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Relationship between Economic Growth and Property Liability Insurance in the post liberalized era: *an Empirical Analysis of Indian Economy*

Amlan Ghosh[1], Abhijit Mukherjee[2] and Shrutikeerti Kaushal[3]

[1] Assistant Professor, Department of Management Studies, National Institute of Technology- Durgapur, M G Avenue, Durgapur- 713209, West Bengal. India, E-mail: amlanpost@gmail.com
[2] Departmental Scholar, Department of Management Studies, National Institute of Technology- Durgapurm, M G Avenue, Durgapur- 713209, West Bengal, India, E-mail: abhijit.mukherjee552@gmail.com
[3] Senior Research Fellow, Department of Management Studies, National Institute of Technology- Durgapur, M G Avenue, Durgapur- 713209, West Bengal, India, E-mail: shrutikeertik@gmail.com

Abstract: Development of insurance sector is one of the fundamental constituents that plays an important role in stimulating financial development and thereby the growth of the economy in any country. However, such effect cannot be generalized as countries differ from each other due to various factors like economic policies, development level, pace of economic reforms, etc. This paper therefore attempts to examine the relationship between property liability insurance and economic growth in the Indian economy in the post liberalized era. The results indicate long run relationship and bi-directional causal relationship between property liability insurance and economic growth in short run.

Keywords: Economic Growth, Financial development, Property Liability Insurance, Time Series, Causality, India.

Jel Codes: G22, O1, G180, C22,

1. INTRODUCTION

In many developing economies efforts have been taken to introduce a wide range of financial liberalization measures that led to crucial changes in the structures of their financial institutions. In due course of time some of those economies have achieved high rates of economic growth while some have lagged behind. Although there could be various factors responsible for the differences in economic growth in these countries, it has become a well accepted fact among financial researchers that development in the financial sector has played a major role in lifting the economic growth to considerable levels (e.g., Patrick, 1966; McKinnon,

1973; Shaw, 1973; Sandberg, 1978; Jung Woo S., 1986; King and Levine, 1993; Levine, 1997, 1998; Outreville, 1996, Jahfer and Inoue 2014, Wongpiyabovorn 2016). Realizing the importance of financial development, research also shifted to understand the elements that play an important role in improving financial development, thereby enhancing economic growth.

Property liability insurance is one of the important financial services that can stimulate the growth in an economy by channelizing the long-term savings for the productive purposes and improve capital accumulation besides helping the business/entrepreneurs to take economic activities by providing coverage against any financial risk. This ultimately leads to economic growth. Also, by taking insurance, the entrepreneurs take risk more confidently and utilize their maximum attention in productive activities which also helps in promoting economic growth.

Recent studies show that the insurance industry can improve the economic growth through financial intermediation, risk aversion and generating employment. For example, we can highlight the studies of Outreville (1990), Beenstock *et al.* (1988), Catalan *et al.* (2000), Ward and Zurbruegg (2000), Kugler and Ofoghi (2005), Arena (2008), and Adams *et al.* (2009). Even though there are some literatures on this issue, these are not focused on the Indian economy except Ghosh (2013) who examined the causal relationship between life insurance development on Indian economy and not the property liability insurance activity on Indian economy. There is dearth of literature on the causal relationship between property liability insurance and economic development and to the best of knowledge there is no single empirical study available on the causality of the post reforms property liability insurance activity and Indian economy. The Indian insurance sector has gone through different stages from that of a completely regulated sector to that of a liberalized one by the entry of private and foreign banks in 1999 with the advent of New Economic Policy. The basic objectives behind liberalizing the Insurance sector was to increase competition, providing wider choice of products to the customer at low premium rates, expanding the overall coverage of insurance and thereby ultimately improving the efficiency of insurance sector. As a result there were noticeable development in the property liability insurance sector since liberalization, but, how far these developments have contributed towards Indian economic growth is unknown. Therefore, the aim of this paper is to provide empirical evidence on the causal relationship (if any) between post reform property liability insurance development and the economic development in India. To our knowledge there is no such work that has made an attempt to examine the effect of property liability insurance development on the economic growth of India post liberalization.

In the next section, the role of property liability insurance towards the development of an economy is discussed, followed by a review of previous studies in Section 2. Section 3 gives a brief discussion of the Property Liability Insurance sector in India and the major developments in this sector post liberalization. The objectives and Methodology are discussed in Section 5 followed by results and interpretation in Section 6 and conclusion in Section 7.

2. IMPORTANCE OF PROPERTY LIABILITY INSURANCE IN ECONOMIC DEVELOPMENT

For any economy to prosper, it requires investments at large scale for longer period of time. And insurance institutions are such financial intermediaries which can provide long term investments to the economy by channelizing small savings. Property liability insurance not only progresses the investments but also helps

to transfer the business risk which helps to improve the investment opportunities in the market (Ward and Zurbruegg, 2000). With an extra risk-financing choice, property liability insurers potentially reduces the probability of firm's financial distress and firm bankruptcy costs which ultimately scale up the productivity in the economy (Webb *et al.* 2002*)*. Thus development of Property liability insurance contributes to the economy by mobilizing savings, investments, transferring business risk and caters efficient allocation of capital in addition to its financial intermediary services, managing assets and employment opportunities.

