

Level of Regulatory Compliance of Indian Life Insurers & Its Determinants

B. Charumathi and K. Nithya

Abstract

Globalisation, liberalisation and deregulation of insurance markets have taken place in the context of market access and equality of competitive opportunity through prudential regulation dealing with the issues such as product, price and market conduct regulation. Till 1999, the Indian insurance industry was characterized by public sector players. The amendment of Insurance Act 1938 and the birth of Insurance Regulatory Development Authority (IRDA) in 1999, following the Malhotra Committee recommendations led to increased competition with the entry of several private players. The insurers have to comply with the mandatory regulations and the IRDA ensures regulatory compliance by calling for periodical information from the players, undertaking inspection, conducting enquiries and investigations including audit of the insurers. Since the introduction of IRDA and the establishment of its regulatory mechanism pertaining to the overall functioning of the insurance industry from the year 2000, twelve years have passed. There arises the need for the regulatory apparatus to move forward in order to oversee compliance of regulations. In this context, an empirical study on the level of regulatory compliance by the Indian life insurers is significant. An original Life Insurance Regulatory Compliance Index (LIRCI) was constructed to measure the level of regulatory compliance of the Indian life insurers. Further, the study modeled the factors determining the level of regulatory compliance of Indian life insurers. Indian life insurers have not complied with all the IRDA regulations and the level of regulatory compliance is negatively and significantly determined by the size of the life insurer.

Keywords: Indian Life Insurance Industry, Life Insurance Regulatory Compliance Index, Determinants, LIRCI.

JEL Classification: G22

1. INTRODUCTION

Globalisation has made its presence felt in the international insurance markets through increasing sophistication of insurance products, risk diversification through reinsurance, emergence of mega-financial intermediaries and the growing importance of supranational agencies such as the World Bank and the World Trade Organization. Liberalisation and deregulation of insurance markets have taken place in the context of market access and equality of competitive opportunity through prudential regulation dealing with the issues such as product, price and market conduct regulation. Formerly restrictive markets were made competitive through a combination of liberalisation and deregulation. Deregulation and liberalization seek to reform a country's international industrial and trade policies in order to

improve economic welfare by bringing a more efficient allocation of a country's resources in the long run. Regulators, policy makers and the industry undertake regulatory initiatives that actively contribute to the development of global life insurers.

2. INSURANCE MARKET – GLOBAL AND INDIAN SCENARIO

The International Association of Insurance Supervisors (IAIS) supports the various insurance supervisors in meeting their regulatory objectives and contributes to the international regulatory agenda by setting out a series of Insurance Core Principles (ICP) that provides high level frameworks to guide the development of solvency regimes. In the United States, the National Association of Insurance Commissioners (NAIC), the standard setting and regulatory support organization created and governed by the chief insurance regulators from the states, is following Solvency Modernization Initiative (SMI). The Dodd-Frank Act was enacted in 2010 to reduce the risk of another financial crisis and places additional regulation of the financial services sector in the hands of the federal government. The European Union's (EU) Solvency II Directive is a new regulatory framework for the European insurance industry that adopts a more dynamic risk-based approach and implements a non-zero failure regime, i.e., there is a 0.5 percent probability of failure. On 2nd October 2013, the European Commission proposed a second Quick Fix Directive postponing the application date of the Solvency II Directive to 1st January 2016.

In the backdrop of the new industrial policy and consistent with reforms undertaken in other segments of the financial sector, the Government of India set up in 1993 a committee headed by Mr. R. N. Malhotra to examine the insurance industry. Reforms in the insurance sector were undertaken in 1999 and accordingly the Insurance Act 1938 was reviewed and revised. With the passage of Insurance Regulatory and Development Authority Act in 1999, the Government's monopoly in the insurance sector ended. The Insurance Regulatory and Development Authority (IRDA) was constituted as an autonomous body to regulate and develop the insurance industry. The IRDA opened up the market in August 2000 with the invitation for application for registrations including foreign companies up to an ownership of 26%. There are twenty-four life insurers including the public insurer, LIC, operating in India as on September 2013. Several Indian private players apart from the LIC have completed ten years of existence. Indian life insurance penetration had consistently gone up from 2.15 per cent in 2001 to 3.17 per cent in 2012. The life insurance density in India has gone up from USD 9.1 in 2001 to USD 42.7 in 2012. In the life insurance business, India is ranked 10th among the 88 countries according to Swiss Re.

3. REGULATORY COMPLIANCE OF INDIAN LIFE INSURERS

The Indian insurance sector has a relatively large footprint relative to other forms of financial intermediation given India's income level. Hence, there is a need to achieve a healthier competitive environment in the life insurance industry and intervention tools need to be expanded. The regulations prescribed by the apex body, IRDA, are mandatory and to be followed by insurers registered and operating in India. The statutory and developmental functions of the IRDA include registration of new insurers, yearly renewal of existing insurers, protection of policyholders' interests, specifying the code of conduct for insurance intermediaries, promoting efficiency of the insurance business, specifying prudent accounting norms, regulating investments of funds, maintenance of solvency and specifying the insurance

business to be undertaken in rural and social sector. The IRDA ensures the regulatory compliance of life insurers by calling for periodical information from the players, undertaking inspection, conducting enquiries and investigations including audit of the insurers. With the powers vested upon the authority, IRDA identified the cases of non-compliance/deviations, issued warnings and levied penalties to the defaulting life insurers. **There arises the need for the regulatory apparatus to move forward in order to oversee compliance of these regulations.** As 12 years have passed since the introduction of IRDA regulations and there are cases of non-compliance, the present study entitled “**Level of Regulatory Compliance of Indian Life Insurers & its Determinants**” has been taken up to measure the level of regulatory compliance and its determinants of life insurers.

4. REVIEW OF LITERATURE

Studies on Insurance Regulatory Framework

Using insurance industry as a case study, **Meier (1988)** argued that regulatory policy-making was an interactive process involving four factors: the industry, consumer groups, the regulatory agency, and the political elites. In the context of liberalisation and deregulation of insurance markets, **Skipper, Starr & Rob (2000)** opined that government intervention into insurance markets was essential but should be carefully targeted to minimise undue interference. **Lee (2001)** suggested efficient regulatory methods such as prescribing financial requirements, financial reporting, superintendence of financial status and other protective measures for insolvency. **Schiro (2006)** highlighted the threats to the designing of regulation for the insurance industry which include regulators reacting to political pressure, regulations emerging through litigation and regulatory frameworks designed without clear distinction between insurance from banking and other financial services. Using dynamic financial analysis, **Shiu (2009)** analysed the key implications that insurance regulators and the actuarial profession can take into account as they improve their supervisory and regulatory regime. **KPMG Report (2012)** analysed the International Association of Insurance Supervisors (IAIS) attempt to build a common framework for the supervision of Internationally Active Insurance Groups (IAIG) and important regulatory changes occurring in risk management and solvency. Also, consumer protection across the North and South America, Asia-Pacific region with reference to the implementation of the IAIS Insurance Core Principles (ICPs); evolving global solvency developments for insurers were discussed in this study.

Studies in United States

Wright (1992) provided an overview of the structure, performance and regulation of the United States life insurance industry where regulation emphasized prudence and solvency and does not inhibit competition and innovation. **Klein (1995)** opined that the forces influencing insurance regulation consisted of increasing diversity of insurance products, the types of risks that insurers have assumed and the geographic extension of insurance markets with a number of insurers operating on a national and international basis. Economic and political forces have also effected changes in the state insurance regulation challenging the state regulators' ability to maintain adequate oversight of insurers' solvency and market practices. **Pottier & Sommer (1998)** focused on the characteristics of life insurers licensed in New York due to the regulatory stringency of the New York insurance law. There were not many significant differences between characteristics of New York domiciled insurers and New York

licensed foreign insurers in extraterritorial application of New York insurance law.

