Financial Changes in Insurance Sector of Pakistan

Since 2001-2010

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Abstract

The purpose of this paper is to discuss Financial Changes in Insurance Sector of Pakistan (2001 to 2010). Mainly this study discussed changes in profitability of insurance sector of Pakistan before taxation as well as changes in sales of insurance sector of Pakistan over the decade. This study finds out consistency of Paid-up-capital, numbers of Shares, equity, total assets, sales, profit before tax and profit after tax over the decade. Changes and modifications in following variables also presented graphically in this paper.
Keywords: Paid up capital, Equity and Total Assets

Introduction

Insurance is designed to protect the financial well-being of an individual, company or other entity in the case of unexpected loss. Some forms of insurance are required by law, while others are optional. Agreeing to the terms of an insurance policy creates a contract between the insured and the insurer. In exchange for payments from the insured (called premiums), the insurer agrees to pay the policy holder a sum of money upon the occurrence of a specific event. In most cases, the policy holder pays part of the loss (called the deductible), and the insurer pays the rest.

Types of Insurance

- **Travel insurance:** To cover you in case you lose your luggage, miss your plane or train.
- **Vehicle insurance:** To cover your vehicle's accidental damages or if your vehicle is stolen.
- **Home buildings insurance:** To cover your home in case of fire and other defined events.
- **Contents Insurance**: To cover your property in case of burglary, fire and other defined events.
- **Health insurance:** To cover you for injury, or medical or dental treatment.
- **Life insurance:** To cover you if you can't work due to an accident or illness, or if you die.
- **Consumer credit insurance:** To cover you if you can't repay some of your loan because you are unable to work.

Some reasons to insure:

- Insurance can help you replace something you own and could not afford to replace. For example, if your home was destroyed in a fire, you would need a big lump sum to rebuild it.

- Insurance can protect you from something that might not happen, but which would be bad for you if it did. For example, if you were injured in an accident and couldn't work anymore, you would need money to live on.
- Insurance can help you pay off a debt if something you've bought with a loan is damaged or destroyed. For example, if you took out a loan to buy a car and the car was written off in an accident, you would need money to pay off the loan.

Insurance Sector in Pakistan

The business of insurance in Pakistan has been regulated under the Insurance Act, 1938. In order to implement and administer the provisions of the aforesaid Act, the Government established the Department of Insurance, in April 1948, as a department of the Ministry of Commerce, headed by a Controller of Insurance. Until eventual implementation of the new law of insurance, namely, Insurance Ordinance, 2000 which has only recently been enacted, the insurance industry has continued to be regulated by the Controller of Insurance.

MAIN FEATURES OF INSURANCE ORDINANCE, 2000

- The Ordinance provides for regulation of Insurance Industry by an autonomous body i.e. the Commission replacing the institution of Controller, Department of Insurance.
- The insurance business has been bifurcated into two main divisions,
    - Life Insurance Business; and
    - Non-Life Insurance Business. Each of these two divisions has further been divided into different classes.
- Capital requirements for life insurance and non-life insurance companies have been raised from Rs. 100 million to Rs. 150 million and from Rs. 40 million to Rs. 80 million respectively.
- The minimum solvency margin has not been fixed and is to be prescribed under the rules from time to time.
- Enforcement of the insurance law has been made more effective by giving to the Commission powers of investigation and issuance of directives.
- Detailed provisions have been made to prevent insurers from indulging in practices prejudicial to the interest of policyholders.
- Provision has been made for the institution of an Insurance Ombudsman who shall have the authority to investigate mal-administration of insurance companies and to redress grievances of the insurers.
- Provision has been made for the constitution of an Insurance Tribunal, which shall have, civil as well as criminal jurisdiction.
- Special provisions have been made for the establishment of a Small Disputes Resolution Committee for speedy settlement of minor claims.
- Penal provisions for contravention of the insurance law have been made stricter.
- Reinsurance arrangements have been strengthened and rules would be made for reinsurance arrangements even outside Pakistan.
- Life insurance business companies are required to maintain separate funds for separate classes of their business.
- Adequate disclosure requirements by insurance companies have been prescribed for purposes of reporting to the regulator.