3. LITERATURE REVIEW

Examining the causal relationship between economic growth and growth in the insurance industry Ward and Zurbruegg (2000) first examined short and long dynamic relationships between economic growth, measured by annual real GDP, and insurance industry, measured by total real premiums, for nine OECD countries for the period 1961-1996, and found that the causal relationship between economic growth and insurance market development vary across countries. For some countries like Australia, Canada they have found supply leading pattern both for the short run and long run while for Austria, Switzerland, UK, there was no long run relationship found. However Italy shows a bidirectional relationship both for the short run and long run. Webb *et al.* (2002) examined banks, life and non-life insurers individually and collectively for 55 developed and developing countries, for the period 1980-1996 and found that there is no link between economic growth and non-life insurance but economic growth affects life insurance penetration while it does not predict banking development. The empirical study by Arena (2008) finds that economic growth is positively and significantly affected by insurance activity. The findings show that life insurance has a significant effect on economic growth only on high income countries. However it is non-life insurance that creates a positive effect on economic growth in both the high income as well as the middle and low income countries.

Kugler and Ofoghi (2005), using net written insurance premium, found that there exists a long run relationship between insurance market size development and economic growth and they have also found that causality from GDP growth to insurance market size development is more powerful than the causality from the other side. Adams *et al.* (2009) analyzed long-run historical relation between banking, insurance and economic growth in Sweden using time-series data from 1830 to 1998. Their results for the entire period indicate that banking has the predominant influence on both economic growth and the demand for insurance while insurance market appears to be driven by the rate of economic growth. Haiss and Sumegi (2008), using a cross-country panel data analysis from 29 countries, find positive impact of life insurance on economic growth of European Region countries that include Switzerland, Norway and Iceland. Similar results are also found by Curak, Loncar and Poposki (2009) where using the data of 10 transition EU countries, they have found that economic growth is promoted by development in the insurance sector. However, Ching, Kogid and Furuoka (2010) have found mixed results in their empirical analysis. Using data from 1997-2008, they have examined the Malaysian economy and have found that the insurance institutions invest their funds in financial and real activities. This ultimately broadens the link between savings and investment which increases the growth of the country. They have therefore highlighted the intermediation feature of the insurance institutions that helps in stimulating growth of the economy in the long run. Contrary to this, they have also found that growth in the economy causes insurance development in the short run. Thus in the long run they have found the supply leading relationship i.e. from insurance to

economic growth while in the short run, the demand-following relationship is found. Alhassan and Biekpe (2016) find unidirectional causality whereby development in the insurance sector causes economic growth in Kenya, Nigeria, South Africa and Mauritius while bidirectional relationship is found in Morocco. The work of Vadlamannati (2008) was focused on the study of the impact of reforms in insurance sector on the Indian economy. It is found that pace of reforms has a straight effect on the development of the economy.

The only country specific, India, study available is the study by Ghosh (2013a, 2013b) where it is shown that there exists a long run relationship between life insurance industry and economic development in India and the Granger causality test suggests that life insurance sector improves the overall economic development in India but the reverse is not significant. There is no such study available on Indian economy to examine the causal effect of property liability insurance development and the economic developments. This paper therefore contributes the literature by studying the causal relationship between the property liability insurance and economic development in India. This would be helpful in realizing how far, the liberalization in the property liability insurance sector has helped in the economic growth of the country (if any).

4. FINANCIAL LIBERALIZATION AND DEVELOPMENT OF PROPERTY LIABILITY INSURANCE IN INDIA

The establishment of the Indian financial system evolved as a result of planned economic policy that gave much significance to it. The initiation of this policy led to some important developments in the country that include the establishment of financial institutions crucial for the growth of the country as well as nationalization of important institutions including State Bank of India in 1955, Life Insurance Corporation of India (LICI) in 1956, and General Insurance Corporation (GIC) in 1972. The Indian financial system experienced a completely regulated regime dominated by public sector banks and state regulated insurance companies till 1990. However the state ownership and control continuously repressed the financial system and seriously harmed it. The introduction of New Economic Policy in 1991 gave special attention to financial reforms on account of deterioration of financial health, autonomy, soundness and resonance of the financial sector. This policy led to the introduction of reforms especially in banking and insurance sector through Liberalization, Privatization and Globalization.

The reforms in the insurance sector started in India with the establishment of Malhotra Committee in 1993 headed by Dr. R.N. Malhotra, the ex-governor of RBI. Following the recommendations submitted by the committee in 1994, the Government of India implemented them from December 1999. This led to the set up of Insurance Regulatory and Development Authority (IRDA) in 1999. The insurance industry thus headed towards a new period of deregulation, liberalization, and privatisation. As a result insurance sector was made open for private and foreign participant and the foreign capital was allowed up to 26 (now the limit is 49%) per cent in the insurance (life and general) sector by the year 2000. These changes were expected to bring greater efficiency in insurance business through considerable increase in competition, improved services to the customers, enhanced options of products, better returns to policy holders, etc.