Grace & Klein (1999) initiated an inquiry into the relative efficiency of state insurance regulation and related issues such as the need for regulating insurers, essential regulatory functions of the regulator, costs pertinent to insurance regulation and issues associated with their measurement. **Willenborg (2000)** found that the likelihood of solvency-related regulatory action was significantly-positively related to the number of states in which the insurer operated and there was a significant-inverse relation between closure and size in case of distressed single-state insurers. **Ruhil & Teske (2003)** illustrated the impact of state regulatory activities on the solvency of firms in the U.S. insurance industry using a cross-sectional annual time series data for 50 states during the period 1987–1997. States with elected commissioners and states with divided government conducted relatively more solvency examinations than states with appointed commissioners or unified government. **Hamwi, Hudson & Chen (2004)** evaluated guarantee funds and solvency regulations. Solvency regulations were of certain value only when they protect guarantee funds and alleviate the disincentives they create as consumers were less likely to monitor insurers' behavior when protected by guarantee funds. **Neale & Peterson (2005)** examined the effects of Gramm-Leach-Bliley Act on the U.S. insurance industry. An increase in shareholder wealth and a decrease in risk across the insurance industry following events associated with the Act were documented. Also, there was no change in concentration in the insurance industry.

Grace & Phillips (2007) investigated the sources of inefficiency in the production of insurance regulation in the U.S. States with small domestic insurance markets were less efficient producers of insurance regulation and appeared to allow states that chose to expend the greatest resources to regulate them. **Grace & Klein (2009)** reviewed the historical foundations of insurance regulation in the U.S and examined the merits of alternative frameworks for insurance regulation along with their implications for regulatory and market efficiency. In addition to an Optional Federal Chapter (OFC) which would allow insurers and agents to choose federal regulation and exempting them from state regulations, proposals such as the State Modernization and Regulatory Transparency Act, a single-state regulatory system; and the delegation of solvency regulation to the federal government and market regulation to the states were also considered. **Harrington (2009)** pondered the role of American International Group (AIG) and the insurance sector in the 2007-2009 financial crisis and the implications for insurance regulation. Ineffective banking regulation played a more significant role than insurance regulation in the financial crisis and AIG intervention. Further, systemic risk was relatively low in insurance markets compared to banking markets.

Vaughan (2009) summarized theories used to explain regulatory failure and examined the unique nature of U.S. insurance regulation within the context of those theories. Regulatory fallibility (because human beings are fallible), regulatory forbearance (failure to take prompt and stringent action) and regulatory capture (tendency of regulators to take the mind set of interest groups) were the main reasons for regulatory failure. The lessons from U.S. insurance regulation include built in mechanisms for ensuring regulatory and supervisory effectiveness, free sharing of information among supervisors, multilateral action by supervisors between regulators and effective cross border cooperation in resolutions mechanisms. Areas for improvement in the U.S. insurance regulation included cautious reliance on ratings based on risk-based capital system, introducing new reporting and other requirements around securities

lending, increased attention on the potential impact of unregulated affiliates on the insurers and greater uniformity and reciprocity among states.

Schich (2009) discussed the vulnerabilities and identified specific issues related to the role of the insurance sector in the U.S. financial crisis. The insurance sector was adversely affected due to their investment portfolios as assets were largely held in bonds and stocks that experienced significant valuation pressures. There was also the emergence of liquidity risks; insurance dominated financial groups expanding their activities beyond their core business and lack of adequate group supervision and supervisory co-operation further complicating the resolution of crisis. **Acharya, Biggs, Richardson & Ryan (2009)** discussed the key issues facing the financial regulation of U.S. insurers in the post-crisis era. Insurers' excessive provision of insurance, under-capitalization and related systemic risks originated from a too-interconnected-to-fail problem manifested most perversely in the case of AIG.

McShane, Cox & Butler (2010) opined that greater regulatory competition across the states in the U.S. led to higher profitability for regulated insurers which suggested greater forbearance by state regulators and a "competition in laxity". **Pottier (2011)** assessed the impact of multi-state regulation on efficiency of U.S. life insurers by estimating the relation between efficiency scores and the number of state regulatory jurisdictions a life insurer was subject to by being licensed in these states. This test confirmed the results even in the presence of a more stringent regulation of New York and it was found that any regulatory cost savings that resulted from an optional federal charter or single regulator will be passed to insurance consumers in a competitive insurance market. **Carroll & Burke (2012)** analysed whether the implementation of the Gramm–Leach–Bliley Act with repeal of the Glass-Steagall Act resulted in more competition in the U.S. life insurance industry and lowered the price of ordinary life insurance. Concentration had increased but it did not result in lower insurance premium on average due to economies of scale resulting from increased company size. Also, increased competition did not result in greater revenue or cost efficiencies.

Studies in Europe

Rees, Gravelle & Wambach (1999) examined the relevance of European solvency regulation when consumers were fully informed of insolvency risk and suggested that the role of regulation in insurance markets should be confined to providing consumers with information about the default risk of insurers. **Rees, Kessner, Klemperer & Carmen (1999)** surveyed the pre-1994 regulation in Germany and U.K., and the European Commission's policy and concluded that the European Commission's policy may have improved the welfare of insurance buyers in the previously highly regulated countries such as Germany. **Eling, Schmeiser & Schmit (2007)** outlined the specifics of Solvency II and provided input to the evaluation process that determined the exact form of capital regulation. Caution was warranted in adopting models for internal control and management. **Vaughan (2009)** considered the developments in Europe and the U.S. with respect to insurance regulation and discussed the lessons learnt from the financial turmoil and challenges in ensuring regulatory action around troubled financial institutions. The optimal structure of insurance supervision suggested was likely to be a combination of a rules-based and a principles-based approach; on-site examinations and offsite analysis of financial performance and trends; and frequent interaction with the regulated entity.

Elderfield (2009) opined that the international regulatory environment for the insurance sector was experiencing an intense period of change and the issue of maintaining compliance with international standards had become an increasing priority for insurance regulators worldwide. With Solvency II and sub-prime crisis as the main drivers of regulatory change, the three key trends that were expected to have short-to-medium term impact on the insurance industry were the development of enhanced supervisory requirements for insurance groups, increased scrutiny of risk management practice while allowing greater scope for the use of internal economic capital models and increased disclosure of risk metrics. **Eling, Klein & Schmit (2009)** compared insurance regulatory frameworks in the United States and EU. The comparison underscored the use of more fluid and principles-based approaches in the EU as it was developing under Solvency II, while the U.S. continued to focus essentially on static, rules-based regulation. The discussion further noted that the EU approach was more successful in promoting a financially solid insurance sector. **Brien (2010)** opined that Stress testing as required by Solvency II and International Accounting Standards Board (IASB) norms became relevant globally, should be co-ordinated with accounting and solvency requirements, should reflect actual historical events and needs to incorporate backward-looking checking for U.K. life insurers.

The core focus of the **KPMG Report (2011)** was to study the changes and implications of the introduction of a revised version of the International Association of Insurance Supervisors (IAIS) insurance core principles in October 2011. The report discussed the role of insurance regulators globally, ensuring that insurance firms were adequately capitalised, requiring valuations of assets and liabilities on a consistent and economic basis and introduction of group and cross-border supervision at group level. The regulatory harmonisation through Solvency II in European and Non-EU countries, the Solvency Modernisation Initiative (SMI) of the U.S. aligned to the IAIS's new insurance core principles concerning solvency and group supervision mechanisms and localization of regulatory approaches in emerging markets had also been examined. **Lorson, Schmeiser & Wagner (2012)** focused on the introduction of the Solvency II framework as a new regulatory measure and adopted a policyholder's point of view in an economic model. In the context of Solvency II, policyholder's willingness to pay for the higher safety level and the estimated costs for the new regulatory standard had been compared.

