Effect of Corporate Income Tax and Firms' Size on Investment: Evidence by Karachi Stock Exchange

Raza, Syed Ali and Ali, Syed Adeel and Abassi, Zia

Iqra University Abid Town, Block-2 Gulshan-e-Iqbal, Karachi, Pakistan Tel: +92214800670-4 Fax: +92214987806

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Syed Ali Raza
Research Associates, Iqra University
Abid Town, Block-2 Gulshan-e-Iqbal, Karachi, Pakistan
Tel: +92214800670-4 Fax: +92214987806
Email: syed_aliraza@hotmail.com

Syed Adeel Ali
Business Graduate, Iqra University
Abid Town, Block-2 Gulshan-e-Iqbal, Karachi, Pakistan
Tel: +92214800670-4 Fax: +92214987806

Zia Abassi
Assistant Professor, Iqra University
Abid Town, Block-2 Gulshan-e-Iqbal, Karachi, Pakistan
Tel: +92214800670-4 Fax: +92214987806

ABSTRACT

This study investigates to explore the effect of Corporate Income Tax and Firms' Size on Capital Investment made in tangible assets by the Manufacturing firms belongs to nine non-financial sectors listed in Karachi Stock Exchange. To examine the study Panel financial Data on annual basis has been gathered for the period of six years from 65 sample manufacturing companies. To determine the effect of two predictors as Corporate income tax and Firms' Size on Fixed investment the results are generated by using multiple regression analysis as a statistical technique with the help of multiple Statistical tools for high accuracy of outcomes. The results conclude that there is a negative relationship exists between corporate income tax and investment while firm size and investment reveals a positive relationship with each other. Therefore, it has been cleared in the light of above results that excess tax obligations in a firm specific sector will discourage corporate investor for investment in it. On the other hand enhancement in firm size as total sales revenue will increase the level of investment in a KSE listed firm and vice versa for developed hypothesis.

Key Words: Corporate income tax, Firms' size, Capital investment, Statistical analysis system.

INTRODUCTION

Corporate Income Tax study should be of much importance because it highlights the current status of the company earnings on the basis of which tax liability owe by the company. Looking at the Corporate Income Tax rates charge around different business communities of the world an upward trend is clearly visible in all developed and in few under developed countries. In this study we examined the Impact of Corporate Income Tax on business investments and Net returns.

Corporation tax is charged on the profits generated by companies, public corporations and unincorporated associations such as industrial and provident societies, clubs and trade associations. After every accounting period tax is charged on profits. Corporation Tax is charged upon the companies since 1965. Before that they were liable to income tax on their total income and also to profits tax. The system introduced in 1965 charged a uniform rate on all profits and an additional charge to income tax was made when profits were distributed[1]. Taxes are considered as an essential item in the company's financial statements, it is a significant aspect of every company's performance. Currently taxation is developed in the manner it is a challenge for the companies and for their boards and Audit committees. The participation of boards and audit committees varies by country and organization, in that way their high-level tax strategies create some more misunderstandings regarding this important aspect. They realize the company steadiness for tax minimization against tax assurance. Companies want to have an assurance that the tax authorities will not challenge their tax position as it involves reputational risk and penalty too.

Managing complex tax operations for global, multinational corporations requires an

Undaunted focus on current federal laws and international tax laws, implement the creative ways to implement the laws for reducing global taxation, determining the related tax risks and finally protect company's tax positions. The focus shifted from solely designing and implementing tax structures to minimizing global income taxes while accurately accounting for them and the internal controls surrounding this process, this shift has not come easy for today's tax executives as Most tax executives see the problem as a "tax" problem that can only be solved by experienced, highly skilled tax professionals and Tax Lawyers. However, when you examine

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[1] http://www.hmrc.gov.uk/stats/corporate_tax/introduction.pdf

the causal factors a little further, you find that it is not so much a tax problem as it is a "data" problem. To produce accurate, timely and comprehensible global income tax provisions and required disclosures, every company takes its global financial data, processes it according to all of its jurisdiction's tax rules and reports the outcomes in accordance with its financial reporting standards. So, there are three potential areas where the problem could arise, data, tax rules and reporting rules & could overcome these problems through above process[2].