At present there are 28 general insurers in India that includes 22 private insurers and 6 public sector companies. With this there is also one reinsurer solely in the public sector, General Insurance Corporation

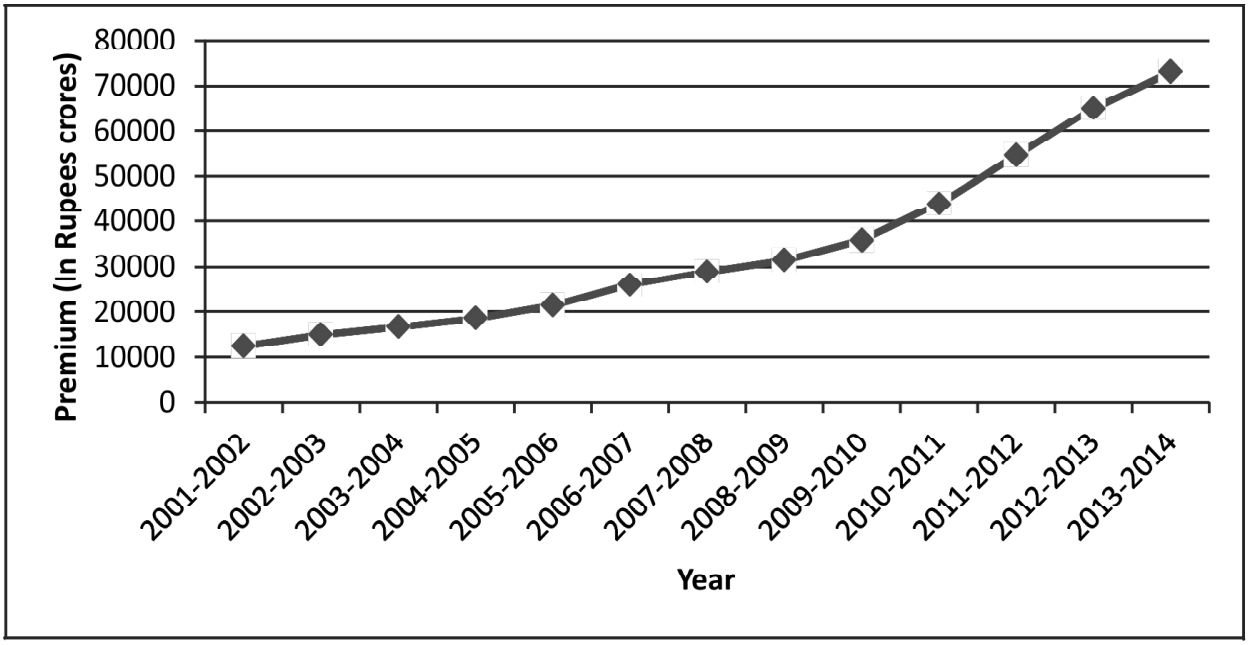

Figure 1: Total Premium Underwritten

Source: IRDA- Annual Reports (various years)

of India (GIC). This makes the total number of insurers to 29 including reinsurer at the end of the financial year 2013-2014. In the private sector five insurers have been granted registration to carry on operations exclusively in the health sector. With the expansion in the number of companies, there was also a remarkable increase (700 per cent) in the total premium underwritten, i.e., Rs 70, 610.02 crores in 2013-14 from Rs 10,087.03 crores in 2001-2002 (Figure 1).

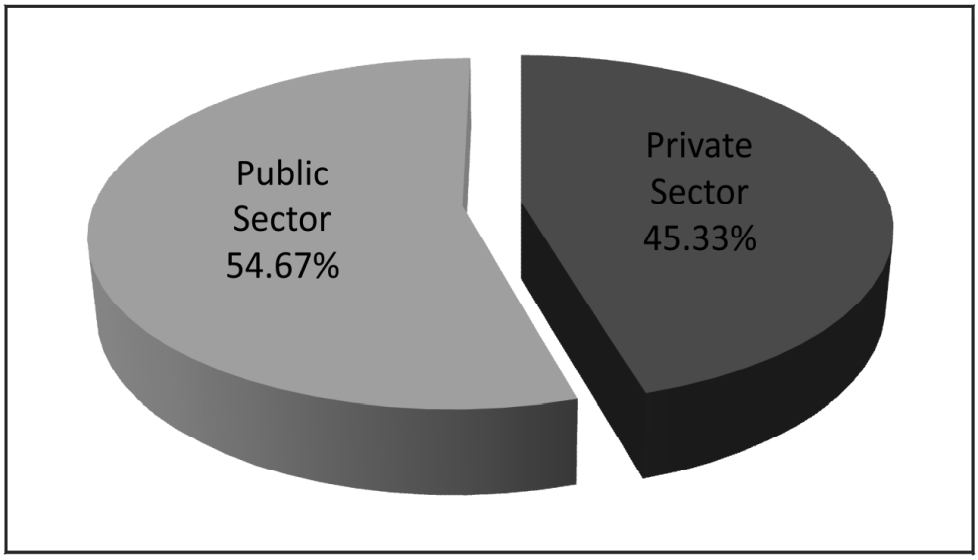

Figure 2: Indian Non Life Insurance market share

Source: IRDA- Annual Report

There has been about 450 per cent increase in insurance density (premium per capita) i.e. 11 USD in 2013-14 from 2.4 USD in 2001-02 (figure 3).The rise in the number of insurers also helps to improve the level of property liability insurance penetration (premium as a percentage of GDP) by almost double from the level of penetration in 1999-2000. Also the non-life private insurers in India are gradually able to penetrate in the market by offering different customized products which were not available before the consumers earlier with competitive price. This is visible from the market share statistics (figure 2) which shows that more than 45 per cent of the market is in their hands in 2013-14. This has been possible through their international knowledge of expertise, offerings of new products and services.