Literature Review:

The Growth Rates of Private Health Insurance Premium were analyzed by Feldstein ET. AL (1995) for a selected sample of 95 insured groups over the period 1985 to 1992. The result of this study describes that during this time period, premiums increased by approximately 150% in nominal terms and by 45% in real terms. The observed rate of growth was not constant over time, however. The most rapid growth occurred during the years 1986 to 1989; thereafter, the rate of increase in premiums declined. Further, this analysis suggests that the insurance underwriting cycle may play an important role in influencing insurance premium growth rates. These results support the belief that health maintenance organization induced competition has potential to control the rate of increase in health care costs.

The study titled "A Review of Insurance Sector and HRM/HRD Aspects" by PROF. DR. KHAWAJA AMJAD SAEED in 2007 describes that Insurance Sector has registered a very slow growth in the history of Pakistan. Based on this research study, the following conclusions emerged:

1. Listed insurance sector on Karachi Stock Exchange in terms of companies is only 4.4%.

2. Share of listed insurance sector on total listed companies on Karachi Stock Exchange is only 1.41%.
3. Out of 637 listed companies, only 29 relate to insurance sector.
4. From the birth of Pakistan till now we have added only 29 listed companies- giving us a ratio of less than 0.5 per company per year.
5. Turnover for 10 months (January – October 2007) on the Karachi Stock market was only 1.55% of the total turnover.

A research paper written by Robert Cull, Lemma W. Senbet, Marco Sorge in Feb, 2005, this paper has provided an empirical evidence on the impact of deposit insurance on banking sector development and stability. We use a unique dataset capturing a variety of deposit insurance features, such as coverage, entry hurdles, premium structure, etc. The empirical construct is guided by recent theories of banking regulation that employ an agency framework. Overall we find out the empirical evidence to be consistent with this theory.

A research paper written by Krishna Gopal Menon and David D. Williams in April, 1994, that paper provides some empirical tests of the insurance hypothesis of auditing. The disclosure of L&H's bankruptcy are attributable to the absence of the expected insurance coverage, i, rather than to problems of monitoring introduced by the bankruptcy of the auditor. III. Conclusion This paper provides some empirical tests of the insurance hypothesis of auditing. The disclosure of L&H's bankruptcy was found to have a negative impact on L&H client stock prices. There was no corresponding increase in stock prices on announcement of a replacement auditor. The value of the expected insurance coverage, i, included in the price of the stock, was hypothesized to vary with the magnitude of losses previously sustained by the security and with the security's classification either as an IPO or as a seasoned security. These hypotheses were supported empirically. Overall, the results of the paper suggest that auditors are viewed by investors as guarantors of financial statements, and in a sense, as guarantors of investments. Investors appear to be willing to pay a premium for the right to recover potential investment losses from auditors through litigation. These findings have important implications.

A research study conducted by Jonathan Gruber in Dec, 2001, that provide a key question or understanding the determinants of health insurance coverage, as well as the broader impacts of tax reform, is the sensitivity of insurance decisions to tax subsidies. The findings in this paper suggest that this sensitivity is significant. In particular, we find that the firm's decision to offer insurance is sizeable affected by the tax price of insurance; the implied elasticity of firm offering with respect to taxes is -0.7. This confirms the conclusion from other recent work that employers are very sensitive to tax incentives in their decisions to offer insurance. we also find that taxes appear to exert little independent influence on worker take up decisions. This is consistent as well with other findings that worker take up of insurance is not price elastic.