Firm Size is very vital in several Economic Scenarios. Krishna B. et al. (1999) analyzed that at the industry level they find that the firms in the utility sector are large, may be because they enjoy Natural, or Officially Sanctioned, monopoly. Physical Capital Intensive industries, High wage industries, and industries that keep a lot focus on Research and development have Larger Firms, as do industries that require small volume of external financing. Further, Ghosal and Prakash loungani (1996) has been found that industries dominated with small firms, besides having uncertainty of profits has virtually no effect or positive effect over investment. Rajan and Zingales (1998a) explored that Two-Third of the growth in industries over the 1980's occurred by the growth in the size of existing establishments and only One-Third by the construction of new ones', they further propose that financial development does leads to facilitate growth. Since a significant Portion of growth appears from the growth in average size of organizations; an important source by which financial development supports is by making possible the financing of large firms.

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[2]http://www.informationmanagement.com/infodirect/2009_175/tax_regulations_compliancedata_quality_management-10018594-1.html

Capital Investment is made in tangible Assets or Sundry Assets required which generates Business Revenues and Helps to grow Firm Size in terms of sales or other business Areas. The term "Investment", is required to be differentiated between over-investment and under-investment. Further, According to Myers (1977), if firm take leverage it will reduce shareholders and management incentives who jointly engaged and make efforts for investments in Various Projects of investment opportunities having positive net present value, stated that the more advantage is associated with the Bond holders but not the share holders. Therefore, highly levered firm have less chances to utilized precious growth opportunities in contrast to that of low leverage firms. Where as, theory of under investment has an effect on liquidation of Non-Financial Firms. Who reveals Commitment to Debt to larger extends and never care of available investments which helps in increasing Firm Size.

EMPIRICAL STUDIES

Hines (1993) examined the effect of taxes on business location and foreign direct investment by comparing the inter-state distribution of investments with foreign investment in United State of America. Regression Analysis has been used in this study, the results indicated that high tax rate within the state hurts the local investment; local investor's ratio of shares relative to foreign investors is about 7 to 9 % for every 1 % rate of taxation.

Rohra et.al, (2009) investigate the relationship between tax system variables and certain other variables of location decision making. These relations are tested using the data from financial service providers functioning especially in sindh (Pakistan). A quantitative technique Regression Analysis was used to test the inter relationship between the variables of LD (Location Decisions) and TBLF (Taxation Burden as Location Factor) after using the Factor analysis of

Location Decisions. The results show that taxation burden (cost of compliance, certainty of interpretation of tax laws, and exemptions/deductions) are positively concerned with the financial services business location decisions, or in other words institutions are not looking mostly tax factor but they are only trying to avail the Business opportunities.

De Mooij A.et.al, (Nov., 2001), indicated the impact of company taxes on the allocation of foreign direct investment. Outcomes of 25 empirical studies comparable by computing the tax rate elasticity under a uniform definition. The paper aims to explain this variation by the differences in characteristics of the underlying studies. Systematic differences between studies are found with respect to the type of foreign capital data used, and the type of tax rates adopted. For this purpose sample of 351 cases are used aggregated basis, ANOVA is used as a statistical technique. They found no systematic differences in the responsiveness of investors from tax credit countries and tax exemption countries.

Ahmed, (2004), introduced a model of Corporate Income Taxes which shows that agent firms exploit complete information embodied in provisions of tax statutes and the tax policy. The study has been related to the impact of Corporate Income Tax liabilities on different variables of a firm as gross profit, cost of sales, expenses etc. A sample of 7,306 companies has been taken from the hotels and restaurants sector, includes 6,594 in business services and 1,484 in transport manufacturing sectors, for the accounting periods 1995 to 2000. He found implications for micro simulation modeling, financial transparency, and corporate governance.

Mr. Nnadi, Meg (2008) explores the impact of taxes on the dividend policy of Nigerian banks. It underscores the theoretical assumptions of the M&M theory. The study identified pattern of past dividends, concern about maintaining a target capital structure, current degree of financial leverage, shareholder needs for dividend income, legal rules and constraints;

descriptive statistics method has been used in this research, they found a significant correlation between taxes and dividend structure of the banks and also suggest that profit is a major variable in the formation of dividend policy of the organizations.