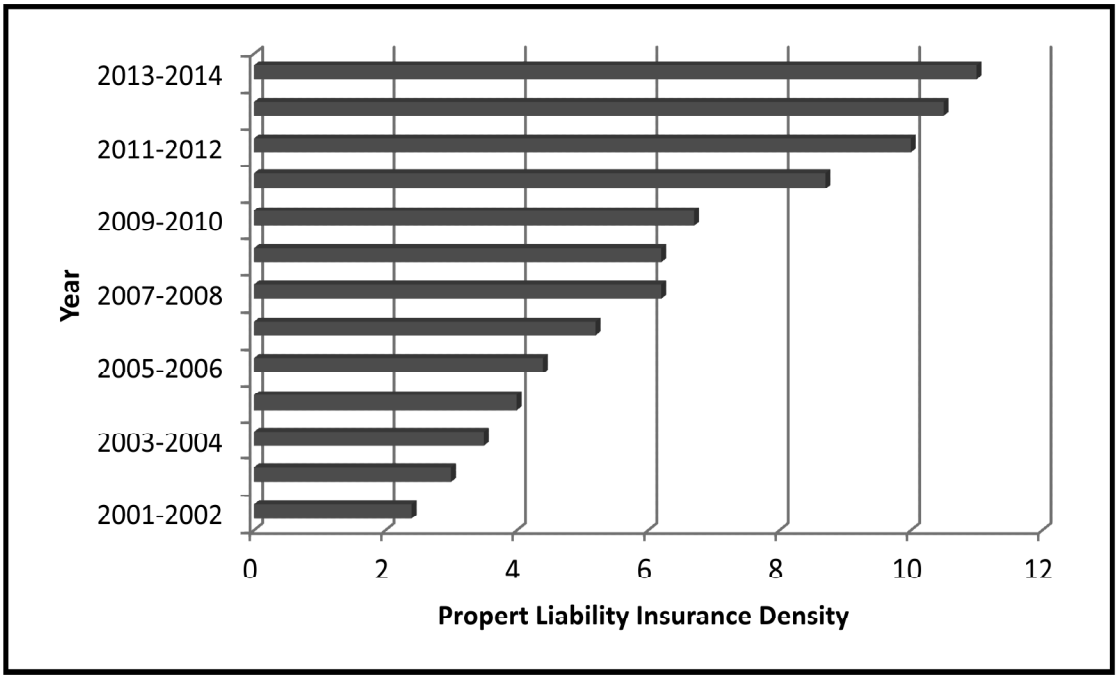

Figure 3: Property Liability Insurance Density (in US $)

Source: IRDA- Annual Reports (various years)

5. DATA AND ECONOMETRIC METHODOLOGY

We have used two macro economic variables to study the causal relationship (if any) between property liability insurance and economic growth in India. We have taken monthly figures of total premium volume of general insurance industry to assess the development of property liability insurance (*PLI*). Since GDP monthly data are not available to monitor the economic growth, we have used the Index of Industrial Production (IIP) to proxy the economic growth (*ECO*). All the data were collected from Insurance Regulatory and Development Authority (IRDA) of India and Central Statistics Office under Ministry of Statistics and Programme Implementation, India. Since private and foreign insurance companies took some time to start their operations effectively after they were allowed to operate in 2001 in Indian economy, we have considered monthly statistics from July 2004 to March 2015. Accordingly we have used the economic data series.

First we check the stationary properties of these variables since the non-stationary time series variable might give spurious relationship with erroneous conclusion. We have used the Augmented Dickey Fuller

(ADF) test to check the stationary properties of these macroeconomic time series data which generally follow the random walk. If the variables are non-stationary and integrated of the same ordered then, it is possible to move to checks the existence of a long-term stable relationship among these variables with the help of Engle and Granger (1987) co-integration test. In The last step we will also check the short run dynamics of our model with the Vector Error Correction Model (VECM). To complete the analysis of this study, it is important to study the causality among the variables with the help of Granger test. To eliminate the heteroscedasticity, the natural logarithms of property liability insurance premium (PLI) and Index of Industrial Production (IIP) have been used in this study.

The long run equation of our study is as follows:

$$ECO_t = \alpha + \delta\, PLI_t + \varepsilon_t \qquad (1)$$

6. RESULTS AND DISCUSSIONS

6.1. Stationarity Test

Standard regression with non-stationary data leads to spurious relationship with erroneous conclusion. It therefore becomes pertinent to study the nature of the time series data involved in our study. The stationarity of all the data series have been checked by the unit root test which involves Augmented Dickey Fuller (ADF) tests.