Studies in Asia

Boonyasai (1999) examined the effects of insurance liberalisation and deregulation undertaken by the Asian economies such as Korea, Philippines, Taiwan and Thailand. While, Korean and Philippine life insurers had stimulated increases and improvements in productivity due to the opening up of their markets, insurers in Taiwan and Thailand had little effect on their productivity as they experienced market access without dismantling their restrictive regulatory regime. **Bhaumik (1999)** opined that the regulations can be influenced by political agendas and if politicised regulations have the potential to adversely affect the pricing of risks, especially in the non-life industry and hence the viability of the insurers. **Boonyasai (2001)** analysed the impact of liberalization experienced by the Thai life insurance industry and suggested that liberalization of Thai life insurers had little effect on increases and improvements in productivity as deregulation did not closely follow liberalization. **Thampy (2002)** analyzed the implication of a uniform regulatory cost imposed by the regulator on all Indian insurance

firms. The regulatory cost which resulted in higher cost of insurance resulted in some potential buyers with low risk not buying insurance. Insurance regulation, therefore, needed to identify and link regulatory costs to not only the asset side of the balance sheet but also to the risks on the liability side of the balance sheet of insurers so as to minimize the cost of social welfare. **Rastogi & Sarkar (2006)** described the evolution of the Indian insurance industry and identified the market driven and the regulatory driven factors which have largely led to the development of the insurance sector in its present form.

Jean (2010) examined the history of market development and regulation in the insurance markets of seven least developed Asian countries including, Afghanistan, Bangladesh, Bhutan, Cambodia, Laos, Myanmar and Nepal. All countries had adopted or were in the process of adopting market-oriented economic policies and insurance business had begun to re-emerge. The reinsurance markets were either undeveloped or were subject to compulsory cession to government insurer or its designee. They also lacked clear exit (insolvency) regulation and policyholder protection guidelines. **Devi (2011)** studied the impact of liberalization and deregulation on the Indian life insurance industry taking into account the efficiency and productivity improvement after the deregulation process. Firm level and industry level efficiency and productivity had improved due to liberalization of the insurance sector.

RBI (2012) analysed the stability of the Indian financial sector in the backdrop of global vulnerabilities. Interconnectivities in the Indian financial system with insurance companies and mutual funds being major lender of funds to banks posed contagion and liquidity risks. The Indian insurance sector governed by a factor based solvency regime, comparable to Solvency I was not in complete consonance with Solvency II and embarking on the framework would necessitate addressing a range of challenges in terms of assessment of risks, development of internal models, adequacy of data, capacity building both within IRDA and in the insurance industry. **International Monetary Fund (2013)** reported on the Indian financial system stability. The Indian economy and its financial system weathered the global financial crisis well due to strong balance sheets and profitability entering the crisis, a robust legal, regulatory and supervisory framework and timely actions to counter pressures on liquidity, the supply of credit and aggregate demand. The regulatory and supervisory regime for banks, insurance and securities markets was well developed and largely in compliance with international standards. There was a need to achieve a healthier competitive environment in the life insurance industry by ensuring a level playing field for both public and private life insurers and facilitating the exit of weak insurers employing the merger and portfolio transfer mechanisms currently available. Intervention tools of the regulator need to be expanded and the de jure independence of the regulator needs to be strengthened. On the whole, the life sector appeared to be stronger than the non-life sector.

Studies carried out in the U.S., analysed the concept of fragmented regulation prevalent in these markets. In Europe, the studies concentrated around the changes in the efficiency of markets before and after the formation of the European Union. In the Asian markets, the studies identified the impact of deregulation and liberalisation of insurance markets. In India, the research paper level studies dealt with the competitiveness of Indian life insurance industry, efficiency, perceptions of customers and agents. None of the research studies had been undertaken to measure the level of regulatory compliance of life insurers. Further, there was a dearth of studies analysing the determinants of level of regulatory compliance. Thus, the

present study closes this research gap.

5. OBJECTIVES OF THE STUDY

This study has the following objectives:

- 1) To design and develop an appropriate original index, viz., Life Insurance Regulatory Compliance Index (LIRCI) to empirically measure the level of regulatory compliance of Indian life insurers.
- 2) To study the determinants of level of regulatory compliance of Indian life insurers.

6. RESEARCH METHODOLOGY

This is an empirical research study. This study used secondary data. The secondary data required include the IRDA regulations and compliance status of these regulations by the life insurers. The same were drawn from the Insurance Act 1938, Insurance Rules 1939, IRDA Act 1999, IRDA Regulations, Guidelines, Circulars, IRDA Annual reports, IRDA database and the Public Disclosures of the respective Indian life insurers. For other required information, Life Insurance Council reports, various committees' special reports, research papers, financial dailies, websites, etc. were used. The Indian insurance industry consists of one regulator (IRDA), players (life and general insurers) and one reinsurer (GICI). Insurers can be either be public or private (either fully domestic or with foreign collaboration). This study has selected all the Indian life insurers in operation as on 31-3-2011 as shown in Table 1. There was 1 public life insurer, the LIC, throughout the study period. The names of Indian Life Insurers and the abbreviations used are given in Appendix.

Table 1: Sample Size – Number of Indian Life Insurers

<i>Year</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>
2005-06	1	14	15
2006-07	1	15	16
2007-08	1	17	18
2008-09	1	21	22
2009-10	1	22	23
2010-11	1	22	23

6.1. VARIABLES OF THE STUDY

6.1.1. Variables for constructing Life Insurance Regulatory Compliance Index (LIRCI)

The variables considered for constructing the Life Insurance Regulatory Compliance Index (LIRCI) were drawn extensively from the IRDA regulatory framework. Table 2 shows the variables, i.e., six sub-indices of LIRCI.

Table 2: Variables for Construction of Life Insurance Regulatory Compliance Index (LIRCI)

Components/Sub-Indices	No. of variables/ attributes	Score	Score (%)
Obligation Fulfillment Index (OFI)	3	3	100
Stakeholders Protection Index (SPI)	12	12	100
Public Disclosure Index (PDI)	6	6	100
Financial Stability Index (FSI)	4	4	100
Investment Guidelines Index (IGI)	3	3	100
Other Guidelines Index (OGI)	8	8	100
Life Insurance Regulatory Compliance Index (LIRCI)	36	36	100

Note: Constructed by researchers based on IRDA regulatory framework

6.1.2. Variables for studying the determinants of level of regulatory compliance

The variables used for studying the determinants of level of regulatory compliance of Indian life insurers are shown in Table 3. These variables have been chosen after a number of iterations.

Table 3: Variables for Determinants of Level of Regulatory Compliance

Determinants	Formulae
Total Admitted Assets (LnTAA) – Size	Natural Logarithm of Total Admitted Assets (LnTAA)
Return on Assets (ROA)	Net income before taxes/ Total Admitted Assets
Liquidity (LIQ)	Outstanding Claims/ Cash and Bank Balance

Note: Compiled by the researchers based on earlier literature.

The variables are chosen after various iterations of multiple regression models

6.2. Methodology for Construction of Life Insurance Regulatory Compliance Index (LIRCI)

To assess the level of regulatory compliance of the Indian life insurers, this study tried to identify an appropriate proxy/variable. As there was no single proxy/variable available, this study has constructed an original, comprehensive, unweighted (equal weighted) Life Insurance Regulatory Compliance Index (LIRCI) consisting of six sub-indices. The components of the index were arrived after a thorough and rigorous study of the existing regulatory framework available for life insurers in India. The regulatory framework of the IRDA draws heavily from the Insurance Act 1938 and the IRDA Act 1999 with the provisions being laid down in the form of regulations, guidelines and circulars amended appropriately to suit the contemporary needs and challenges faced by the life insurance sector.

