

Determinants of Firm Growth: Empirical Evidence from Pakistan

Ahmed Imran Hunjra¹, Azhar Iftikhar², Asad Mehmood³ and Kaleem Ullah⁴

¹Post-Doctoral Fellow, School of Accounting, Finance and Economics, The University of Waikato, Hamilton, New Zealand and Assistant Professor, UIMS-PMAS- University of Arid Agriculture Rawalpindi, Pakistan.

²MS Scholar, UIMS-PMAS-University of Arid Agriculture Rawalpindi, Pakistan.

³Visiting Lecturer, UIMS-PMAS-University of Arid Agriculture Rawalpindi, Pakistan.

⁴PhD Scholar, Islamia College Peshawar and Lecturer, UIMS-PMAS-University of Arid Agriculture Rawalpindi, Pakistan.

ARTICLE INFO

Article history:

Received: 30 July 2016;

Received in revised form:

13 March 2018;

Accepted: 24 March 2018;

Keywords

Firm Growth,
Leverage,
Age,
Size,
Profitability,
Liquidity,
Innovation.

ABSTRACT

The purpose of this study is to investigate the impact of financial determinants on firm growth. The impact of financial determinants: profitability, leverage, innovation and leverage on firm growth are studied. Firm size and firm age are also included to investigate how such variables effect firm growth. Data was collected for a sample of 373 non-financial companies listed at Karachi Stock Exchange for a period of six years from 2006 to 2011. Fixed effect model for panel data was applied for analysis and results. The results of this research show that financial determinants of profitability, leverage and innovation have a positive and significant impact on firm growth in Pakistani context. Firm size also have a significant positive effect. However, there is negative relationship of firm age on firm growth. Liquidity has a positive relationship with growth, yet its impact was non-significant. More comprehensive, detailed and extended analysis in future studies will definitely be helpful in gaining a profound understanding of different aspects of the growth of the firms, and hence in formulating better policies for economic development at micro and macro level.

© 2018 Elixir all rights reserved.

Introduction

Growth of firms is vital in overall economic well being. So ample resources need to be planned and allocated by governments, economists and international organizations for the growth and development of businesses. To ensure that usefulness of such efforts, effective programs for improvement of firm growth need to be implemented. Hence, the process and the variables that lead to firm growth need to be clearly understood. According to Wiklund (1998) [1], the term 'Growth' signifies the changes that happen in the magnitude and size from one period to another. In the words, growth has two distinct meanings. Firstly, it means the changes relevant to the amount while a firm progresses in size from small to large. Secondly, growth is a comprehensive process of organizational change that includes a range of changes other than size of the firm [2]. Davidsson, Delmar & Wiklund (2006) [3] viewed that firm growth is a multi-dimensional and complex concept that can be hard to predict. It is its diversity of scope that makes it a demanding subject for research. Firm growth can be measured in a variety of ways with diversity in the unit of such growth measurement. Thus, the researchers, managers and policymakers must be aware of this versatility of the phenomenon of firm growth. The growth of firms is vital in overall economic well-being, ample resources are needed to be planned and allocated by governments, economists and international organizations for the growth and development of businesses.

Various theories of firm growth have been presented by researchers in the course of history. One of the earliest theories presented in this respect is the Law of Proportional Effect given by Gibrat (1931) [4] that takes the firm growth as

a random process and no clear relation can be established between firm growth and its size variation, i.e., size at the start and at the end. The law presented by Gibrat [4] has been tested by many researchers with varying results. Some of the studies completely support Gibrat's Law, like Hart (1962) [5], Hart and Prais (1956) [6] and some results demonstrate partial confirmation of the Gibrat's Law [4]. Hymer and Pashigan (1962) [7] conclude irrelevance between firm growth and firm size. The studies undertaken by Kumar (1985) [8] and Evans (1987) [9] points out that there is a negative correlation between firm growth and firm size while the work of Hart (2000) [10] and Glancey (1998) [11] shows that rate of growth for younger firms is comparatively faster than large and mature firms.

The next milestone in respect of research on firm's growth is the work of Penrose (1959) [12] who presented the resource based view of firm growth. Penrose deviated from the traditional 'firm size' perspective and emphasized considering the firm as a collection of resources and how such resources are utilized for growth. Penrose analyzed the process of how quickly firms accumulate such resources and what opportunities of firm growth could be possible in case of under-utilization of firm's resources. Further studies conducted by behavioral economists like [13] [14] [15] show that the differences in firm size leading to firm growth are due to the difference between ownership structure and objectives of control. When the ownership and control of the firm are separate, then the managers who are the controllers of the firm try to maximize their own interests rather than the value of the firm. Thus behavioral views of firm growth analyze firm performance and growth based on diversity in firm behaviors.