A research study conducted by Bradley Herring and Mark V. Pauly in 2001, the results of this study of a large sample of individual insurance purchasers the mid-to-late-90s are highly consistent with those exhibited in our earlier work using a smaller sample of purchasers the late-80s. Premiums are not very strongly related to risk, and the risk associated with differences in health status (other things equal) has no detectable relationship to premiums buyers actually paid-whatever it might do to the premiums some insurers quote. Somehow, high-risk individuals in the individual market who do end up buying insurance pay premiums not very different from those charged to average risks.

A research paper is conducted by Jan J. Kerssens and Peter P. Groenewegen in 2005, this study examined preferences of per sons with social health insurance for 27 different hypothetical insurance schemes (scenarios) that differed across 12 characteristics. Respondents made discrete choices regarding four random pairs of scenarios. Response data are modeled within benefit (or satisfaction) functions that provide information on whether the given characteristics are important; the relative importance of characteristics and the rate at which individuals are willing to trade between characteristics.

This study is written by Claus Steinle and Bernd Eggers in 1994, Numerous concepts and instruments of strategic plan- ning have been developed for the underlying interests of the industrial enter- prises, but not for insurance companies.

A research is written by J. S. Dagpunar in 2000; the main advantages of the method described here are that it provides a continuous time solution with no necessity to discrete the state space. As a result, the method gives exact solutions, whereas previously implemented value iteration methods give approximate solutions, both from the discretisation of the state space, and the slow convergence for MDPs with large state spaces.

A research paper is written by K. A. Smith, R. J. Willis, M. Brooks in 2000, this paper has discussed a case study from the insurance industry that demonstrates the benefits of data mining to the daily

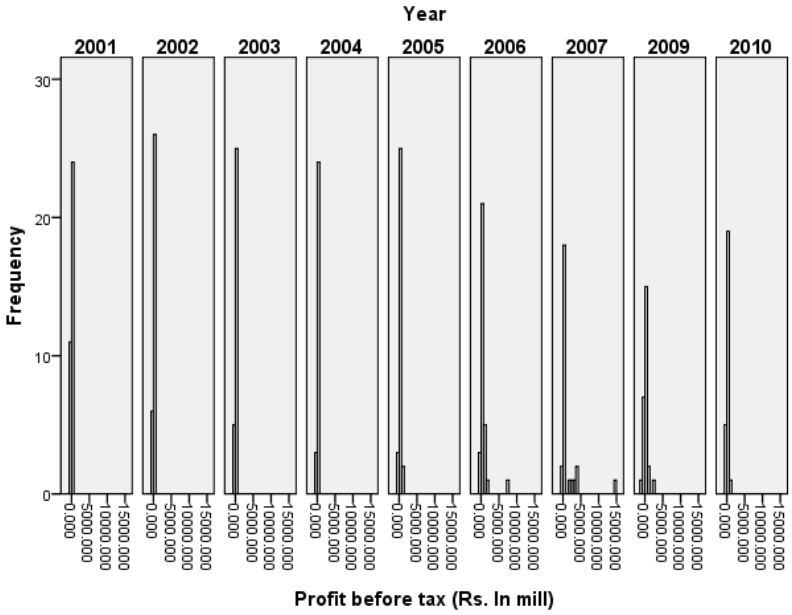
operation. The business problem is the optimal pricing of policies to find a balance between profitability and growth and retention. These often conflicting goals are achieved in this case study by considering the sub problems of customer retention classification and claim cost modeling.