In the first instance, the IRDA regulations pertaining to life insurers in India relating to all the aspects were studied in detail. Secondly, the various aspects of regulations were combined depending upon their relatedness and similarity (appropriateness) and six groups were formed. The six groups identified include aspects relating to obligation, stakeholders' protection, public disclosure, financial stability, investment guidelines and other guidelines. Finally, these six groups were combined and a final index, viz., Life Insurance Regulatory

Compliance Index (LIRCI), was constructed. Thus, LIRCI consists of six sub-indices such as Obligation Fulfillment Index (OFI), Stakeholders' Protection Index (SPI), Public Disclosure Index (PDI), Financial Stability Index (FSI), Investment Guidelines Index (IGI) and Other Guidelines Index (OGI) as shown below. (Refer Table 2 for details)

$$\text{LIRCI} = \text{OFI} + \text{SPI} + \text{PDI} + \text{FSI} + \text{IGI} + \text{OGI}$$

Each sub-index consists of several variables/attributes. Each variable/attribute has been verified for its level of compliance based on the norm/rule/disclosure requirement/procedure given in the regulations. An equal score of 1 was given to each variable/attribute. Variables/attributes governed by norm/rule/disclosure requirement/procedure have dichotomous status, viz., yes or no. For these dichotomous variables/attributes, based on the compliance information, the life insurers were given a score of 1 for compliance or 0 for non-compliance or partial compliance; and later the scores were converted into percentages. However, there are certain other variables which are non-dichotomous in nature such as claims settlement, grievance disposal and non-lapsation. For these variables, the actual level of compliance is measured using the exact ratios and the ratios are converted into points in terms of 1.

Table 4 : Life Insurance Regulatory Compliance Index (LIRCI)

<i>Components/ Sub-Indices</i>	<i>Variables/Attributes</i>	<i>Score</i>	<i>Total Score</i>	<i>Score %</i>
Compliance of regulations regarding				
Obligation Fulfillment Index (OFI)	1) Yearly renewal of registration	1	3	100
	2) Rural sector obligation	1		
	3) Social sector obligation	1		
Stakeholders' Protection Index (SPI)	1) Insurance Advertisements and Disclosure	1	12	100
	2) Processing of Proposal Forms	1		
	3) Free Look Period Cancellation	1		
	4) Manner of Receipt of Premium	1		
	5) Prohibition of Rebates	1		
	6) Claims settlement	1		
	7) Grievance Disposal	1		
	8) Non-Lapsation	1		
	9) Individual Agents	1		
	10) Corporate Agents	1		
	11) Brokers	1		
	12) Referral Partners	1		
Public Disclosure Index (PDI)	1) Actuarial Attribute	1	6	100
	2) Investment Attribute	1		
	3) Corporate Governance Attribute	1		

<i>Components/ Sub-Indices</i>	<i>Variables/Attributes</i>	<i>Score</i>	<i>Total Score</i>	<i>Score %</i>
	4) Policyholders Attribute	1		
	5) Financial Attribute	1		
	6) Insurance Agent Attribute	1		
Financial	1) Accounting Practices	1	4	100
Stability	2) Solvency Margin	1		
Index (FSI)	3) Expenses of Management	1		
	4) Prohibition of Loans	1		
Investment	1) Life Fund Investments	1	3	100
Guidelines	2) Pension Annuity Group Fund Investments	1		
Index (IGI)	3) Unit Linked Fund Investments	1		
Other	1) Provision of Documents during Investigation	1	8	100
Guidelines	2) Opening of a New Place of Business	1		
Index (OGI)	3) Group Insurance	1		
	4) ULIPs	1		
	5) Key Man Insurance	1		
	6) File & Use Procedure	1		
	7) Anti-Money Laundering	1		
	8) Voluntary Reporting of Alterations	1		
Life Insurance Regulatory Compliance Index (LIRCI)			36	100

Note: Constructed by researchers based on IRDA regulatory framework

The scores of each of the six sub-indices were arrived by totaling the points secured by the various variables/attributes of the respective sub-indices and converted into percentage terms to ensure equal weightage for each of the six sub-indices. Finally, the total scores of LIRCI were arrived by totaling the scores of six sub-indices, which work out to 36 and later converted to percentage terms. However, the total scores of some insurers were reduced accordingly due to the reasons such as being a new entrant, non-participation in certain funds (like pension funds) and non-applicability of certain variables (non-lapsation data for the second year of operation, exemption on expense ratio during first five years of operation). Thus, an insurer will get total score of 36 or less based on the variables/attributes for which it is assessed. Based on the statutory and development functions of IRDA, the Life Insurance Regulatory Compliance Index (LIRCI) is constructed as shown in Table 4.

Checking the reliability and validity of Life Insurance Regulatory Compliance Index (LIRCI)

The LIRCI is tested for its reliability and validity before it is used for measurement.

Assessing the Reliability of the Life Insurance Regulatory Compliance Index (LIRCI)

According to Krippendorff (1980), "when assessing the reliability of a method of analysis one assesses the degree to which variations in results reflect true variations in data as opposed to extraneous variations stemming from the circumstances of the analysis". In order to assess the reliability of the index, Cronbach's Alpha test has been used to measure the internal consistency and the result is shown in Table 5. The Cronbach's Alpha of 0.776 suggests that the Life Insurance Regulatory Compliance Index (LIRCI) is reliable.

Table 5: Testing Reliability of Life Insurance Regulatory Compliance Index (LIRCI)

Cronbach's Alpha	0.776
------------------	-------

Note: Results computed by using SPSS 17.1

Assessing the Validity of the Life Insurance Regulatory Compliance Index (LIRCI)

According to Krippendorff (1980), "predictive validity is the degree to which predictions obtained by a method agree with directly observable facts". The study has used predictive validity and tested the validity by examining the correlation between level of regulatory compliance scores measured by the Life Insurance Regulatory Compliance Index (LIRCI) and performance indicators. Table 6 shows that the correlation between the level of regulatory compliance as explained by OFI, SPI, PDI, FSI, IGI and OGI and the performance indicators like Capital Position, Solvency, Asset Quality Non-linked, Asset Quality Linked, Reinsurance and Actuarial Issues, Liquidity, Insurance Leverage, Lapsation, Premium Growth, Non-linked Investment Performance, Total Investment Performance, Underwriting Performance, Net Profit Ratio, Return on Equity, Return on Assets and Return on Sales. It is clear from Table 6 that the correlation between regulatory compliance indices and some of the performance indicators is significant at either at 1% or 5% level. This suggests that the Index has predictive validity to measure the level of regulatory compliance of life insurers which it intends to measure.

Table 6: Testing Validity Using Pearson's Correlations

	CAP	SOL	AQNL	AQL	REAI	LIQ	LEV	LAP	PG	IPNL	IP	UWP	NPR	ROE	ROA	ROS
OFI	.034	.094	-.013	-.040	-.027	.067	-.118	.033	-.036	-.401**	.397**	.012	.035	-.108	-.059	-.033
SPI	.134	-.095	.198*	.040	-.087	-.248**	.181	-.345**	-.032	.071	-.073	.200*	.101	.142	.277**	-.108
PDI	.043	.188*	-.497**	.044	-.094	.104	-.741**	.168	.041	-.291**	.288**	-.296**	.068	-.520**	-.050	-.054
FSI	.115	.112	.000	.006	-.054	-.249**	.090	-.001	.198*	.069	-.077	-.129	.118	.039	-.219*	-.111
IGI	-.199*	-.178	-.167	-.195*	.378**	.164	-.467**	.197*	-.052	-.250**	.241**	-.263**	-.357**	-.217*	-.024	.368**
OGI	.050	-.055	-.108	.093	-.036	.016	.071	.051	.079	.029	-.018	.025	.017	-.079	-.083	-.016

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Note: Results computed using SPSS 17.0

6.3. Methodology for studying the determinants of level of regulatory compliance of Indian life insurers

To model the determinants of level of regulatory compliance by Indian life insurers, select firm-level characteristics including control variable were regressed against the dependent

variable, viz., the level of regulatory compliance (using LIRCI). The independent variables including size indicators as control variables for the model were chosen after many iterations through robustness test. The variables chosen are given in Table 3. The multiple linear regression model developed for this study is as follows:

$$\text{LIRCI} - \beta_0 + \beta_1 \text{LnTAA} + \beta_2 \text{ROA} + \beta_3 \text{LIQ} + \epsilon_i$$

6.4. DATA COLLECTION METHOD

This study used *content analysis* as a technique to collect the data required. The type of content analysis used in this study is manual in nature. The compliance information for each of the variable/attribute is obtained by studying the contents of relevant documents such as periodical public disclosures by life insurers and IRDA annual reports. The variables for the determinants of level of regulatory compliance were compiled from IRDA Annual Reports, IRDA Database and Public Disclosure of Indian life insurers.