Recent developments in research on firm growth have resulted in the development of models of learning and selection. According to Geroski (1995) [16], survival and growth of the firm depends upon how it learns and adapts itself to the changing environment. Jovanovic (1982) [17] presented a model of evolution of industry based on random distribution of firm's cost curves to firm related shocks. He points out that with the passage of time, firms learn how such shocks affect their performance. Those firms that pass through favorable shocks have greater potential of growth and survival, while others may not adjust to firm specific shocks and their performance may decline that may lead to even closing of business. It is further concluded that small firms have greater but more volatile growth rates and compared to those with larger size. Stage theories of firm growth have also been presented explaining changes in the optimum size of the firm over time. Greiner (1972) [18] presented five phase view of firm evolution. These five phases are: creativity, direction, delegation, co-ordination and collaboration. Study conducted by Mueller (1972) [19] shows that a profit maximizing firm may experience only a finite push of growth by bringing in each new innovation. Although stage theories of firm growth are useful in understanding of growth concept, yet these theories fail to explain why firms show variable results while passing through same phase of growth.

As the concept of firm growth is a complex and versatile phenomenon, various growth models and theories have been presented over time. Still no single theory can comprehensively explain the evolution of firm and the growth phenomenon. Hence, according to Coad (2009) [20], the empirical approach seems appropriate to analyze the firm growth based on facts and figures. This study focuses the empirical evidence of the determinants of firm growth based on the analysis of Pakistani firms.

Review of Literature

Various theories of firm growth have been presented by researchers in the course of history. One of the earliest theories presented in this respect is the Law of Proportional Effect given by Gibrat (1931) [4] that takes the firm growth as a random process and no clear relation can be established between firm growth and its size variation. The focus of most of empirical studies on firm growth is on the size and age effects. Hall (1987) [21] presented evidence on firm employment growth from publicly traded firms in the US manufacturing sector. The results showed that small firms tend to grow faster than the large ones. Wagner (1992) [22] tested Gibrat's law with a data set of manufacturing establishments from Germany for 1978-1989. Wagner did not find any size effect of growth, and hence Gibrat's law seemed to hold. Harhoff et al. (1998) [23] did, however, find evidence that small firms grow faster than large ones. Almus and Nerlinger (2000) [24] studied new firms established in German manufacturing sector. Small firms were found to grow faster than large ones. Dunne and Hughes (1994) [25] looked at both the quoted and unquoted UK companies in the period 1975-1985. The study suggested that size matters for growth for small firms. Hart and Oulton (1996) [26] provided further evidence on firm growth from the UK. In their results, small firms outperformed bigger firms and hence Gibrat's law was violated. Kumar (1985) [8] investigated the size effect and persistence of growth on UK data. A notable difference with earlier studies was that this data set also contained a limited range of service industries such as wholesale, retail, and

transport. The findings indicated that small firms had a higher average growth than large firms.

The ultimate goal of any economic activity is to earn profit. We can measure this profit by a number of ways, most common of which being Return on Equity (ROE) that we can calculate by dividing net income by shareholders' equity. The measures of Return on Equity and profitability are a popular indicator of the growth potential of an enterprise. A firm with a high Return on Equity holds the scope for investment and such increased investment definitely results in enhanced growth. Penrose (1959) [12] added managerial impact concept to the traditional relationship that was believed to exist between profitability and growth. The devotion to grow is determined by the interest and the capacity of maximization of profitability. Glancey (1998) [11] formulated his study based on the arguments supported by Penrose and found a positive relationship between profitability and growth. Coad and Holzl (2010) [27] found that profitability and growth did not show a clear relationship and empirical research could not show consensus between these two aspects. Goddard, Molyneux and Wilson (2004) [28] argued that profitability and growth did not have a clear linkage between each other. They concluded that there was an ambiguous relationship between profitability and growth. Jang and Park (2011) [29] showed a positive relationship between previous rates of profit on the current rate of growth. Serap ÇOBAN (2014) [30] found a statistically significant positive relation between current profits and current growth. He also found that the impact of current profits on current growth was much stronger than the impact of current growth on current profits in the case of Turkish manufacturing firms. These results appeared to contradict the theories in Industrial Organization which suggested a negative relationship.