Methodology

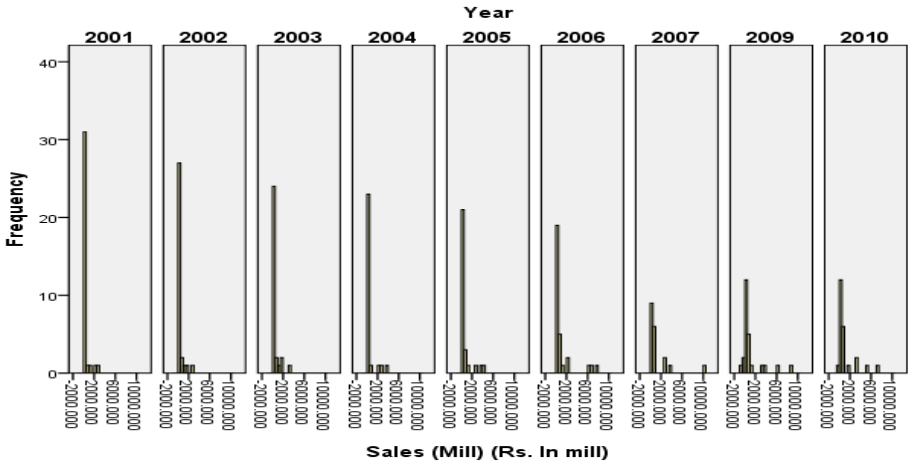
Two types of test are applied for observing the performance of Insurance sector over the years and other is apply for checking the consistency of the different variables in different years. In this study ANOVA is used for comparing the means of different variables from year 2001 to 2010. Applied the Least significance different test for checking the means of different years. We take profit after tax as depended variable and paid-up capital, no. of share, equity, profit before tax as independent variables. Another place we take dependent variable sales and paid-up capital, equity, no. of share, financial charges as a independent variable.

Empirical Results:

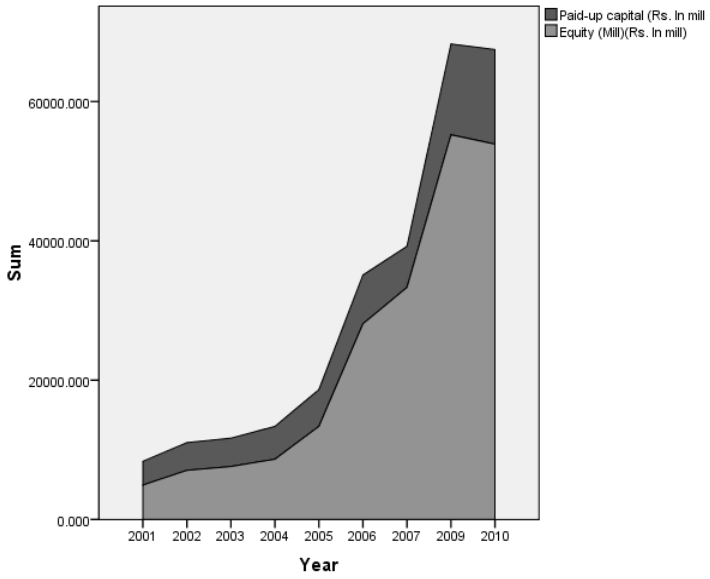
A histogram is one of the basic quality tools. It is used to graphically represent and summarize and show the distribution and variation of a process data set.



This graph shows that the insurance companies of Pakistan gain maximum profit before tax in year 2002 and year 2003 is on the second number. Unfortunately it started declining from 2005 to 2009 and in year 2009 it has the minimum mean value.

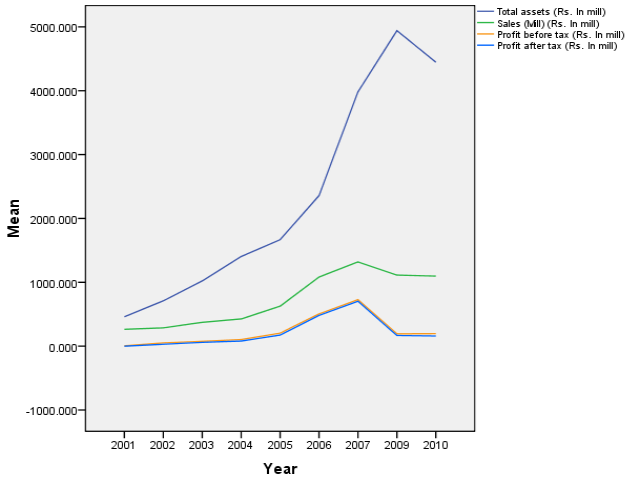


On the other hands, Sales graph is showing that, the companies Average Sales were maximum in year 2001 but after year 2001, it continuously start declining in every year till 2007 and then again sale increase gradually from 2009 to 2010. Sales graph is showing the minimum value in 2007.