6.5. PERIOD OF THE STUDY

This study covers a period of 6 years, viz., from 2005-06 to 2010-11 for measuring the level of regulatory compliance by Indian life insurers and its determinants. The reason for choosing this period is that the IRDA released the database and made public disclosures by life insurers mandatory during 2010. IRDA database gives financial details of all the life insurers from 2000 and it is being updated every year. Public disclosures (which contains information relating to the company profile, investment profile, liability valuation, risk concentration, solvency and business statistics), were made mandatory to life insurers from 2010 and the annual data were made available in 2010 for the period of 5 years, starting from 2005-06 to 2009-10. It is also being updated every year. From 2010-11 only, life insurers are also mandated to make quarterly public disclosure. Due to non-availability of compliance data (which is taken from public disclosures) from 2000-01 to 2004-05 (as public disclosures were made available only in 2010), this study confined its period from 2005-06 to 2010-11.

6.6. STATISTICAL TOOLS & SOFTWARE USED

The study used statistical tools such as Chi Square, ANOVA, Correlation and Multiple Linear Regression. To measure the level of IRDA regulatory compliance of life insurers, chi square test is used. To find the company-wise, year-wise, sub-indices-wise and ownership-wise differences in the level of regulatory compliance, analysis of variance is used. Correlation is used to find out the relationship between the regulatory compliance (using index) and performance & size indicators. To study the determinants of level of regulatory compliance, multiple linear regression model is used. The software packages such as MS Excel and SPSS 17.0 are used for analysing the data.

7. HYPOTHESES

For achieving the objectives of this study, the following null hypotheses were tested:

I. To measure the level of regulatory compliance of Indian life insurers

H₀₁: During the study period, the Indian life insurers have not complied with the overall IRDA regulations (using LIRCI).

H₀₂: During the study period, there is no significant correlation between the various sub-indices of Life Insurance Regulatory Compliance Index (LIRCI)

There is no significant correlation between

H_{02a}: Obligation Fulfillment Index (OFI)

H_{02b}: Stakeholders' Protection Index (SPI)

H_{02c}: Public Disclosure Index (PDI)

H_{02d}: Financial Stability Index (FSI)

H_{02e}: Investment Guidelines Index (IGI)

H_{02f}: Other Guidelines Index (OGI) and other sub-indices.

H₀₃: During the study period, there is no significant

H_{03a}: company-wise difference

H_{03b}: year-wise difference

H_{03c}: sub-indices-wise difference

H_{03d}: ownership-wise difference in Life Insurance Regulatory Compliance Index (LIRCI) among the Indian life insurers.

II. To study the determinants of level of regulatory compliance of Indian life insurers

H₀₄: There is no significant relationship between the level of overall regulatory compliance (using LIRCI) and

H_{04a}: Total Admitted Assets (LnTAA) (Size indicator)

H_{04b}: Return on Assets (ROA)

H_{04c}: Liquidity (LIQ).

8. RESULTS AND DISCUSSION

I. To measure the level of regulatory compliance of Indian life insurers

H₀₁: During the study period, the Indian life insurers have not complied with the overall IRDA regulations (using LIRCI).

Table 7 shows that the level of overall regulatory compliance measured using LIRCI ranges from a minimum of 81% (Sahara India Life Insurance Company) to a maximum of 100% (Shriram Life Insurance Company, IDBI Federal Life Insurance Company and Star Union Dai-ichi Life Insurance Company). The highest mean value of 97.72 was found in 2005-06 and a SD of 4.19 in 2010-11.

Chi Square Test is applied to check the scores of each life insurer with its benchmark score. The mean score in each year is considered as benchmark score. As the p-value 1.000 is greater than 0.05 in all the years, the *Null hypothesis, H₀₁, is accepted for all the years*. Thus, during the study period, the Indian life insurers have not complied with the overall IRDA regulations (using LIRCI).

Table 7: Level of Regulatory Compliance by Indian Life Insurers using Life Insurance Regulatory Compliance Index (LIRCI) during 2005-06 to 2010-11 (%)

S. No	Company	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
1	Aviva	98	98	97	89	96	95
2	Bajaj	98	96	96	97	88	99
3	Birla	99	96	96	94	96	95
4	HDFC	98	96	96	94	93	99
5	ICICI	98	95	95	94	97	97
6	ING	98	96	95	87	96	96
7	Max	98	95	88	96	96	94
8	Met	98	95	96	96	96	93
9	Kotak	96	98	84	95	96	96
10	Rel	99	98	96	92	85	96
11	Saha	98	98	96	98	88	81
12	SBI	99	98	98	99	96	96
13	Shri	100	93	92	96	91	99
14	TATA	99	99	96	96	96	96
15	LICI	91	97	94	92	94	96
16	Bharti	NE	99	96	97	92	95
17	Future	NE	NE	97	97	97	86
18	IDBI	NE	NE	100	95	98	95
19	Aegon	NE	NE	NE	96	98	98
20	Canara	NE	NE	NE	98	98	98
21	DLF	NE	NE	NE	96	95	97
22	Star	NE	NE	NE	100	98	96
23	India	NE	NE	NE	NE	95	93
	N	15	16	18	22	23	23
	Minimum	91	93	84	87	85	81
	Maximum	100	99	100	100	98	99
	Mean	97.72	96.63	94.79	95.14	94.56	95.10
	Std. Deviation	2.04	1.76	3.74	2.99	3.57	4.19
	Chi-Square	.000	.000	.000	.000	.000	.000
	Df	14	15	17	21	22	22
	Asymp. Sig.	1.000	1.000	1.000	1.000	1.000	1.000

Note: 1) Scores calculated using disclosure on LIRCI.

2) Results computed using SPSS. 3) NE-Not in Existence.

H₀₂: During the study period, there is no significant correlation between the various sub-indices of Life Insurance Regulatory Compliance Index (LIRCI)

There is no significant correlation between

H_{02a}: Obligation Fulfillment Index (OFI)

H_{02b}: Stakeholders Protection Index (SPI)

H_{02c}: Public Disclosure Index (PDI)

H_{02d}: Financial Stability Index (FSI)

H_{02e}: Investment Guidelines Index (IGI)

H_{02f}: Other Guidelines Index (OGI) and other sub-indices.