According to Pecking Order theory, firms use the principle of least effort in prioritizing their sources of financing. We can say that packing order theory has the sequence of use of internally generated capital, followed by external debt, and issuance of equity as a final resort. Packing order theory was suggested by Donaldson (1961) [31] and then it was improved by Myers and Majluf (1984) [32]. The relevance of packing order phenomenon to our study is that the most inexpensive way of raising additional capital is the internal sources of financing of a firm. Huyghebaert and Van de Gucht (2007) [33] highlighted that young companies often faced comparatively limited access to external financing and if successful in attracting external debt, such companies had to pay higher price. Thus, young companies faced greater risk of failure. Therefore, the growth possibility for young companies is generally limited as compared to mature companies. Another angle of explanation of the financing sequence expressed by packing order theory is that the managers want to keep full control of the company to themselves. Therefore, they demonstrate hesitation in raising funds from sources outside the company. Additionally, acquisition of funds through debt financing is comparatively harder for new firms as banks and other financial institutions do not possess the financial track record and comprehensive credit score about such start-up firms. Positive effect of leverage on growth of the firm has been found in various studies like Heshmati (2001) [34], Honjo and Harada (2006) [35]. According to Rahaman (2011) [36], as the firms get more grip on overcoming the constraints in external financing, they emphasize more on external financing sources as compared to internal financing option. He found a positive and a significant

relation between leverage and firm growth. Huyn and Petrunia (2010) [37] also studied the effect of leverage and initial financial size as firm growth determinants and found a positive non-linear relationship between leverage and firm growth.

Among the determinants of firm growth, innovation has been one of the most important drivers. By adapting better operating methods and investment in innovative products, companies can achieve a competitive edge. While reviewing empirical literature, it is found that different methods for the measurement of innovation have been presented by researchers. Coad and Rao (2006) [38] measured innovation based on the number of patents and the volume of R&D expenditure. Cainelli, Evangelista & Savona (2006) [39] studied the Italian companies working in services sector for the impact of innovation on economic performance. They investigated, among other questions, the impact of innovation on the performance of companies with reference to growth and productivity. Their findings express a positive impact of innovation on productivity as well as growth. Thus it is concluded that innovating companies showed better results related to growth as compared to non-innovating companies. Haned & Colombelli (2011) [40] also investigated the correlation between innovation and firm growth by using data of French firms and found that firms with more innovative products indicate more growth as compared to firms that do not have significant developments in product innovation. Other researchers that came up with similar findings are Roper (1997) [41], Geroski and Machin (1992) [42] and Corsino (2008) [43]. Bottazzi et al. (2001) [44] conducted the study on large pharmaceutical firms based on the data comprising a period of eleven years and no significant relationship was found between innovation and firm growth. Geroski & Mazzucato (2002) [45] also expressed irrelevance between innovation and growth as an outcome of their study of car manufacturing companies of United States by analyzing data from 1910 to 1998. Aldemir (2011) [46] examined the relationship between intangible assets and firm growth based on a sample of Spanish renewable energy producers. A positive and significant impact of intangible assets was found on firm growth for small companies, while no significant relationship could be established for large companies. Geroski (1999) [47] came up with the findings that growth rates of large and/or old firms are mostly unpredictable and irregular. Alex Coad, Agustí Segarra and Mercedes Teruel (2016) [48] found that young firms face larger performance benefits from R&D at the upper quantiles of the growth rate distribution, but face larger decline at the lower quantiles. R&D investment by young firms therefore appeared to be significantly riskier than R&D investment by more mature firms.

Firm growth undertakes the idea that companies grow at a faster pace if they demonstrate a persistent level of current assets to pay off their short term liabilities. Mateev & Anastasov (2010) [49] used current ratio as a measure of the level of short-term liquidity. They argued that an increase in the current ratio (calculated by dividing the current assets by the current liabilities) lead to strengthening of liquidity position of firm. The companies with lesser level of liquidity faced more cash restraints and thus, had to face greater difficulties in making payments to suppliers. Thus, a healthy cash cycle needed good relationship with suppliers and adequate working capital [50]. A company that was not in a position to hold a certain level of liquidity may have to struggle to keep its existence at a prominent level. Gill &

Mathur (2011) [51] showed that the firms which were able to maintain higher levels of liquidity had to face less severe financing limitations. Surplus cash available would shrink financing constraints, thus enabling the company to finance the growth opportunities at comparatively lesser cost. Firms having the capability to invest at a reduced cost were more inclined for investment and thus aiming for higher growth.