Arnold Jens, Cyrille Schwellnus, (2008) examined the effects of Corporate Income Taxes on two of the main drivers of growth, productivity and investment of firms in European OECD member countries over the time period of 1996-2004, through stratified sampling this is found to be true across firms of different size and age classes, except for young and small firms. The results suggest that Corporate Income Taxes reduce investment through an increase in the user cost of capital. This may partly explain the negative productivity effects of Corporate Income Taxes if new capital goods embody technological change.

Becker et al (2010) analyze the investment distribution for both firms which are profitable and unprofitable, in which the allocation is done on the basis of payout taxes for 25 countries in the world. Investment, Tax, EBITDA, Cash flows and Tobin Q are the main variables. They describe the events in which payout taxes has changed by three percentage points and compare the five years past tax change effect with two years following it. Research findings concluded that payout tax adjustment has an economically considerable effect on allocation of the investment.

Salinger and Lawrence (1981) explore the effect of Corporate Income Taxes on individual firm's investment and stock market valuation. The variable for this research were result Market Value of equity, Market Value of Debt, Inventory and capital stock. Data were collected from 30 Dow Jones companies, Q theory of investment approach is used in this paper to analyze effects of tax reforms and the changes in cost of capital of the firm. Research findings in this research are a tax reforms powerful effect which differs in different firms.

Fazzari et al(1987) investigate market imperfections for debt and equity as some companies do not have the access to the external capital markets and unable to react according to the changes in asset price cost of capital or tax, the researcher examine the financing hierarchy in which the internal finance has vital cost benefits over the external finance. By using panel data of manufacturing companies they found that q values were remain very high for large time period the dividend was not paid by the firms, relative to those which are grown-up firms. They conclude investment is much more reactive to the cash flow for those group of firms which their model face more external finance limitations.

Tianyi Jiang (2003) measured the effect of firm size on fixed investment in the area of Information Technology (IT) evidenced from U.S.A Based Firms Listed in New York Stock Exchange. Secondary focuses of the study are first, the Measurement of firm size in terms of employees Ability to Adopt Technology. Secondly, Measure the firm Size in terms of Emlpoyees Pace of learning new technology have also observed in this Paper. Seventeen North American Industry Classification System (NAICS) Based Industries have taken as Sample including Agriculture, Constructions, Manufacturing, Transportation and Wear housing, Real Estate and Rental Leasing, Finance and Insurance etc. Least Square Regression has been used to test the relationship among variables. The Result indicates that Firm Size Has a Significant Positive correlation with Investment in Several Sectors.

Kadapakkam Rajan Palani *et.a*l, (1998) examined the extent to which cash flow availability and Firm Size influence Capital internal Investment in 6 OECD (Organization for economic Cooperation and development) Countries. In particular, this paper aims to analyze primarily the effect of Firm Size on reliance internal funds (Capital Investment). Since there is general agreement that small firms have limited excess to external Capital markets. Therefore,

they should be more emphasized on internal investment. All the firms have been examined, regardless of size in Each Country. Multiple regression analysis has been used to test the relationship of Subject variables. The result findings show that Firm Size and Cash flow has positive effects and highly sensitive relation with internal investments in all the countries. Further more, it has also found that Cash Flow-investment have large sensitivity usually in Largest firm size group and small in the smallest firm size group.

Since the purpose of this research is to is to find out the effect of Corporate Income Tax, and firm size on investment and also to find out to what extend Corporate Income Tax, and firm size effect the investment and make full utilization of it with the view of creating value of firms of nine different sectors in Pakistan. So, there are limited literature on relationship of corporate income tax, firm size and investment selected for examining their effect on industries of non financial firms. This study is supported by few researchers, which suggest that identification of successful source of funding for investment is necessary. Furthermore firm size can increase the size of investment but increase in corporate income tax ratio in an industry's specific sector usually but not infrequently reveals decline in investment which might affect the investment in various Listed Manufacturing and service industries.