This line chart shows that the Paid-up capital is slightly increasing from year 2001 to year 2008 but year 2009 and year 2010 was declining period. And the line of equity is following the line of paid-up capital.

In 2001 the mean value of Total assets was nearly 5 million and year 2002 to year 2009 was rising period, suddenly in 2010 it rapidly decreased. As it is from year 2001 to year 2007 the Profit before tax and Profit after tax was increased but 2009-2010 was decreasing period.



	Year	X bar	S.D	C.V
PAID-UP CAPITAL (Rs. In Mill)	**2001**	97.21	113.47	116.73
	2002	124.51	139.35	111.92
	2003	135.76	157.37	115.97
	2004	196.45	186.81	95.09
	2005	163.12	177.99	109.12
	2006	186.72	208.16	111.49
	2007	**307.93**	**250.9**	**81.48**
	2008	51.57	365.32	708.46
	2009	452.65	579.19	127.96
	2010	541.41	590.32	109.03
	Total	**2257.33**	**2768.88**	**1687.25**
NO. OF SHARE (Rs. In mill)	**2001**	10.71	12.75	119.08
	2002	13.79	15.25	110.6
	2003	15.21	17.38	114.29
	2004	21.99	20.51	93.24
	2005	18.11	20.12	111.1
	2006	20.82	23.73	113.98
	2007	**32.5**	**25.58**	**78.69**
	2008	5.16	18.01	349.35
	2009	4.48	57.15	1275.33
	2010	56.85	58.8	103.44
	Total	**199.62**	**269.28**	**2469.1**
EQUITY (Rs. In mill)	**2001**	141.11	175.59	124.44
	2002	220.32	303.09	137.57
	2003	253.49	377.61	148.96
	2004	360.43	376.09	104.35
	2005	361.39	614.67	170.09
	2006	739.14	1685.44	228.03
	2007	1148.79	2962.86	257.91
	2009	1904.13	3518.79	184.8
	2010	2177.2	3544.44	162.8
	Total	**7306**	**13558.58**	**1518.95**
TOTAL ASSETS (Rs. In Mill)	**2001**	460.04	798.6	173.59
	2002	710.35	1279.2	180.08
	2003	1021.92	1725.33	168.83
	2004	1579.88	2090.08	132.29
	2005	1261.83	2334.63	185.02
	2006	1861.71	3395.31	185.02
	2007	2608.75	5466.39	209.54
	2009	4259.41	6826.42	160.27
	2010	5559.12	8274.15	148.84
	Total	**19323.01**	**32190.11**	**1543.48**

As we know that Coefficient of Variation is used for checking the consistency; the table shows that **PAID-UP CAPITAL** was most consistent in 2007 because the C.V value is 18.48 which is minimum value as compare to other years. Same as **NO. OF SHARES** is also showing consistency in 2007 and **EQUITY** was consistent in 2004 as compared to other. **TOTAL ASSETS** also have similar results to **EQUITY**.