This study proposes a conceptual framework of the relationship between firm growth and its financial determinants: Profitability, Leverage, Innovation, Liquidity, and also firm size and firm age. On the basis of this theoretical framework "Fig. 1", research model has been developed and data collection carried out accordingly

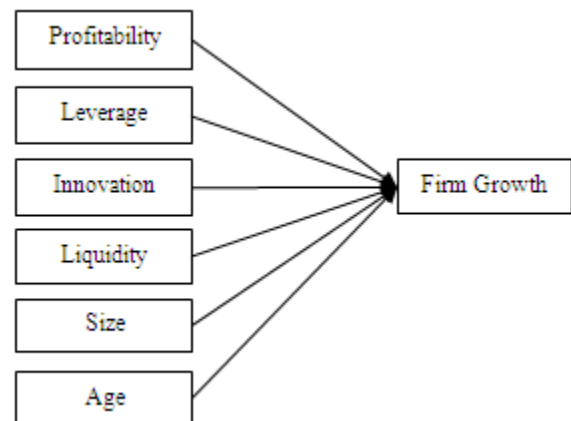


Figure 1. Theoretical framework

Based on the empirical literature about determinants of firm growth, this study investigated the following hypotheses:

- H1: Profitability has a positive impact on firm growth.
- H2: Leverage has a positive impact on firm growth.
- H3: Innovation has a positive impact on firm growth.
- H4: Liquidity has a positive impact on firm growth.
- H5: Firm size has a negative impact on firm growth.
- H6: Firm age has a negative impact on firm growth.

Materials and Methods

Panel data was used by Gill and Mathur (2011) [51] for the period 2008-2010 to estimate the factors affecting potential growth of Canadian service and manufacturing firms, by applying non-experimental and co-relational research design. Mateev and Anastasov (2010) [49] also undertook OLS regression with a panel data methodology for the empirical research on determinants that are concerned with fast growing SMEs in the regions of Central and Eastern Europe. They argued that the examination based on panel data was suitable for controlling heterogeneity and also reducing collinearity that may be present among variables, and this technique was helpful in eliminating the potential biases present in the resulting estimation stemming from correlation between masked individual effects and explanatory variables under study in the model. Based on the same methodology mentioned above, this study applied analytical models on the panel data of firms in non financial sectors that are listed at KSE (Karachi Stock Exchange) to find the impact of various financial determinants on firm growth, and also to know the linkages of firm age and its size on firm growth in Pakistani context. For this study, our main emphasis was on financial ratios and how such ratios had an influence on growth of companies in Pakistani context. For finding these ratios, data was collected from financial statements in annual reports of the companies listed at KSE (Karachi Stock Exchange) and from State Bank of Pakistan (SBP) publication 'Financial Statements Analysis of Companies (Non-Financial) Listed at

Karachi Stock Exchange (2006-2011)'. Data about firm age was gathered from Securities and Exchange Commission of Pakistan (SECP). Insurance companies, banks and financial institutions are not included in our sample as such institutions are subject to some specific legal requirements.

Firm Growth is the dependent variable in this study. Due to multidimensional nature of firm growth, many different indicators can be used for its measurement. Previous studies demonstrate that various parameters for firm growth have been used [52] [3]. Going through the literature, it is observed that researchers have used different indicators for study of growth. For instance, five different indicators used for the study of growth were identified by Delmar (2006) [53]. These indicators included sales (turnover or revenue), performance, employed workforce, assets growth and firm's share in the market. It can be concluded from the work of Delmar et al. (2003) [54] that sales growth could be taken as the most popular choice of researchers as sales was used in 31% among all the studies focused on growth phenomenon [53]. Hence, this study also undertakes 'Sales Growth' as the measure of the dependent variable 'Firm Growth'. Independent variables used in this study are: Profitability, Leverage, Innovation, Liquidity, Firm size, Firm age.

Table 1. Variables Definition

Variables	Definition	
Dependent Variable:		
Growth	Sales growth (t_1) =	Sales (t_1) - Sales (t_0) Sales (t_0)
Independent Variables:		
Profitability	ROE =	Net Profit Shareholders' Equity
Leverage	Liabilities to Equity =	Total Liabilities Shareholders' Equity
Innovation	Intangible assets ratio =	Intangible Assets Total Assets
Liquidity	Current Ratio =	Current Assets Current Liabilities
Size	In (Total assets)	
Age	Age since incorporation of business	

The regression equation is defined as follows:

$$\text{Growth} = \beta_0 + \beta_1 \text{Profitability} + \beta_2 \text{Leverage} + \beta_3 \text{Innovation} + \beta_4 \text{Liquidity} - \beta_5 \text{Size} - \beta_6 \text{Age}(1)$$

This study mainly focused about investigation of financial determinants, firm size and age, and how these could have an impact on the growth of firms in Pakistani context. To find this relationship, we applied a fixed effect regression model on panel data for the period 2006-2011 of 373 companies selected from non financial sectors listed at KSE (Karachi Stock Exchange). Schimke and Brenner (2011) [55] also had applied a similar technique. 26 companies were excluded from our sample due to unavailability of required data. In this study, it is assumed that firm growth demonstrates the pattern of Normal Distribution. Diagram given below shows the histogram of Growth variable included in our analysis. It is clear from the histogram the data under study is approximately normally distributed.