Table 8: Pearson Correlation Matrix between the various Sub-Indices of Life Insurance Regulatory Compliance Index (LIRCI)

	OFI	SPI	PDI	FSI	IGI	OGI
OFI	1					
SPI	-.019	1				
PDI	.094	-.150	1			
FSI	-.024	.088	-.165	1		
IGI	.041	-.176	.374**	-.116	1	
OGI	-.080	.377**	-.044	.148	-.109	1

** Correlation is significant at the 0.01 level (2-tailed). Note: Results computed using SPSS 17.0

Table 8 shows the correlation between the sub-indices of Life Insurance Regulatory Compliance Index (LIRCI). There is a positive and significant correlation of a) 0.377 (at 1% level) between Stakeholders' Protection Index (SPI) & Other Guidelines Index (OGI); and b) 0.374 (at 1% level) between Public Disclosure Index (PDI) & Investment Guidelines Index (IGI). Hence, the Null Hypotheses, **H_{02b}**, **H_{02c}**, **H_{02e}** and **H_{02f}**, are rejected. Thus, during the study period, there is a significant positive correlation between Stakeholders' Protection Index (SPI) & Other Guidelines Index (OGI); and Public Disclosure Index (PDI) & Investment Guidelines Index (IGI). However, as the correlation is not significant between Obligation Fulfillment Index (OFI), Financial Stability Index (FSI) and other sub-indices, the Null Hypotheses, **H_{02a}** and **H_{02d}**, are accepted. Thus, during the study period, there is no significant correlation between Obligation Fulfillment Index (OFI), Financial Stability Index (FSI) and other sub-indices.

H₀₃: During the study period, there is no significant

H_{03a}: company-wise difference

H_{03b}: year-wise difference

H_{03c}: sub-indices-wise difference

H_{03d}: ownership-wise difference in Life Insurance Regulatory Compliance Index (LIRCI) among the Indian life insurers.

Table 9 gives the results based on the ANOVA test for Life Insurance Regulatory Compliance Index (LIRCI). As the p-value for year-wise difference is less than 0.05, the Null Hypothesis,

H_{03b} , is rejected at 5% level of significance. As the p-value for sub-indices-wise difference is less than 0.05, the Null Hypothesis, H_{03c} , is rejected at 1% level of significance. Thus, during the study period, there are significant year-wise and sub-indices-wise differences in Life Insurance Regulatory Compliance Index (LIRCI) among the Indian life insurers. As the p-values are more than 0.05, the Null Hypotheses, H_{03a} and H_{03d} , are accepted. Hence, during the study period, there are no significant company-wise and ownership-wise differences in Life Insurance Regulatory Compliance Index (LIRCI) among the Indian life insurers.

Table 9: Analysis of Variance for Life Insurance Regulatory Compliance Index (LIRCI)

Company-wise					
Source of Variation	SS	df	MS	F	p-value
Between Companies	204.817	22	9.310	.780	.742
Within Companies	1121.741	94	11.933		
Total	1326.558	116			
Year-wise					
Source of Variation	SS	df	MS	F	p-value
Between Years	130.286	5	26.057	2.418	.040
Within Years	1196.271	111	10.777		
Total	1326.558	116			
Sub-Indices-wise					
Source of Variation	SS	df	MS	F	p-value
Between Indices	5381.895	5	1076.379	15.008	.000
Within Indices	49916.081	696	71.719		
Total	55297.976	701			
Ownership-wise					
Source of Variation	SS	df	MS	F	p-value
Between Groups	17.697	1	17.697	1.555	.215
Within Groups	1308.861	115	11.381		
Total	1326.558	116			

Note: Results computed using SPSS 17.0

II. To study the determinants of level of regulatory compliance of Indian life insurers

H_{04} : There is no significant relationship between the level of overall regulatory compliance (using LIRCI) and

H_{04a} : Total Admitted Assets (LnTAA) (Size indicator)

H_{04b} : Return on Assets (ROA)

H_{04c} : Liquidity (LIQ).

Table 10 (a): Descriptive Statistics – Variables of Analysis

Variables	N	Minimum	Maximum	Mean	Std. Deviation
LIRCI	117	.805575	.995536	.95523642	.033618448
LnTAA	117	7.247793	1.857688E1	1.28252150E1	2.176329751
ROA	117	-1.261922E0	.509649	-8.92710677E-2	.212983594
LIQ	117	.000000	.609975	.10632998	.134433185
Valid N	117				

Results obtained by using SPSS 17.0.

Table 10(a) portrays the descriptive statistics for the variables used in this study. The level of regulatory compliance measured by LIRCI averaged 0.955 and ranged from 0.805 to 0.995. The insurance company size as measured by the total admitted assets (both policyholders' and shareholders') had an average of 1.28 and ranged from 7.247 to 1.857. The ratio of Return on Assets (Net income before taxes/Total Admitted Assets) had an average of -8.927 and ranged from -1.261 to 0.509. Liquidity (Outstanding Claims/Cash and bank Balance) had an average of 0.134 and ranged from 0 to 0.609.

Table 10(b) shows the model summary where the R square value is 6.5% and adjusted R square value is 4%. It means 4% of the variation of dependent variable is explained by independent variables. From the results of analysis of variance, it is found that the F test of the model is equal to 2.615 and is significant at 5% level.

Total Admitted Assets (Size): The financial health of insurance firms is influenced by their assets size. Total premium, total admitted assets and capital & surplus are some of the variables used to assess the firm size. This study used Total Admitted Assets (Total of Policyholders' admitted assets and Shareholders' admitted assets) to measure the financial strength of life insurers as used in some of the earlier studies. Total Admitted Assets implies the eligible assets available in the policyholders' and shareholders' funds for the purpose of determining the solvency ratio of an insurance firm. From the Table 10(b), it is clear that there is a negative relationship between the level of regulatory compliance (using LIRCI) and insurer size. The coefficient for the natural logarithm of total admitted assets is negative and significant at 5% level of significance. Its t-test value is -2.022, which is greater than the table value. Hence, the Null hypothesis, H_{0a} , is rejected. Thus, there is a significant negative relationship between the insurer size and the level of regulatory compliance (using LIRCI). The Beta value is -0.209. Using the standardised coefficient and keeping all the other variables constant, if the size (as explained by total admitted assets) increases by 100, the level of regulatory compliance will reduce by 20. Thus, it can be concluded that as the size of life insurers' increase, their level of regulatory compliance decreases as it becomes difficult for them to ensure 100% compliance with regulations relating to all aspects.

Return on Assets (ROA): It measures the profitability on total assets in terms of Net income before taxes to Total Admitted Assets. From the Table 10(b), it is clear that there is a positive relationship between the level of regulatory compliance (using LIRCI) and Return on Assets. The variable ROA has a positive coefficient value, viz., 0.131 but is not significant. The Beta coefficient for this variable is positive but not significant. Its t-test value is 1.290 which is

lesser than the critical value. Hence, the Null hypothesis, H_{04b} , is accepted. Thus, there is no significant relationship between return on assets and the level of regulatory compliance (using LIRCI). After the opening up of the Indian life insurance market in the year 2000, 12 years have passed and the new entrants are yet to break even. Hence, the level of regulatory compliance is not determined by the profitability of life insurers.

Liquidity: Liquidity is the ability of the insurers to pay outstanding claims out of their cash balances. The cash and bank balances are to be kept sufficient to meet their immediate liabilities towards "claims due for payment but not paid". This comfortably covers the incurred but not reported portion of claims liability. This study used the ratio of outstanding claims to cash and bank balances (Indian Financial Sector Assessment Report, 2009). The regression result in Table 10(b) clearly shows that there is negative relationship between the level of regulatory compliance (using LIRCI) and liquidity. The Beta coefficient for this variable is negative and not significant. Its t-test value is -1.498, which is lower than the critical value and the Null hypothesis, H_{04c} , is accepted. Hence, there is no significant relationship between the liquidity and the level of regulatory compliance (using LIRCI). As the level of regulatory compliance of life insurers increases on all aspects, the confidence of the stakeholders at large and the policyholders in particular, also increases. Life insurance being a long term contract, the faith of the stakeholders on the players does not require the life insurers to carry more liquid assets.