METHODOLOGY

To find the effect of corporate tax and firm size on investment we use secondary type of data. All the secondary data gathered from official website of State Bank of Pakistan and annual reports of companies available on their web portal. The sample size is consist of firms of Pharma and Bio Tech, Tobacco, Oil & Gas, Fixed Line Telecommunication, FMCG, Cement, Chemicals, textile, and Industrial Metal Mining sectors listed in KSE in this analysis for the period 2004-2009.

Multiple regression analysis has been used that will determine the regression parameters of Capital investment with two Predictors Corporate income tax and Firm Size with 95% significance level.

$$INV = \alpha + \beta_1(CIT) + \beta_2(FS) + \varepsilon$$

Whereas;

$\alpha =$ (alpha) shows the constant effecting Capital Investment on Tangible assets, INV=Investment= Natural log of firm's investments in fixed tangible assets, CIT=Corporate Income Tax= Natural log of Tax charged on firm's operating Income, FS=Firm Size = Natural log of firm's total sales revenue, ε = Error Term

ESTIMATION AND RESULTS

The central tendency of data as mean, median and measures of statistical dispersion as Standard deviation has listed as follows:

Table 4.1 Summary Statistics

Sr.	Variables	N	Minimum	Maximum	Mean	Std Dev
1	Investment	314	-5.2591	10.1295	5.3998	2.2084
2	Corporate Income Tax	314	-1.3910	704.4780	7.2835	39.5267
3	Firms' Size	314	4.4840	13.3256	8.7408	1.5541

A Total of 315 observations have been utilized in the Data analysis. Systematic Examination of the above table shows that Investment has a Minimum Ratio of (5.2591) and Maximum ratio of 10.1295, its Mean is 5.3998, and Standard Deviation is 2.2084. Similarly, the

Minimum ratio of Corporate Income Tax is (1.3910) and Maximum Ratio is 704.4780, the mean value is 7.2835, and Standard Deviation is 39.5267. Furthermore, Firms' Size obtained a Minimum ratio of 4.484 and Maximum ratio of 13.3256, its Mean value is 8.7408, with a Standard Deviation of 1.5541.

The table 4.2 highlights correlation existence among each of the Independent variable which are Corporate Income tax and Firms' Size with the assessor i.e. Capital Investment. The table consists of three Variables. The Results concluded that Investment revealing Negative Correlation with Corporate Income Tax as 12.5% and Positive Correlation exist between Investment and Firms' Size i.e. 55.6%. Corporate income tax is Positively Correlated with firms' Size as 6.7%. Therefore as P-value suggests, significant relationship exists between Firm size and investment but insignificant relationship exist between Corporate income tax and Investment.

Table 4.2 Pearson Correlation Coefficients

	Investment	Corporate Income Tax	Firms' Size
Investment Correlation P value	1.0000*	-0.125* (0.0140)	0.556* (<.0001)
Corporate Income Tax Correlation P value	-0.125* (0.0140)	1.0000*	0.067 (0.119)
Firms' Size Correlation P value	0.556* (<.0001)	0.067 (0.119)	1.0000*

  *Significance level at 5%

The following table 4.3 created by SAS, Explained that Positive autocorrelation exists up to 5 lags as P-value is less than 5% significance level but it can be observed that at 6 lag there is no existence of Positive autocorrelation in the model.

Table 4.3 Durbin-Watson (Autocorrelation Test)

	ORDER					
	1	**2**	**3**	**4**	**5**	**6**
DW	0.7932*	1.2726*	1.5719*	1.7027*	1.7903*	1.8507*
Pr<DW	(<.0001)	(<.0001)	(<.0001)	(0.0060)	(0.0480)	(0.1432)
Pr>DW	(1.0000)	(1.0000)	(0.9999)	(0.9940)	(0.9520)	(0.8568)

* Significance level at 5%

Further, Consistent value Accuracy Correction of Positive autocorrelation in the model

has been done through "Cochrane- Orcutt" Method is used on SAS (Statistical Analysis System)

and the corrected results up to 48 Lags are shown in the following Table 4.4 which reveals that

value of P>0.05indicating removal of serial autocorrelation error from the model. Therefore, null

hypothesis has been accepted as there is no Positive Autocorrelation exists in the Residuals.

