promote real growth. Second, insurance sector policies and regulations also differ across countries. Third, postulated by Levine, Loayza and Beck (2000), is that the effectiveness of the government also plays an important role.

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