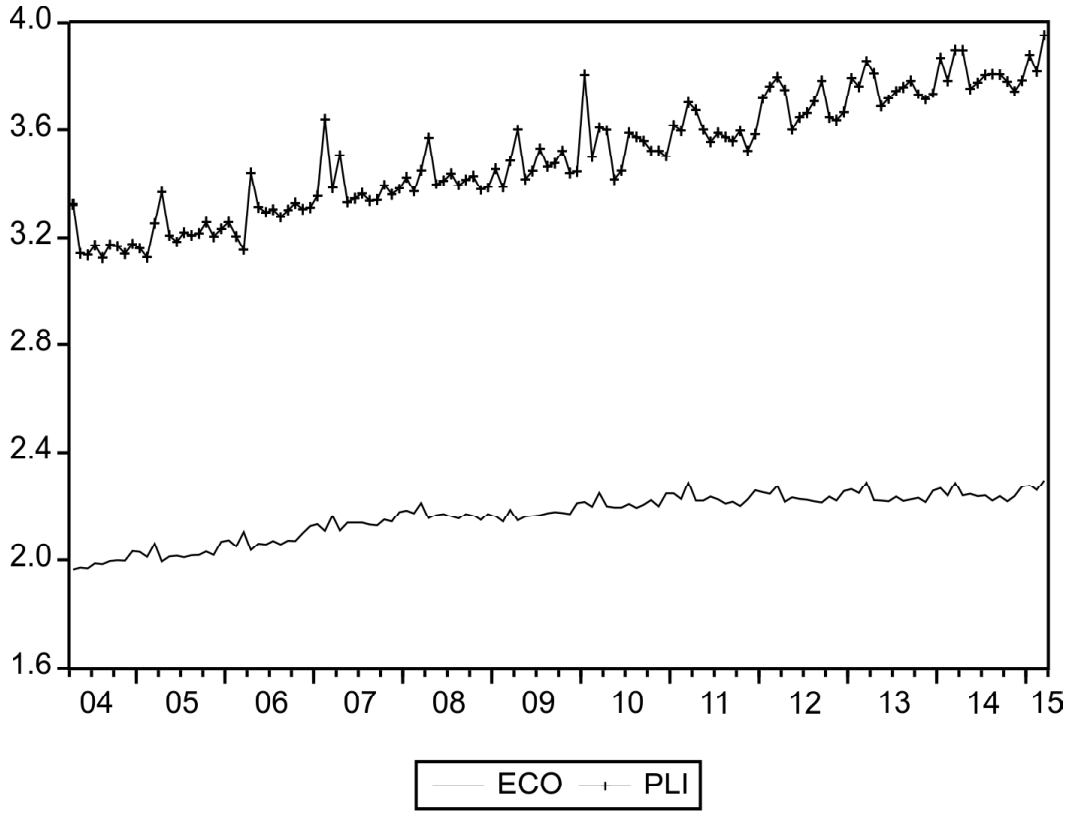

Figure 4: Graphical representation of series ECO and PLI at level values

Table 1
ADF Unit root test

Variables	*Null hypothesis*	*ADF test Stat.*	*Prob**	*DW stat*	*Critical values*		
PLI	PLI has a unit root	-0.628086	0.8591	1.992877	-3.485586	-2.885654	-2.579708
ΔPLI	D(PLI) has a unit root	-9.331699	0.0000	1.996458	-3.485586	-2.885654	-2.579708
ECO	ECO has a unit root	-1.339313	0.8731	2.138794	-4.036983	-3.448021	-3.149135
ΔECO	D(ECO) has a unit root	-1.616662	0.0997	2.049404	-2.584707	-1.943563	-1.614927

Notes: Lag Length: 12 (Automatic based on Modified AIC, Maximum Lag=12); *MacKinnon (1996) one-sided p-values

The results of the tests are summarized in the Tables 1 and it is clear from the ADF test (Table 1) that all the series (Bank, Insurance and Economic growth) have unit root at their level values at 10, 5 and 1 percent significance level (also visible in graphs). That is, the series are non-stationary. After the first differencing, the hypothesis of unit root is rejected in all series, that is, the series becomes stationary after first differencing except in case of economic development. But the correlogram, (correlogram results are available on request) which shows autocorrelation functions (ACF) and partial autocorrelation function (PACF) at different lags, confirms our findings. So, we can conclude that they are integrated of order one, i.e. *I*(1) which suggest a long run relationship between these variables. Graphical representation of both the series at first difference also confirms our findings (figure 5).

6.2. Co integration Test

According to Engle and Granger (1987), two non-stationary variables can be used in regression if the linear combination of the two non-stationary variables is stationary. In such cases, the variables are said to