Results and Discussions

The sample of this study consists of 373 listed companies in various non-financial sectors and each company's observations consist of six year (2006-2011). So we applied fixed effect model for the analysis of panel data.

Table 2 shows the descriptive statistics results of our model under study. Total sample consisted of 373 listed

companies. As the data was collected for six years (2006-2011) for each company, we have a total of 2238 observations. As the data for dependent variable 'Growth' was related to sales growth based on previous year's change, the first year 2006 in our analysis had to be kept blank, thus resulting in a total of 1867 values for the variable Growth.

Table 2. Descriptive statistics

Variables	Mean	Std. Deviation	N
Growth	0.35535	6.919558	1867
Profitability	0.06873	3.735759	2238
Leverage	1.66973	52.465060	2238
Innovation	0.00836	0.045525	2238
Liquidity	2.29906	23.168121	2238
Size	14.23598	2.577594	2238
Age	30.56300	14.996746	2238

The missing values were dealt pair-wise. Results show that average growth of the companies included in our sample is 35.5%. Profitability (ROE) showed an average of 6.8%. Leverage is 1.67 indicating that an average company in our sample has 1.6 times owner's equity as compared to liabilities. We come to a very little average value 0.08% for innovation (intangible assets ratio to total assets). Liquidity (Current Ratio) has a value of 2.299 which means that companies in sample, on average, have almost 2 times more current assets to pay off their current liabilities. Average size of companies under study is 14.2 and average age is 30 years.

Table 3. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	20.351856	6	0.0024

Above result of table 3 represents that the fixed effect is preferable for estimating panel data under study because the null hypothesis of Hausman test that there is no difference between fixed effect and random effect models is rejected against the alternative hypothesis that fixed effect model is preferable because p-value is less than 5% level of significance.

Table 4. Results of Fixed effect model

Variable	Coefficient	Std. Error	t-Statistic	Prob.	F-statistics	R-squared
Innovation	1.234816	0.495429	2.492419	0.0128	2.1527	0.3535
Leverage	0.005210	0.001179	4.418738	0.0000		
Liquidity	0.000483	0.000585	0.826374	0.4087		
Profitability	0.101294	0.018220	5.559507	0.0000		
Size	0.006801	0.001625	4.185327	0.0000		
Age	-0.008333	0.004566	-1.825179	0.0682		
C (Constant)	0.485627	0.151742	3.200347	0.0014		
Overall Prob.				0.0000		

By looking at table 4 above, we can see that Profitability has a positive and significant impact on Growth (0.101). It means that keeping other variables unchanged, Firm growth will increase by 10% with one unit increase in profitability (ROE). Leverage also has a significant positive relation with Firm Growth though this relationship is not very prominent (0.005 or just 0.5%). However, results show that as leverage increases, growth also shows an increase. Innovation shows a significant and positive relationship (+123%) with Firm Growth. It indicates that investment in intangible assets has a remarkable effect of more than 100%, on average, on the growth of firms.

According to our analysis, Liquidity (current ratio) has an almost unnoticeable positive effect (0.04%) on Firm Growth on average. However, this effect is non-significant regarding our sample of non-financial listed companies of Pakistan. Firm Size shows a significant, minute positive relationship with Firm Growth. It means that size of the companies in Pakistani context does not have a major impact on growth of the companies, though large companies seem to affect growth a little more than small and new firms. Firm Age also has quite a little but negative impact (-0.008) on firm growth. Hence, we can say that increase in age of firm shows a little decrease in its growth, i.e., firms becoming old show a decline in their struggle for growth, which means that new and young firms have better growth potential.

The value of R-squared is 0.35 and Durbin-Watson value is 2.30 (well between 1.25 and 2.50). It means that our fixed effect model of panel data fulfills the overall model fit. Above results about the coefficients of estimators show that the findings of this research mostly indicate an agreement with hypotheses formulated based on empirical literature. H1, H2 and H3 are proved to be correct, i.e., Profitability, Leverage and Innovation have positive relationship with Firm Growth. Hypothesis H4 does not show a reliable confirmation as the effect of Liquidity on Firm Growth is though positive, yet is non-significant. H5 about negative relation between Growth and Firm size is rejected as the results of our analysis are showing a significant positive relationship between Growth and Firm size in Pakistan context. Firm age shows a negative impact on Firm Growth. Although it proves H6 in our study about negative correlation between Growth and Firm age, yet the results are non-significant, though quite near to level of significance.