Table 10(b): Regression Results - Determinants of Level of Overall Regulatory Compliance (using LIRCI)

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson		
1	.255 ^a	.065	.040	.032937738	1.923		
Analysis of Variance							
Model		SS	df	Mean Square	F	Sig.	
1	Regression	.009	3	.003	2.615	.055 ^a	
	Residual	.123	113	.001			
	Total	.131	116				
Regression Coefficient							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.002	.021		47.739	.000		
LnTAA	-.003	.002	-.209	-2.022	.046**	.778	1.285
ROA	.021	.016	.131	1.290	.200	.807	1.239
LIQ	-.035	.023	-.140	-1.498	.137	.952	1.051

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.92300612	.97211814	.95523642	.008565223	117
Residual	-1.560064703E-1	.040812664	-4.884506854E-16	.032509029	117
Std. Predicted Value	-3.763	1.971	.000	1.000	117
Std. Residual	-4.736	1.239	.000	.987	117

a. Predictors: (Constant), LIQ, ROA, LnTAA b. Dependent Variable: LIRCI Note: Results obtained by using SPSS 17.0.

** Significant @ 5% level of significance.

Heteroscedasticity, Autocorrelation and Multicollinearity Test: The Durbin Watson value of 1.923 indicates that the values are independent and there is no problem of autocorrelation. The test of Collinearity statistics which test the multicollinearity of the model gives two values called Tolerance and VIF. From the values of Tolerance and VIF it is clear that, there is no Multicollinearity problem. From the table 10(c), it is clear that no two independent variables are highly correlated. Hence, there exists no multicollinearity problem. Further, it is clear that the residuals are identically distributed with mean zero and equal variances and hence, the model does not face a problem of heteroscedasticity.

Table 10(c): Pearson Correlation Matrix

	LIRCI	LnTAA	ROA	LIQ
LIRCI	1			
LnTAA	-.182	1		
ROA	.024	.439	1	
LIQ	-.171	.219	.110	1

Note: Results obtained by using SPSS 17.0.

9. SUGGESTIVE ACTION PLAN FOR LIFE INSURERS

This study found that there exist an inverse relationship between overall regulatory compliance and the size of life insurers. As the life insurers grow in size, they find it difficult to achieve total regulatory compliance.

The Indian life insurance market has considerable potential due to the demographic dividend of the Indian population and the life insurers can further penetrate and provide insurance cover for the uninsured masses. As financial intermediaries holding repositories of policyholders' funds, the life insurance industry as a whole has to mature into a developed one through total regulatory compliance on all aspects. In this process, *the life insurers have to incur compliance costs in establishing systems that are automated and possessing built in controls and checks*. These systems will ensure total regulatory compliance automatically thereby reducing the chances of non-compliance right from designing brochure for new products with clear policy terms, timely processing of proposal forms, grievance disposal and claims settlement, payment of remuneration to intermediaries within the limits specified, operational efficiency through controls on limit on management expenditure, ensuring periodic public disclosure, generating statement of accounts for voluntary reporting to the regulator,

etc. This will definitely provide rich benefits to the players as they grow in size, the industry as a whole and the stakeholders' in particular in the future.

10. CONCLUSION

The Indian life insurance regulatory architecture has evolved over the years and is relatively well developed keeping pace with the dynamic market conditions. In this context, this study developed an original index, viz., Life Insurance Regulatory Compliance Index (LIRCI) to measure the level of regulatory compliance and modeled its determinants. It is found that the life insurers have no overall regulatory compliance during the study period. It is also found that the overall regulatory compliance is negatively and significantly determined by the size of the life insurers. Hence, the Indian life insurers should strive to achieve total regulatory compliance thereby enhancing their performance than ever before.

End Notes

- Cummins, D. J., & Venard, B. (2008). Insurance Market Dynamics: Between Global Developments and Local Contingencies. *Risk Management and Insurance Review*, 11 (2), 295-326.
- Skipper, J. H., Starr, C. V., & Rob, J. M. (2000). Liberalisation of Insurance Markets: Issues and Concerns. In *Insurance and Private Pensions Compendium for Emerging Economies* (Vols. Book 1, Part 1:6)b).
- Skipper, J. H., & Klein, R. W. *Insurance Regulation in the Public Interest: The Path Towards Solvent, Competitive Markets*. Working Paper no. 99-4, Georgia State University, Center for Risk Management and Insurance Research.
- Boonyasai, T., Grace, M. F., & Skipper, J. H. *The Effect of Liberalization and Deregulation on Life Insurer Efficiency*. Working Paper No. 02-2, Georgia State University, Center for Risk Management and Insurance Research.
- NAIC. *State Insurance Regulation: History, Purpose and Structure*. Available at http://www.naic.org/documents/consumer_state_reg_brief.pdf
- Bahna-Nolan, M., Isherwood, J., Paton, B., Scheinerman, D., Schlinsog, J., Sen, S., et al. (2013). *Life Insurance Regulatory Structures and Strategy: EU compared with US*. Committee on Finance Research and CAS, CIA, SOA Joint Risk Management Section. Arlington, Virginia: Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries.
- KPMG (2011). *Solvency II*. Available at <http://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/Documents/solvency-II.pdf>
- European Commission. (2013). *Latest Developments*. Available at http://ec.europa.eu/internal_market/insurance/solvency/latest/index_en.htm
- IRDA. (2007, July 12). *History of Insurance in India*. Retrieved January 31, 2012, from www.irda.gov.in: Available at http://www.irda.gov.in/ADMINCMS/cms/NormalData_Layout.aspx?page=PageNo4&mid=2
- IRDA. (2013). *Indian Insurance in the Global Scenario-Annual Report 2012-13*. Hyderabad : Insurance Regulatory Development Authority.
- ET Bureau. (2013, February 11). Next Step is to Ensure Compliance: IRDA Chief. *Economic Times*.
- Meier, K. J. (1988). *The Political Economy of Regulation: The Case of Insurance*. Albany: SUNY Series in Public Administration - State University of New York Press.
- Skipper Jr, H. D., Starr, C. V., & Rob, J. M. (2000). Liberalisation of Insurance Markets: Issues and Concerns. In *Insurance and Private Pensions Compendium for Emerging Economies* (Vol. Book 1, p. Part 1:6)b). France: OECD.
- Lee, E. S. (2001). Efficient Regulation of the Insurance Industry to Cope with Global Trends of Deregulation and Liberalisation. *Bond Law Review*, 13 (1), 46-63.
- Schiro, J. J. (2006). External Forces Impacting the Insurance Industry: Threats from Regulation. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 31 (1), 25-30.
- Shiu, Y.-M. (2009). Dynamic Financial Analysis in the Insurance Industry. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 34 (2), 175 – 196.
- KPMG Report. (2012). *Evolving Insurance Regulation Time to get Ahead*. KPMG.
- Wright, K. M. (1992). *The Life Insurance Industry in the United States: An Analysis of Economic and Regulatory Issues*. Policy