SALES (Rs. In mill)	**2001**	263.58	63.73	239.67
	2002	286.12	601.58	210.25
	2003	373.55	720.3	192.82
	2004	478.99	903.83	188.7
	2005	473.62	1129.35	238.45
	2006	854.89	2088.72	244.33
	2007	869.32	2364.32	273.56
	2009	959.34	2225.77	232.01
	2010	1012.34	1833.04	181.04

	Total	**5571.75**	**11930.64**	**2000.83**
PROFIT BEFORE TAX	**2001**	5.51	93.6	1697.5
	2002	50.88	98.75	194.08
	2003	75.38	116.14	154.08
	2004	117.27	141.27	121.04
	2005	153.41	293.6	191.38
	2006	399.01	1335.41	334.68
	2007	1136.55	2968.4	261.18
	2009	166.49	597.94	359.14
	2010	179.04	288.59	161.19
	Total	**2283.54**	**5933.7**	**3474.27**
PROFIT AFTER TAX	**2001**	-0.18	92.18	-52081.8
	2002	29.29	52.73	180.02
	2003	59.21	99.58	168.17
	2004	89.88	108.93	121.2
	2005	130.44	255.31	195.73
	2006	380.52	1329.4	349.37
	2007	1115.72	2975.19	266.66
	2009	143.37	568.16	396.3
	2010	144.75	258.25	178.41
	Total	**2093**	**5739.73**	**-50226**

SALES showing consistency in year 2010 and in 2010 the value of C.V is **181.04** which is minimum as compare to other. **PROFIT BEFORE TAX** was consistence in 2004. **PROFIT AFTER TAX** showing consistency in 2001.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Paid-up capital (Rs. In mill	Between Groups	6484528.190	9	720503.132	7.965	.000
	Within Groups	24152085.227	267	90457.248		
	Total	30636613.417	276			
No. of Share (Rs. In mill)	Between Groups	73147.266	9	8127.474	9.156	.000
	Within Groups	276059.421	311	887.651		
	Total	349206.687	320			
Equity (Mill)(Rs. In mill)	Between Groups	161000986.613	8	20125123.327	5.658	.000
	Within Groups	857157124.965	241	3556668.568		
	Total	1018158111.577	249			
Total assets (Rs. In mill)	Between Groups	612213264.216	8	76526658.027	4.929	.000
	Within Groups	3741780221.163	241	15526059.009		
	Total	4353993485.379	249			
Sales (Mill) (Rs. In mill)	Between Groups	37168130.701	8	4646016.338	2.158	.031
	Within Groups	518864388.523	241	2152964.268		
	Total	556032519.224	249			
Profit before tax (Rs. In mill)	Between Groups	33786152.015	8	4223269.002	3.701	.000
	Within Groups	288736585.525	253	1141251.326		
	Total	322522737.540	261			

Profit after tax (Rs. In mill)	Between Groups	33479554.586	8	4184944.323	3.691	.000
	Within Groups	286844889.336	253	1133774.266		
	Total	320324443.921	261			

Hypothesis

Sales

Ho: μ2001= μ2002= μ2003= μ2004= μ2005= μ2006= μ2007= μ2008= μ2009= μ2010

H1: At least one mean is significantly different

Profit after tax

Ho: μ2001= μ2002= μ2003= μ2004= μ2005= μ2006= μ2007= μ2008= μ2009= μ2010
H1: At least one mean is significantly different
Well the p-value of Paid up capital is less than 0.05, so for this we will accept the alternative hypothesis and reject the null hypothesis. Sales, Equity, No. of share, Total assets, Profit before tax and Profit after tax have p-value which is less than 0.05 from 2001 to 2010 same as for Paid up capital.
We applied the (LSD) test for checking that which year's mean is significantly different from each other.

LSD

(I) Year	(J) Year	Mean Difference (I-J)	Std. Error	Sig.
2007	2001	210.728887*	75.522899	.006
	2002	183.424547*	77.110339	.018
	2003	172.234839*	78.322775	.029
	2009	-196.946366*	81.230169	.016
	2010	-255.135868*	82.082309	.002
2009	2002	380.370913*	79.409785	.000
	2003	369.181205*	80.587633	.000
	2004	330.263020*	82.640144	.000
	2005	341.761268*	76.966976	.000
	2006	276.003151*	79.981877	.001
	2007	196.946366*	81.230169	.016
2010	2001	465.864754*	78.757747	.000
	2002	438.560415*	80.281249	.000
	2003	427.370707*	81.446495	.000
	2004	388.452521*	83.477891	.000
	2005	399.950770*	77.865785	.000
	2006	334.192653*	80.847175	.000
	2007	255.135868*	82.082309	.002

After applying LSD we observed that the mean value of from year 2001 to 2010 is significantly different.