The results of the present study are in line with the previous studies like Haned & Colombelli (2011) [40] investigated the correlation between innovation and firm growth and found that firms with more innovative products indicate more growth. Other researchers that came up with similar findings are Roper (1997) [41], Geroski and Machin (1992) [42] and Corsino (2008) [43]. In the response of leverage, Rahaman (2011) [36] found a positive and a significant relation between leverage and firm growth. Huyn and Petrunia (2010) [37] also found a significant positive relationship between leverage and firm growth. The results of this work are validated by the above said studies. For the study about liquidity, Gill & Mathur (2011) [51] showed that the firms which were able to maintain higher levels of liquidity faced comparatively less stringent financial conditions, which as helpful in financing the growth alternatives at comparatively lesser expenses. Regarding profitability, we see that Glancey (1998) [11] pointed out a positive correlation between profitability and growth. Our study also showed a significant and positive linkage between profitability and growth and thus, the results are consistent with preceding studies. Hall (1987) [21] showed that small firms tend to grow faster than the large ones. Harhoff et al. (1998) [23] also found evidence that small firms grow faster than large ones. Dunne and Hughes (1994) [25] suggested that size matters for growth for small firms and the variance of growth rate decreases with size. However, the results of our study show that, for Pakistani listed companies in non-financial sectors, firm size has a positive impact on growth, hence a variation from most of the previous empirical findings. Regarding firm age, our study shows a negative relationship between firm growth and age

which is in conformity with most of the earlier empirical findings.

Conclusion

This study analyzed the determinants of firm growth in the Pakistani context. The research was mainly focused on financial ratios which measure profitability, leverage, innovation and liquidity and how these ratios affect the firm growth. We also analyzed the impact of firm size and firm age on growth. Data was collected from annual reports of companies in non-financial sector listed at Karachi Stock Exchange, from SBP publication 'Financial Statements Analysis of Companies (Non-Financial) Listed at Karachi Stock Exchange (2006-2011)' and data was also gathered from Securities and Exchange Commission of Pakistan (SECP). For analysis of panel data, fixed effect model was used. Results of our study show that major financial determinants do have a positive impact on the growth of the firms. Especially, profitability and Innovation have a remarkable positive effect on growth. A firm with a healthier Return on Equity (ROE) is expected to grow at a comparatively faster pace. Similarly, innovation (intangible assets ratio) shows a remarkable positive relationship with growth. It means that investment in R&D, innovation, creative and sophisticated processes and technological developments brings a revolutionary break-through in the advancement of firms.

Like other studies, this research also suffers from certain limitations. First, sample data was collected from 2006 to 2011 only for six years. With data comprising greater periods and a larger sample, the study would have shown even better results. Second, the findings of this research are not based on a broad population, since only listed companies in non-financial sector were taken into account. The findings thus only apply to non-financial sector and would have shown better results if listed companies in financial sector were also used, or if both public and private limited companies were taken into consideration. Third, the analysis was carried out on the whole sample. If separate analysis was done for small and large companies, for new and old firms and for different sectors of operation, we would have attained more detailed results and a comprehensive understanding of the phenomenon of firm growth. Fourth, measures of firm growth other than sales growth could also be used based on the existing literature on firm growth. Fifth, a comprehensive analysis could be undertaken by adding more dependent variables in the study. The study of firm growth can prove a great advancement in understanding the phenomenon of the growth potential of enterprises. Study of firm growth from the perspective of its various determinants will enhance our understanding of diversified effects that lead to a successful firm and hence, it will be remarkably helpful in formulating the development strategies for emerging economies. More determinants should be included in the analysis to broaden the vision about this growth concept. Use of sophisticated econometric techniques is hereby strongly recommended for a profound and comprehensive understanding of the concept of firm growth and the impact of its various financial, institutional, managerial, operational, and economic determinants.

References

- [1] Wiklund, J. Small Firm Growth and Performance – Entrepreneurship and Beyond. Jönköping, Jönköping International Business School, 1998.
- [2] Chandler, G. N., McKelvie, A. & Davidsson, P. (2005). *New venture growth: A transaction cost perspective*. Paper

presented at the Paper presented at the Academy of Management Conference, Honolulu.

