

Assessment of Multiple Measures of Growth for Small and Medium Enterprises: A Study on Servo Stabilizer Manufacturing Unit

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Small and Medium Enterprises (SME) are the driving force of an economy. There are number of studies on the growth of small and medium enterprises (SMEs) but no coherent picture exists regarding the appropriate growth indicator or measure. This present study is on a typical manufacturing sector of India, namely, servo stabilizer manufacturing unit, one of the predominant small and medium firms. The aim of the study has been to examine the multiple measures of growth used to assess the growth of firms namely, very small, small and medium firms and to find the important growth measures well suited for the study of SMEs. The study will help researchers, managers and policy-makers on an important question, namely what appropriate measures of growth to concentrate on to achieve desired results.

Keywords: Servo stabilizers, SMEs, firm growth, multiple measures, manufacturing firms

Introduction

Small businesses are viewed as an essential element of a healthy and vibrant economy. Previous economic studies relating to enterprises have tended to focus on large enterprises but now the importance of small firms has been well understood. Though SMEs are constrained by size, collectively their contribution to the economy is substantial. In a developing country like India, SMEs plays a prominent role in contributing significantly in terms of output, export and employment generation. Ministry of MSME (2007) in its 'Fourth All India Census of MSMEs' reports that, this sector employs an estimated 59.7 million persons spread over 26.1 million enterprises. In recent years the SME sector has consistently registered higher growth rate compared to

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the overall industrial sector. The role of SMEs in the industrial sector is growing rapidly and it has become a thrust area for future growth. To encourage the growth of this sector, it is important to understand what is perceived to be growth and how are they measured.

Review of Literature on measures of growth

Growth is the result of exploration of opportunities. Firms take advantage of those opportunities and grow (Barney, 1986). Growth itself is a multidimensional construct, so needs to be assessed adequately, by several measures simultaneously. There are two basic approaches to measuring growth: absolute and relative growth. Absolute growth refers to the actual change in size of the company between time points, whereas relative growth refers to change in growth relative to the original size. Relative growth is sometimes referred to as growth rate. Relative measures favor growth in small firms, whereas absolute measures favor large firms. When comparing results with other studies, it is vital to remember the implications of choice between relative and absolute growth measures (Delmar et al., 2003). Business growth is typically defined and measured, using absolute or relative changes in sales, assets, employment, productivity, profits and profit margins (Delmar, 1997).

The review of literature on growth measures reveals the following:

There seems to be an emerging consensus that if only one indicator is to be chosen as a measure for firm growth, the most preferred measure should be sales (Ardishvili et. al, 1998; Hoy, McDougall and Dsouza 1992). Sales are relatively easily accessible, it applies to all sorts of firms, and it is relatively insensitive to capital intensity and degree of integration. Weinzimmer et. al (1998) report that from 35 articles identified, 8% used assets to measure growth, 17% used employment, while nearly three-quarters of these studies used sales as their only measure.

Sales are not the perfect indicator of growth for all purposes. Sales are sensitive to inflation and currency exchange rates, while employment is not. It is not always true that sales lead the growth process. Arguments have been offered that employment is a much more direct indicator of organizational complexity than sales, and may be preferable if the focus of interest is on the managerial implications of growth (Churchill and Lewis 1983; Greiner 1972). As Kimberley (1976) stated, the number of employees is the most widely used measure of size. The number of employees reflects how the internal process is organized and adapts to changes in activity.

The problem of employment as a growth indicator is that this measure is affected by labor productivity increases, substitution of man by machine and degree of integration. Thus it is also possible to increase sales and assets

without acquiring additional resources or employing additional staff (Delmar et al, 2003). A firm can grow considerably in output and assets without any growth in employment. Added value may be a better variable since it explains the capacity of the process to increase the value of the output. It is therefore quite a good indicator of internal activity. Penrose (1995) had recognized the need to measure growth performance on some basis, for example in terms of the growth of fixed assets.

Profitability is an important measure of performance that must be considered as it is unlikely that firm growth can be sustained without profits being available for reinvestment in the firm. Growth along this dimension can be considered in terms of net profit margins or return on assets (Fitzsimmons et.al, 2005). The relationship between the different measures of performance can be complex in nature with growing firms not necessarily performing better when financial performance is taken into account. Firms may also trade off performance along different dimensions, choosing for instance, to trade-off long term growth for short term profitability (Zahra, 1991).