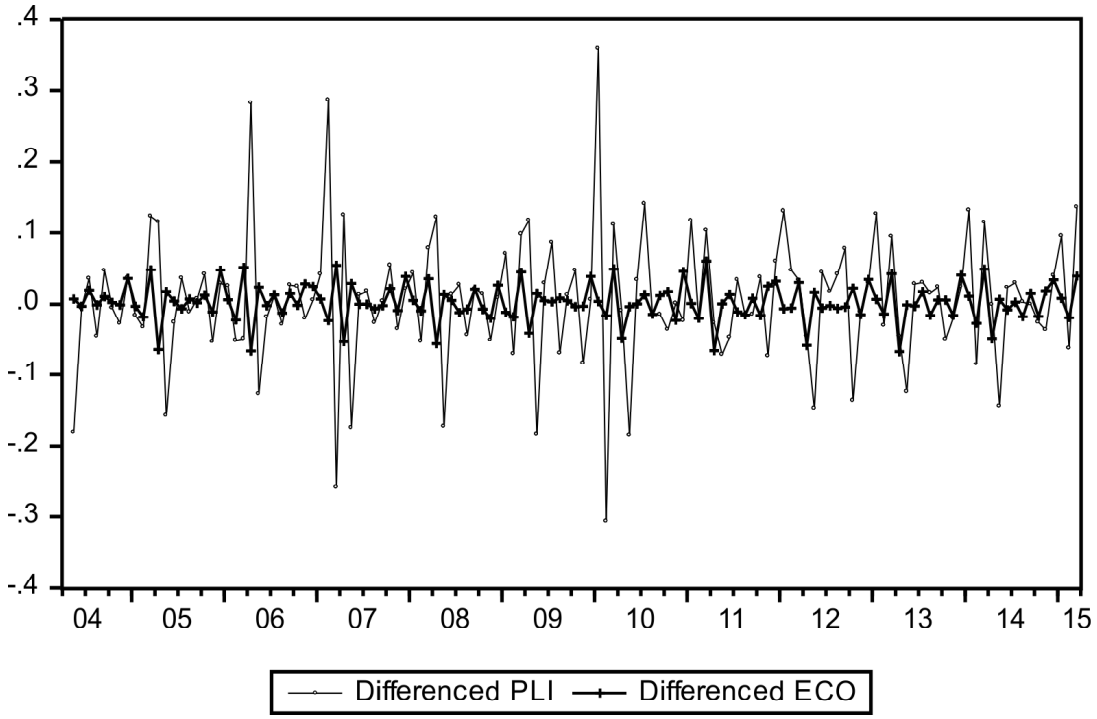

Figure 5: Graphical representation of series ECO and PLI at first difference values

be co integrated. For two series to be co-integrated, both need to be integrated in the same order. Since the two variables in our study are non- stationary and integrated of order *I*(1), we have used the Engel-Granger co-integration test for the co-integration study. To find out the cointegration among the two variables (PLI and ECO) we have estimated the following two equations and checked the residuals (U_t and V_t).

$$ECO_t = \alpha + \delta\, PLI_t + U_t \quad (2)$$

$$PLI_t = \alpha + \delta\, ECO_t + V_t \quad (3)$$

The results of these two equations are as follows;

ECO_t	=	0.928848	+	0.351817
SE		(0.057381)		(16.18739)
t stat		(16.18739)		(21.53572)
Prob		(0.0000)		(0.0000)

(4)

PLI_t	=	-1.294590	+	2.220093
SE		(0.223080)		(0.103089)
t stat		(-5.803258)		(21.53572)
Prob		(0.0000)		(0.0000)

(5)

After obtaining the residuals of the series we checked the stationary properties with the help of graphical representation to check whether the series contain any trend or not. The graph (figure 6) shows that the series does not contain any trend and seems to be stationary. We have also confirmed the same with the help of ADF unit root test.

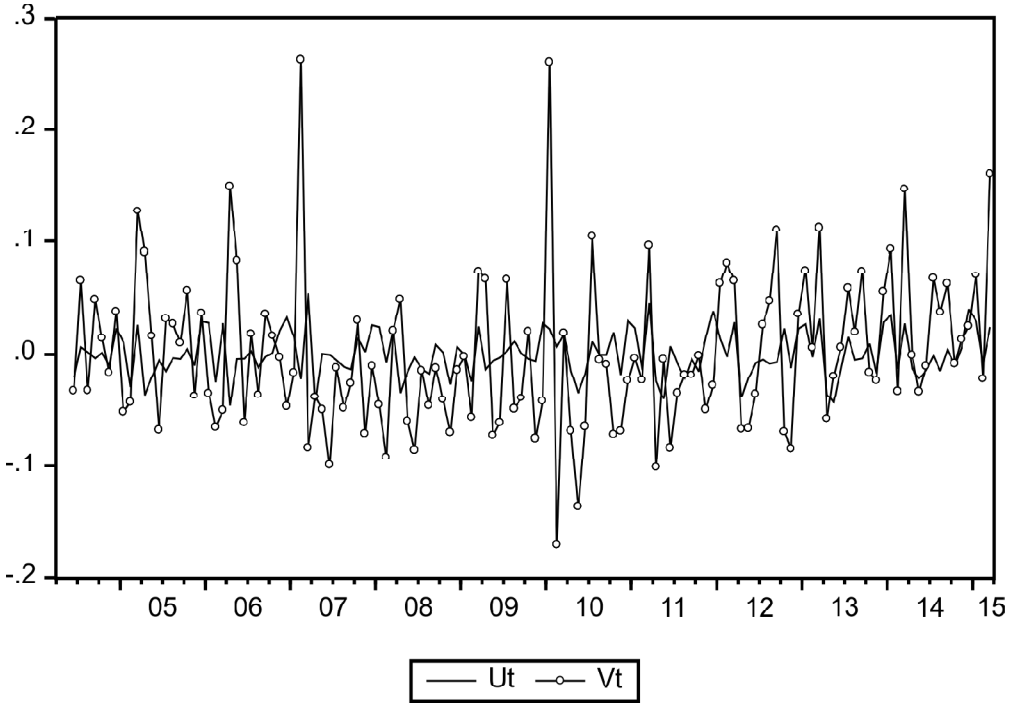

Figure 6: Graphical representation of series ECO and PLI at first difference values

The ADF test (table 2) shows that both the residual series (U_t and V_t) are stationary at their levels at 5% and 1% level of significance. Since both the residual series are stationary we can conclude that the PLI and ECO are co-integrated in long run. The correlogram of the residual (unreported) series also confirms that they are stationary, i.e. *I*(0). Therefore, we can say that the there is a long run relationship between property liability insurance (PLI) and economic growth (ECO) in India.