- Research Working Paper WPS 857, Financial Policy and Systems Division, Country Economics Department. Washington D.C.: The World Bank.
- Klein, R. W. (1995). Insurance Regulation in Transition. *The Journal of Risk and Insurance*, 62 (3), 363-404.
- Pottier, S. W., & Sommer, S. W. (1998). Regulatory Stringency and New York Licensed Life Insurers. *The Journal of Risk and Insurance*, 65 (3), 485-502.
- Grace, M. F., & Klein, R. W. (1999). Efficiency Implications of Alternative Regulatory Structures for Insurance. *American Enterprise Institute Conference on Optional Federal Chartering and Regulation of Insurance*. Atlanta: Center for Risk Management and Insurance Research, Georgia State University.
- Willenborg, M. (2000). Regulatory Separation as a Mechanism to Curb Capture: A Study of the Decision to Act against Distressed Insurers. *The Journal of Risk and Insurance*, 67 (4), 593-616.
- Ruhil, A. V., & Teske, P. (2003). Institutions, Bureaucratic Decisions, and Policy Outcomes: State Insurance Solvency Regulation. *The Policy Studies Journal*, 31 (3), 353-372.
- Hamwi, I. S., Hudson, T., & Chen, Y. (2004). Solvency Regulation in the Property-Liability Insurance Industry. *International Advances in Economic Research*, 10 (4), 313-327.
- Neale, F. R., & Peterson, P. P. (2005). The Effect of the Gramm-Leach-Bliley Act on the Insurance Industry. *Journal of Economics and Business*, 57 (4), 317-338.
- Grace, M. F., & Phillips, R. D. (2007). The Allocation of Governmental Regulatory Authority: Federalism and the Case of Insurance Regulation. *The Journal of Risk and Insurance*, 74 (1), 207-238.
- Grace, M. F., & Klein, R. W. (2009). *Alternative Frameworks for Insurance Regulation in the United States*. Independent Policy Report, Oakland: The Independent Institute.
- Harrington, S. E. (2009). The Financial Crisis, Systemic Risk, and the Future of Insurance Regulation. *The Journal of Risk and Insurance*, 76 (4), 785-819.
- Vaughan, T. M. (2009). The Economic Crisis and the Lessons from (and for) U.S. Insurance Regulation. *Journal of Insurance Regulation*, 3-18.
- Schich, S. (2009). Insurance Companies and the Financial Crisis. *OECD Journal: Financial Market Trends* (2), 123-151.
- Acharya, V. V., Biggs, J., Richardson, M., & Ryan, S. (2009, August). *On the Financial Regulation of Insurance Companies*. Available at NYU Stern School of Business: <http://webdocs.stern.nyu.edu/salomon/docs/whitepaper.pdf>
- McShane, M. K., Cox, L. A., & Butler, R. J. (2010). Regulatory Competition and Forbearance: Evidence from the Life Insurance Industry. *Journal of Banking and Finance*, 34 (3), 522-532.
- Pottier, S. W. (2011). Life Insurer Efficiency and State Regulation: Evidence of Optimal Firm Behavior. *Journal of Regulatory Economics*, 39 (2), 169-193.
- Carroll, N., & Burke, M. (2012). Has Financial Reform Decreased Concentration in the Life Insurance Industry? *International Journal of Business and Economics Perspectives*, 7 (1).
- Rees, R., Gravelle, H., & Wambach, A. (1999). Regulation of Insurance Markets. *The Geneva Papers on Risk and Insurance Theory*, 24, 55-68.
- Rees, R., Kessner, E., Klemperer, P., & Carmen. (1999). Regulation and Efficiency in European Insurance Markets. *Economic Policy*, 14 (29), 363-397.
- Eling, M., Schmeiser, H., & Schmit, J. T. (2007). The Solvency II Process: Overview and Critical Analysis. *Risk Management and Insurance Review*, 10 (1), 69-85.
- Vaughan, T. M. (2009). *The Implications of Solvency II for U.S. Insurance Regulation*. Policy Brief. Networks Financial Institute. Indiana, USA: Indiana State University.
- Elderfield, M. (2009). Solvency II: Setting the Pace for Regulatory Change. *The Geneva Papers on Risk and Insurance - Issues and Practice*, 34 (1), 35-41.
- Eling, M., Klein, R. W., & Schmit, J. T. (2009). *Insurance Regulation in the United States and the European Union A Comparison*. Independent Policy Reports, Oakland, CA: The Independent Institute.
- Brien, C. O. (2010). Insurance Regulation and the Global Financial Crisis: A Problem of Low Probability Events. *The Geneva Papers on Risk and Insurance - Issues and Practice*, 35 (1), 35-52.
- KPMG. (2011). *Evolving Insurance Regulation on the Move*. U.K.: KPMG International.
- Lorson, J., Schmeiser, H., & Wagner, J. (2012). *Evaluation of Benefits and Costs of Insurance Regulation – A Conceptual*

- Model for Solvency II*. Working Papers on Risk Management and Insurance No. 115. Institute of Insurance Economics. Switzerland: University of St.Gallen.
- Boonyasai, T. (1999). *The Effect of Liberalisation and Deregulation on Life Insurer Efficiency*. Atlanta: Georgia State University.
- Bhaumik, S. K. (1999, April-June). Liberalisation of the Insurance Industry: Some Lessons from the US experience. *ICRA Bulletin-Money & Finance*, pp. 74-88.
- Boonyasai, T. (2001). *The Effect of Liberalisation on Thai Life Insurer Efficiency*. Available at <http://anchan.lib.ku.ac.th/kukr/bitstream/003/16616/1/KC3915002.pdf>
- Thampy, A. (2002). *Uniform Regulatory Costs: Analysis of Welfare Implications in the Insurance Industry*. Working Paper No.189. Bangalore: Indian Institute of Management.
- Rastogi, S., & Sarkar, R. (2006). Enhancing Competitiveness: The Case of the Indian Life Insurance Industry. *Conference on Global Competition & Competitiveness of Indian Corporate* (pp. 559-568). India: IIMK and IIML.
- Jean, K. W. (2010). History of Insurance, Market Development and Regulation in Seven Least Developed Countries in Asia: Afghanistan, Bangladesh, Bhutan, Cambodia, Laos, Myanmar and Nepal. *Asia-Pacific Journal of Risk and Insurance*, 5 (1), 1-39.
- Devi, K. S. (2011). *A Study of the Impact of Liberalization on the Indian Life Insurance Industry*. Department of Economics. Vadodara: The M.S. University of Baroda.
- RBI. (2012). *Financial Stability Report*. Issue No. 5. Mumbai: Financial Stability Unit, Reserve Bank of India.
- International Monetary Fund. (2013). *India: Financial System Stability Assessment Update*. IMF Country Report No.13/8. Monetary and Capital Markets and Asia and Pacific Departments. Washington, D.C.: International Monetary Fund.
- Krippendorff, K. (1980). Validity in Content Analysis. In E. Mochmann (Ed.), *Computerstrategien für die Kommunikationsanalyse* (pp. 69-112). Frankfurt, Germany: Campus.
- Indian Financial Sector an Assessment, (2009). Committee on Financial Sector Assessment, Volume III, Chapter III, Published by the Government of India and RBI.

APPENDIX

List of Indian Life Insurance Companies

<i>Abbreviations</i>	<i>Names of the company</i>
	Private Sector
AVIVA	Aviva life insurance company
BAJAJ	Bajaj Allianz life insurance company
BHARTI	Bharti Axa life insurance company
BSLI	Birla Sun life insurance company
CANARA	Canara HSBC OBC life insurance company
DLF	DLF Pramerica life insurance company
EDEL	Edelweiss Tokio Life Insurance Company (started in 2011-2012 only and not taken for this study)
FUTURE	Future Generali life insurance company
HDFC	HDFC life insurance company
ICICI	ICICI Prudential life insurance company
IDBI	IDBI Fortis life insurance company

<i>Abbreviations</i>	<i>Names of the company</i>
INDFIR	India First life insurance company
ING	ING Vysya life insurance company
KOTAK	Kotak Mahindra life insurance company
METLIFE	Met life insurance company
MNYL	Max Newyork life insurance company
RELIANCE	Reliance life insurance company
RELIGARE	Aegon Religare life insurance company
SAHARA	Sahara life insurance company
SBI	SBI life insurance company
SHRIRAM	Shriram life insurance company
STAR	Star Union Dai-Chi life insurance company
TATA	TATA AIG life insurance company
	Public Sector
LICI	Life insurance Corporation of India

Dr B. Charumathi, Department of Management Studies, School of Management, Pondicherry University Pondicherry, Tamilnadu, India.

K. Nithya, Department of Management Studies, School of Management, Pondicherry University, Pondicherry, Tamilnadu, India.