Multiple regression analysis has applied; in ANOVA table the p-value tells us that the overall model is significant.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67603326.125	6	1.127E7	78.510	.000[a]
	Residual	34873673.381	243	143513.059		
	Total	102476999.507	249			
2	Regression	67482398.561	5	1.350E7	94.104	.000[b]
	Residual	34994600.946	244	143420.496		
	Total	102476999.507	249			

a. Predictors: (Constant), Sales (Mill) (Rs. In mill), Banks/Financial charges (Rs. In mill), No. of share (Rs. In mill), Total assets (Rs. In mill), Equity (Rs. In mill), Paid up capital (Rs. In mill).

b. Predictors: (Constant), Sales (Mill) (Rs. In mill), Banks/Financial charges (Rs. In mill), No. of Share (Rs. In mill), Total assets (Rs. In mill), Paid-up capital (Rs. In mill

c. Dependent Variable: Profit after tax (Rs. In mill).

Model		Non-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	11.597	30.400		.381	.703
	Paid-up capital (Rs. In mill	-.771	.347	-.408	-2.218	.027
	No. of Share (Rs. In mill)	5.573	3.295	.303	1.691	.092
	Total assets (Rs. In mill)	-.045	.012	-.295	-3.760	.000
	Banks/Financial charges (Rs. In mill)	17.219	1.756	.400	9.806	.000
	Sales (Mill) (Rs. In mill)	.384	.028	.894	13.500	.000
a. Dependent Variable: Profit after tax (Rs. In mill)						

Profit after tax is consider as depended variable and Paid up capital, Equity, Sales, Total Asset, No. of Share and (Bank) / Financial charges are explanatory variables and by the backward method we observed that Profit after tax is best described by Paid up capital, Sales, Total assets, No. of share and (Bank) / Financial charges.

Model can be written as:

PAT = β1 + β2 Paid up capital + β3 No. of share + β4 Total assets + β5 Bank/Financial charges + β6 Sales

PAT = 11.597 + -0.771 Paid up capital + 5.573 No. of share + -0.45 Total assets + 17.219 Financial charges + 0.384 Sales

Model		Non-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	65.460	59.261		1.105	.270
	Equity (Mill)(Rs. In mill)	.219	.071	.296	3.088	.002
	Total assets (Rs. In mill)	.218	.029	.609	7.563	.000
	Banks/Financial charges (Rs. In mill)	-12.090	5.117	-.121	-2.363	.019

We have depended variable Sales and Paid up capital, Equity, No. of share, Total assets and Bank / Financial charges are consider as independent variables again backward method is applied and it indicates that Equity , Total assets and Bank / Financial charges is best describe in the total sales.

Model can be written as:

Sales = β1 + β2 Equity + β3 Total assets + β4 (Bank) / Financial charges

Sales = 65.460 + 0.219 Equity + 0.218 Total assets + (-12.090) Bank / Financial charges

Conclusion:

This study provides an overview about financial changes in Insurance sector of Pakistan since 2001-2010. From results of this study we conclude that paid-up-capital and no. of shares both were consistent in 2007, equity and total assets both were consistent in 2004, sales showing consistency in year 2010, profit before tax was consistence in 2004 while profit after tax is showing consistency in 2001.

On the other hands by finding hypothesis of profit after tax, LSD tell us that all the variables are highly significant, thus we reject our null hypothesis(Ho: μ2001= μ2002= μ2003= μ2004= μ2005= μ2006= μ2007= μ2008= μ2009= μ2010) and accept alternative hypothesis (H1: At least one mean is significantly different).

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