Table 2
ADF Unit root test

Variables	*Null hypothesis*	*ADF test Stat.*	*Prob**	*DW stat*	*Critical values*		
U_t	U_t has a unit root	-2.809659	0.0053	1.992891	-2.584707	-1.943563	-1.614927
V_t	V_t has a unit root	-11.98370	0.0000	1.959053	-2.583011	-1.943324	-1.615075

Notes: Lag Length: 12 (Automatic based on Modified AIC, Maximum Lag=12); *MacKinnon (1996) one-sided p-values

6.3. Vector Error Correction Model (VECM)

In our study both the series, property liability insurance (PLI) and economic growth (ECO), become stationary after first differencing and they are co-integrated of order *I*(1). But differencing may result in loss of information in long run relationship among these variables. Even if there exists a long run equilibrium relationship between the two series, there may be disequilibrium in the short run. Engel-Granger identifies that the co-integrated variables must have an error correction model (ECM) representation and a VAR model can be reformulated by the means of all level variables. The vector error correction specification restricts the long run behavior of the endogenous variables to converge to their co-integrated relationships while allowing a wide range of short run dynamics, hence, one can treat the error terms (ET) as the "equilibrium error". Through the co-integration term, the deviation from the long run equilibrium is corrected gradually in the course of a series of short run adjustments. Therefore, VECM gives us important information about the short run relationships between these two co-integrated variables. The general form of this modified equation by employing variables of our study is presented below;

$$\Delta ECO_t = \alpha_0 + \alpha_1 ET_{1t-1} + \sum_{i=1}^{n} \alpha_{2i} \Delta ECO_{t-i} + \sum_{t=1}^{n} \alpha_{4i} PLI\varepsilon_{t-i} + \varepsilon_{1t} \quad \ldots\ldots \text{eq.} \tag{6}$$

$$\Delta PLI_t = \delta_0 + \delta_1 ET_{t-1} + \sum_{t=i}^{n} \delta_{2i} \Delta PLI_{t-i} + \sum_{t=i}^{n} \delta_{3i} \Delta ECO_{t-i} + \varepsilon_{3t} \quad \ldots\ldots \text{eq.} \tag{7}$$

Where, Δ represents the difference operator. The symbol of n is the number of lags. The signs of ε ($i = 0, 1, 2, 3$), represents the stochastic error term with mean zero and a constant variance. ET_{t-1} referred to the error correction term derived from the long-run relationship.

It is necessary to identify and select the optimal lag length of initial VAR before we estimate the VEC Model with the co-integrated vectors. Therefore, different information criteria's were computed for different time lags. Based on the results of different information criteria (AIC,

SIC, HQ, LR, FPE) we have selected optimal lag 6 (Annexure 1) in our study.

6.4. VECM results

From the VECM results (Annexure 2) the estimated equation functions of equation (6) and (7) has the following form,

$\Delta ECO = -0.079937*(ECO_{t-1} - 0.2102*PLI_{t-1} - 1.4303) + -0.615900* \Delta ECO_{t-1} + 0.117845* \Delta ECO_{t-2} + 0.355582* \Delta ECO_{t-3} - 0.130424* \Delta ECO_{t-4} + -0.142906* \Delta ECO_{t-5} - 0.142906* \Delta ECO_{t-6} - 0.076719* \Delta PLI_{t-1} - 0.063107* \Delta PLI_{t-2} - 0.025861* \Delta PLI_{t-3} - 0.030705* \Delta PLI_{t-4} -0.029517* \Delta PLI_{t-5} + 0.018537* \Delta PLI_{t-6} + 0.004925$ ….. (eq. 8)

$\Delta PLI = 0.191322 *(ECO_{t-1} - 0.2102*PLI_{t-1} - 1.4303) + 1.471873* \Delta ECO_{t-1} + 1.235485* \Delta ECO_{t-2} + 1.474525 * \Delta ECO_{t-3} + 1.219692* \Delta ECO_{t-4} + 0.526233* \Delta ECO_{t-5} + 0.207136* \Delta ECO_{t-6} - 0.719207* \Delta PLI_{t-1} - 0.593153* \Delta PLI_{t-2} - 0.513593* \Delta PLI_{t-3} - 0.490281* \Delta PLI_{t-4} -0.366409* \Delta PLI_{t-5} + 0.016979* \Delta PLI_{t-6} + 0.006912$ ….. (eq. 9)

The results from the VECM indicates that the co-integrating vector coefficients in the long run in both the equations are significant which indicates that the system is in the state of short term dynamics i.e., in a series of short run correction long run equilibrium is attained. In the short run, in case of equation (6), dependent variable ΔECO_t is significantly dependent on the 1st, 3rd and 5th lagged values of ΔECO_t whereas it is significantly dependent on the 1st and 2nd lagged values of "PLI_t. But dependent variable ΔPLI_t (equation 7) is significantly dependent on the lagged values of "PLI_t for consecutive five months along with consecutive forth lagged values of ΔECO_t.