[3]Davidsson, P., F. Delmar and J. Wiklund, *Entrepreneurship and the growth of firms*, Edward Elgar Publishing, 2006.

[4]Gibrat, R. (1931), *Les Inégalités Économiques*, Paris, Librairie du Recueil Sirey.

[5]Hart, P.E. 1962. "Size and growth of firms" *Economica*, 29(1), pp. 29–39.

[6]Hart, P. E. and S. J. Prais (1956), "The Analysis of Business Concentration: A Statistical Approach", *Journal of the Royal Statistical Society*, 119 (part 2, series A), 150-191.

[7]Hymer, S. and P. Pashigian (1962), "Firm Size and Rate of Growth", *Journal of Political Economy*, 70(4), 556-569.

[8]Kumar, M. S. Growth, Acquisition Activity and Firm Size: Evidence from the United Kingdom, *Journal of Industrial Economics* 1985; 33: 327-338.

[9]Evans, D. S. (1987a), "The Relationship between Firm Growth, Size, and Age: Estimates for 100 Manufacturing Industries", *Journal of Industrial Economics*, 35(4), 567-581.

[10]Hart P E (2000). "Theories of Firms growth and the generation of jobs", *Review of industrial organization*, 17: 229-248.

[11]Glancey, K. Determinants of growth and profitability in small entrepreneurial firms, *International Journal of Entrepreneurial Behaviour & Research* 1998; 4(1): 18-27.

[12]Penrose, E. *The Theory of the Growth of the Firm*, Basil Blackwell, Oxford 1959.

[13]Baumol W J (1959). "Business Behaviour, Value and Growth", Harcourt Brace and World, New York.

[14]Chandler, Alfred D., Jr. 1962. *Strategy and Structure*. New York: Doubleday.

[15]Marris, Robin. 1964. *The Economic Theory of "Managerial" Capitalism*. New Your Free Press.

[16]Geroski P (1995). "What Do We Know About Entry?", *International Journal of Industrial Organization* 13(4), 421–440.

[17]Jovanovic B (1982). "Selection and evolution of industry". *Econometrica* Vol 50, No. 3.

[18]Greiner L E (1972). "Evolution and revolution as organizations grow", *Harvard Business Review*, July–August, pp. 37–46.

[19]Mueller D (1972). "A Life Cycle Theory of the Firm", *Journal of Industrial Economics*, 20, 199-219.

[20]Coad A (2009). "The Growth of Firms: A Survey of Theories and Empirical Evidence" Edward Elgar: Cheltenham.

[21]Hall B H (1987). "The Relationship between Firm Size and Firm Growth in the U.S. Manufacturing Sector", *Journal of Industrial Economics* 35 (4), 583-600.

[22]Wagner, J. Firm Size, Firm Growth, and Persistence of Chance: Testing GIBRAT's Law with Establishment Data from Lower Saxony, 1978-1989, *Small Business Economics* 1992; 4: 125-131.

[23]Harhoff, D., Stahl Konrad and M. Woywode. Legal Form, Growth and Exit of West German Firms – Empirical Results for Manufacturing, Construction, Trade and Service Industries, *Journal of Industrial Economics* 1998; 46: 53-488.

[24]Almus, Matthias and E. A. Nerlinger.. Testing 'Gibrat's Law' for Young Firms – Empirical Results for West Germany, *Small Business Economics* 2000; 15: 1-12.

[25]Dunne, Paul and A. Hughes. Age, Size, Growth and Survival: UK Companies in the 1980s, *Journal of Industrial Economics* 1994; 42: 115-140.

[26]Hart, Peter and N. Oulton. Growth and Size of Firms, *Economic Journal* 1996; 106: 1242-1252.

[27]Coad, A. and W. Hözl. Firm growth: Empirical analysis, WIFO working papers, WIFO 2010; 361 pp.

[28]Goddard, J., P. Molyneux. and J. Wilson. Dynamics of growth and profitability in banking, *Journal of Money, Credit & Banking* 2004; 36: 1069-1091.

[29]Jang, S. and K. Park. Inter-relationship between firm growth and profitability, *International Journal of Hospitality Management* 2011; 30: 1027-1035.

[30]Serap ÇOBAN. The Interaction between Firm Growth and Profitability: Evidence from Turkish (Listed) Manufacturing Firms. *The Journal of Knowledge Economy & Knowledge Management* 2014 / Volume: IX FALL.

[31]Donaldson, G. *Corporate Debt Capacity*, Harvard University, Boston, Mass 1961.

[32]Myers, S. C. and N. F. Majluf. Corporate financing and investment decision when firms have information that investors do not have, *Journal of Financial Economics* 1984; 13: 187-221.