Table 4.4 Cochrane-Orcutt Method (Corrected Auto correlation)

Modal-A	Up to Lags							
	6	**12**	**18**	**24**	**30**	**36**	**42**	**48**
χ^2 p-value df	0.85 (0.9736) 5	11.57 (0.3968) 11	15.56 (0.5555) 17	18.41 (0.7347) 23	25.41 (0.6566) 29	40.61 (0.2369) 35	46.69 (0.2500) 41	63.61 (0.0535) 47

* Significance level at 5%

Table 4.5 Pooled Cross-Sectional and Time Series OLS Estimations

	Ordinary Least Squares (OLS)	Cochrane-Orcutt Method (MLE)
Investment 95% C.I T-value p-value	-1.5708* [-2.7191; -0.4225] -2.69 (.0075)	-0.44088* [-2.1034; 1.2216] -0.52 (0.6032)
Corporate Income Tax 95% C.I T-value p-value	-0.0091* [-0.0142; -0.0040] -3.51 (0.0005)	-0.0034116* [-0.0068; -6.1960E-05] -2.00 (0.0459)
Firms' Size 95% C.I T-value p-value	0.8050* [0.6755; 0.9346] 12.23 (<.0001)	0.67038* [0.4865; 0.8543] 7.14 (<.0001)
R^2	0.335	
Adjusted R^2	0.331	
F- value p- value	78.365* (0.000)	

* Significance level at 5%

INV = -0.44088 - 0.0034116 (CIT) + 0.67038 (FS)

The above regression model showing the value of constant is (0.44088), indicating that when Corporate Income Tax and Firm Size values become zero the value of Investment will be Remain (44.09%).The constant value does not lies between its upper and lower confidence intervals revealing its insignificance. Here, T-value (52%) associated with constant is insignificant which is witnessed by its P-value is greater than 5% significance level.

The value of R^2 is 33.5% describing variance proportion in dependent variable which is Investment can be explained by predictors which are Corporate Income Tax and Firms' Size for the model. Corporate Income Tax and Firm Size are predicting Investment by 33.5% which reflects the overall strength of association in the Regression model. Adjusted R^2 suggests an additional predictor for the model. Here its value occurs 33.1% and F-value is 78.365 which is evident by its significance level as P<0.05 which reveals that there is no immediate need of an

additional independent variable as Corporate income tax and Firms' size are good enough for explaining the variation in Investment.

The negative relationship exists between Investment and Corporate Income Tax in this Research study is similar to Salinger and Lawrence (1981) and Becker et al. (2010) who found the impact country wise. This negative relationship arises between Corporate income tax and Investment is the cause of both extremes first an inefficient decision making for investment by making it in a sector which have not much scope for revenue growth and to some extent a tax burden sector or to heavily invest in an industry which generates large scale revenues but ignoring the fact that it may be a large tax burden sector as well which will be a threat for financial stability of a firm. The Positive Relationship exists between Firms' Size and capital Investment is found to be related with the studies conducted by Kadapakkam Rajan Palani *et.a*l, (1998) and Tianyi Jiang (2003).

CONCLUSION AND RECOMMENDATIONS

The current paper explores a new relationship based on effect of Corporate income tax and Firms' size on Capital investment made in tangible assets of 65 non-financial firms which are publically listed companies in Karachi stock exchange specifically related to manufacturing sector for the time frame 2004-2009. The final outcomes summarized that there is a significant negative relation exist between corporate income tax and investment, on the other hand firms' size and investment shows a significant positive relationship with each other in Pakistan for the sample listed companies in Karachi stock exchange.

It is also concludes that imposing excess corporate income tax burden/obligations on a firm specific sector will lead to low volume of investments in those listed firms as the dividend

payout ratio will also effect from it which leads to diversification of investment in other industries where as firm size as sales revenue in manufacturing sector will attract the corporate investors to make a greater volume of investment in the relevant companies for technological enhancement to maintain the decent quality of products of the listed companies. Some of the important notes found while conducting this study is as follows:

It is recommended that the KSE listed firms should do efficient investments by rendering services of superior tax consultants also by keeping in view full fledge practices of corporate income tax for avoiding maximum tax obligations. The investments should be utilize in a smart manner by higher management of the firms so that it will result in quality products at low cost which results in enhancing total sales revenue which will requires excess investment for expansion of profitable firm activities.

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