6.5. The Causal Relationship

The short-run causal relationships between these two variables are tested using Granger causality test to check the direction of causality. The null hypothesis is the lagged values of coefficients in each equation are zero. If the P-value is less than 5%, then the null hypothesis (H_0) is rejected. Meaning that, the independent variable can influence dependant variable. Since the series in our study are *I*(1) and co-integrated, the proper statistical inference can be obtained by analyzing the causality relationship on the basis of error correction model (ECM) as the simple F statistic in the traditional Granger causality test does not have a standard distribution. The result of the VEC Granger causality tests (Table 3 and 4) shows that in the short run there is a bi-directional causal relationship between development of property liability insurance and the economic growth in India. That is both the insurance and economic growth causes to develop each other.

Table 3
Dependent variable: ΔECO

Excluded	*Chi-sq*	*df*	*Prob.*
Δ PLI	11.70082	6	0.0690
All	11.70082	6	0.0690

Table 4
Dependent variable: ΔPLI

Excluded	*Chi-sq*	*df*	*Prob.*
Δ ECO	44.51354	11	0.0000
All	44.51354	22	0.0000

7. CONCLUSION

The main objective of this paper was to find out the relationship between the property liability insurance and economic growth in the post reform era where supply led financial development was given impetus in the policy by way of liberalizing the economy and allowing private and foreign insurers to operate in the market. In our study we find that there is long run relationship between the development of insurance and economic growth in India. It is also witnessed that there exists a bi-directional causal relationship between development of property liability insurance and economic growth in the short run. This bi-directional relationship is probably due to the role played by the insurance institutions in Indian economy. Insurance companies channelize the savings for longer period of time and make it available for long term investment in the market that promotes the growth of the economy. By minimizing the financial risk burden of the business, insurers help to promote a congenial investment environment which helps to improve the productive activity in the market.

On the other hand the level of development in the economy also helps to improve the level of economic activity along with generating demand in the market which pushes the penetration of insurance market that ultimately helps in their institutional development. As the study finds that insurance development leads economic growth, the Government and policy makers should therefore make concrete strategies to enhance insurance institutional development in order to encourage economic growth in India.

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[Annexure 1]
Determination of optimum lags lengths (n)

Endogenous variables: ECO PLI

Lag	*LogL*	*LR*	*FPE*	*AIC*	*SC*	*HQ*
0	253.2871	NA	5.95e-05	-4.053017	-4.007529	-4.034539
1	423.3936	331.9821	4.09e-06	-6.732155	-6.595690	-6.676720
2	461.7046	73.53238	2.35e-06	-7.285558	-7.058116*	-7.193166
3	465.5509	7.258350	2.36e-06	-7.283079	-6.964660	-7.153730
4	470.3900	8.975784	2.32e-06	-7.296613	-6.887217	-7.130307
5	477.9596	13.79614	2.20e-06	-7.354187	-6.853814	-7.150924
6	493.5879	27.97969*	1.82e-06*	-7.541740*	-6.950391	-7.301520*
7	494.9904	2.465651	1.90e-06	-7.499844	-6.817518	-7.222668
8	499.4298	7.661681	1.89e-06	-7.506933	-6.733630	-7.192799

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

[Annexure 2]

Vector Error Correction Estimates

Standard errors in () & t-statistics in [ ]

Cointegrating Eq:	*CointEq1*	
ECO(-1)	1.000000	
PLI(-1)		-0.210234 (0.08861) [-2.37264]
C	-1.430344	

Error Correction:	D(ECO)	D(PLI)
CointEq1	-0.079937 (0.04210) [-1.89880]	0.191322 (0.13605) [1.40629]
D(ECO(-1))	-0.615900 (0.09664) [-6.37316]	1.471873 (0.31230) [4.71297]
D(ECO(-2))	0.117845 (0.12020) [0.98044]	1.235485 (0.38843) [3.18075]
D(ECO(-3))	0.355582 (0.12371) [2.87440]	1.474525 (0.39977) [3.68842]

D(ECO(-4))	-0.130424	1.219692
	(0.13214)	(0.42702)
	[-0.98703]	[2.85628]
D(ECO(-5))	-0.312257	0.526233
	(0.13346)	(0.43130)
	[-2.33966]	[1.22010]
D(ECO(-6))	-0.142906	0.207136
	(0.10922)	(0.35295)
	[-1.30844]	[0.58687]
D(PLI(-1))	-0.076719	-0.719207
	(0.02947)	(0.09522)
	[-2.60366]	[-7.55295]
D(PLI(-2))	-0.063107	-0.593153
	(0.03498)	(0.11303)
	[-1.80428]	[-5.24774]
D(PLI(-3))	-0.025861	-0.513593
	(0.03561)	(0.11508)
	[-0.72619]	[-4.46276]
D(PLI(-4))	-0.030705	-0.490281
	(0.03554)	(0.11485)
	[-0.86397]	[-4.26890]
D(PLI(-5))	-0.029517	-0.366409
	(0.03336)	(0.10782)
	[-0.88468]	[-3.39829]
D(PLI(-6))	0.018537	0.016979
	(0.02500)	(0.08079)
	[0.74150]	[0.21016]
C	0.004925	0.006912
	(0.00192)	(0.00620)
	[2.56867]	[1.11554]