[33]Huyghebaert, N. and L. Van de Gucht. The determinants of financial structure: New insights from business start-ups, *European Financial Management* 2007; 13: 101-133.

[34]Heshmati, A. On the Growth of Micro and Small Firms: Evidence from Sweden, *Small Business Economics*, 2001; 17: 213-228.

[35]Honjo, Y. & Harada, N. (2006). SME Policy, Financial Structure and Firm Growth: Evidence From Japan. *Small Business Economics*, 27, 289-300.

[36]Rahaman, M. M. Access to financing and firm growth, *Journal of Banking and Finance* 2011.

[37]Huynh, K. P. and R. J. Petrunia. "Age effects, leverage and firm growth", *Journal of Economic Dynamics and Control* 2010; 34(5): 1003-101.

[38]Coad, A. and R. Rao. Innovation and Firm Growth in High-Tech Sectors: A Quantile Regression Approach, *LEM Papers Series*, 2006/18, Laboratory of Economics and Management (LEM) 2006; Sant'Anna School of Advanced Studies, Pisa, Italy.

[39]Cainelli, G., R. Evangelista and M. Savona. Innovation and economic performance in services: a firm-level analysis, *Cambridge Journal of Economics* 2006; 30(3): 435-458.

[40]Haned, C. N. and A. Colombelli. On Firm Growth and Innovation - Some New Empirical Perspectives Using French CIS, 1992-2004, 2011; ICER Working Paper, No. 7/2011.

[41]Roper, S. Product Innovation and Small Business Growth: A Comparison of the Strategies of German, UK and Irish Companies, *Small Business Economics* 1997; 9: 523-537.

[42]Geroski, P. A. and S. Machin.. Do Innovating Firms Outperform Non-innovators?, *Business Strategy Review*., Summer 1992; 79-90.

[43]Corsino, A. Product Innovation and Firm Growth: Evidence from the Integrated Circuits Industry, *DRUID* 2008; 1-36 pp.

[44]Bottazzi, G., G. Dosi, M. Lippi, F. Pammolli and M. Riccaboni. Innovation and Corporate Growth in the Evolution of the Drug Industry. *International Journal of Industrial Organization* 2001; 19: 1161-1187.

[45]Geroski, P. A. and M. Mazzucato. Learning and the Sources of Corporate Growth, *Industrial and Corporate Change* 2002; 11: 623-644.

[46]Aldemir, Z. Determinants of Firm Growth in Renewable Energy Industry, *Departament d'Economia de l'Empresa, Universitat Autònoma de Barcelona* 2011.

[47]Geroski, Paul A. The Growth of Firms in Theory and Practice, *CEPR* 1999; Discussion Paper No. 2092.

- [48]Alex Coad, Agustí Segarra and Mercedes Teruel. Innovation and firm growth: Does firm age play a role? Elsevier Research Policy 2016; Volume 45, Issue 2, March 2016, Pages 387–400.
- [49]Mateev, M. and Y. Anastasov. Determinants of small and medium sized fast growing enterprises in Central and Eastern Europe: A panel data analysis, *Financial Theory and Practice* 2010; 34(3): 269-295.
- [50]Beekman, A. V. and R. B. Robinson. Supplier partnership and the small, high-growth firm: Selecting for success, *Journal of Small Business Management* 2004; 42 (1): 59-77.
- [51]Gill, A. and N. Mathur. Factors that Affect Potential Growth of Canadian Firms, *Journal of Applied Finance & Banking* 2011; 1(4): 107-123.
- [52]Weinzimmer, L. G., Nystrom, P. C. & Freeman, S. J. (1998). Measuring organizational growth: Issues, consequences and guidelines. *Journal of Management*, 24(2), 235-262.
- [53]Delmar, F. (2006). Measuring Growth: Methodological Considerations and Empirical Results. In P. Davidsson, F. Delmar and J. Wiklund (Eds.), *Entrepreneurship and the Growth of Firms* (pp. 62-84). Cheltenham (UK); Northampton (MA, USA): E. Elgar, cop.
- [54]Delmar, F., Davidsson, P. & Gartner, W.B. (2003). Arriving at the High-Growth Firm. *Journal of Business Venturing*, 18 (2), pp. 189-216. DOI:10.1016/S0883-9026(02)00080-0
- [55]Antje Schimke and Thomas Brenner. Temporal structure of firm growth and the impact of R&D, WORKING PAPER SERIES IN ECONOMICS No. 32, JULY 2011; ISSN 2190-9806.