Market share growth like sales growth, provides an indication of the acceptance of the firm's products or services in the market. A firm's market share can increase as a result of concerted efforts on behalf of the firm to increase its share, or simply from industry dynamics, such as withdrawal of a competitor. Market share growth can be evaluated based on industry or at the level of a given product category (Kerin et. al, 1992).

Since there is no universally superior growth indicator seems to exist, some scholars advocate composite measures using multiple indicators (Davidsson, 1989) while other scholars advocate using the same explanatory model on several growth measures (Delmar, 1997). The use of multiple measures of firm growth would likely provide a more complete picture of any empirical relationships as well as provide a way to test the robustness of any theoretical model to misspecifications in the dependent variable. The implication of this view is that growth research would only be investigating the overall concept of organizational growth. Among available alternatives the researcher has the choice to a) create a multiple indicator index; b) use alternative measures separately, and c) find the one, best indicator. If growth is conceived of as a latent construct with common causes but alternative manifestations the multiple-indicator index makes sense (Davidsson, 1991).

From the above studies, it is identified that the measures of growth commonly used in studies are sales, employment, production, assets, profit and market share.

Objectives of the study

Growth is a vital indicator of any existing firm but there is no consensus on appropriate choice of measure of growth. It is imperative to study the growth of SMEs using different measures of growth to test the robustness of any theoretical model. In view of this, the current study on growth measures has been undertaken among the Servo Stabilizer manufacturing SME firms. Servo Stabilizers are commonly used in industries and the demand is spread throughout the year. Moreover 80 percent of the firms are small and in informal sector which makes it a typical Indian manufacturing sector. This study aims to bring forward the appropriate measure of growth to assess the growth of a typical SME sector in India.

The specific objectives are:

- i) To assess the multiple measures of growth for very small, small and medium firms.
- ii) To evaluate the multiple measures of growth most appropriate for the growth of SME firms.

Methodology

The sample consisted of SME units whether registered or not registered under District Industrial Centre. The addresses of the firms were collected through various sources like Telephone directories, Online directories, District industrial centre, Raw material suppliers, District Small scale industrial Association, Indian Electrical Equipment Manufacturers Association and enquiries from the Manufacturers of Servo Stabilizers which totaled to 570 firms. Out of the total 570 firms, 150 firms constituting 26.31% of the population were selected randomly from 12 states/union territories namely, Tamilnadu, Karnataka, Andhra Pradesh, Kerala, Delhi, Uttar Pradesh, West Bengal, Maharashtra, Gujarat, Punjab, Haryana and Chattisgarh. A structured interview and postal questionnaire method was used for the data collection. The data collection took place during the period 2007 to 2009.

Results and Discussions

The data was computed to analyze the classification of firms, business profile and multiple measures of growth.

Classification of firms

The firms were classified into very small, small and medium firms based on the number of employees in their organization. Those firms with number of employees less than 10 were classified as very small, those with

number of employees 10 to 20 as small and more than 20 as medium firms and the same has been presented in Figure 1:

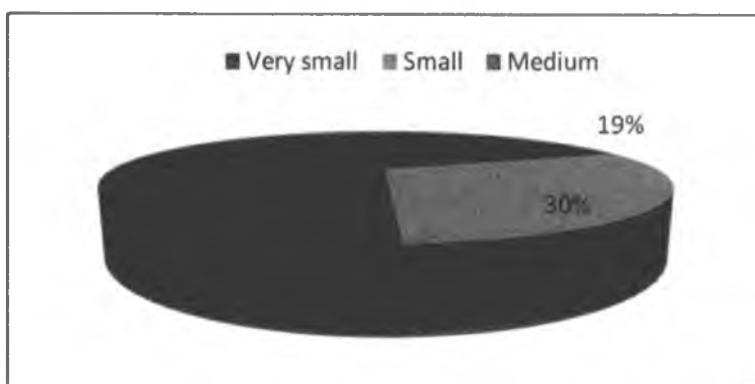


Figure 1: Classification of firms

Business Profile

The business profile of the firms has been studied on the basis of, age of the firm and type of organization in the categories of very small, small, medium and total firms selected for the study and the same has been presented in Table 1:

Table 1: Business Profile of the firms

Factors		Very small firms	Small firms	Medium firms	Total firms
Years of business operation	5-10	16(55.3)	16(35.5)	18(23.7)	50(33.3)
	10-15	7 (24.1)	11 (24.4)	22 (28.9)	40 (26.7)
	15-20	3 (10.3)	6 (13.3)	17 (22.4)	26 (17.3)
	20 and Above	3 (10.3)	12 (26.7)	19 (25)	34 (22.7)
	Total	29 (100)	45 (100)	76 (100)	150 (100)
Type of organization	Sole Proprietorship	15 (51.7)	16 (35.6)	12 (15.8)	43 (28.7)
	Partnership	11 (37.9)	15 (33.3)	29 (38.2)	55 (36.7)
	Private Ltd	3 (10.3)	14 (31.1)	33 (43.4)	50 (33.3)
	Others	0	0	2 (2.6)	2 (1.3)
	Total	29 (100)	45 (100)	76 (100)	150 (100)

* The value in the parenthesis is percentage

It is found from the Table 1 that:

- In the years of business operation it is found that, 16 (55.3%) of the very small firms and 16 (35.5%) of the small firms have operated for

5 to 10 years. Further a maximum of 22(28.9%) of the medium firms have operated for 10-15 years in this business.

- The type of organization adopted for 15 (51.8%) of very small firms and 16 (35.6%) of the small firms are sole- proprietorship, further a maximum of 33 (43.4%) of the medium firms are private limited companies.

Assessing the multiple measures of growth

The Table 2 describes the mean values of the variables such as, growth in assets for three years after the commencement of the business, production in the year 2008-2009 (value in Rs.), profit margin is profit on sales (percentage), market share is taken on the basis of 28 states and 7 union territories (converted to percentage) and average sales in 5 years from the year 2004-2009 (Rs.) for very small, small, medium and total firms separately.

The measures of growth in terms of mean, standard deviation and co-efficient variation are presented in Table 2

Table 2: Multiple measures of growth for very small, small and medium firms

Measures of Growth	Descriptive analysis	Very Small firms	Small firms	Medium firms	Total firms
Growth in assets (value in Rs.)	Mean	8,38,621	7,24,889	34,12,434	21,08,567
	Standard Deviation	8,12,055	5,78,900	46,94,321	36,15,858
	Co-efficient of Variation	96.83	79.86	137.56	171.48
Production (value in Rs.)	Mean	1.3E+07	1.5E+07	2.0E+07	1.7E+07
	Standard Deviation	1.2E+07	1.8E+07	2.3E+07	2.0E+07
	Co-efficient of Variation	92.30	120	115	117.64
Profit Margin(percent)	Mean	9.87	12.46	10.46	10.95
	Standard Deviation	29.40	59.98	25.87	37.82
	Co-efficient of Variation	297.67	481.14	247.34	345.41
Market share (percent)	Mean	13.10	12.44	15.83	14.29
	Standard Deviation	17.32	13.89	20.19	17.92
	Co-efficient of Variation	132.21	111.65	127.54	125.40
Average sales (value in Rs.)	Mean	136,95,476	189,94,867	339,17,342	2.6E+07
	Standard Deviation	148,62,568	429,21,869	914,03,990	7.0E+07
	Co-efficient of Variation	108.52	225.96	269.49	269.23

Table 2 shows that, comparing the very small, small and medium firms it was found that, the small firms are able to achieve the maximum profit margin. The medium firms are high in respect of growth in assets, production per annum, percentage of market share and average sales. The very small firms are far behind the small and medium firms with respect to the multiple measures of growth taken for the study.

Appropriate measures of growth

The multiple measures was further tested using Analysis of Variance and t-test to test the equality of the mean values of the variables such as growth in assets, annual growth in production (year: 2007-2008 and 2008-2009), growth in sales for 5 years, profit margin and growth in market share between the very small, small and medium type of firms.

The results of analysis of variance are provided for each classification of business growth such as; less than 5%, 5% to 10%, 10% to 20%, 20% to 40% and total percentage for very small, small and medium firms are presented in Table 3.

Table 3: Business growth classification from less than 5% to 40% and total percentage

(Sig - Significance)

Variables	Classification of Business growth									
	Less than 5%		5%-10%		10%-20%		20%-40%		Total percent	
	F values	Sig	F values	Sig	F values	Sig	F values	Sig	F values	Sig
Growth in assets	.031	NS	.235	NS	2.566	NS	.416	NS	.416	NS
Growth in production	.554	NS	.035	NS	2.372	NS	2.503	NS	2.503	NS
Growth in sales	.106	NS	1.033	NS	3.913	*	1.354	NS	1.354	NS
Profit margin	.534	NS	.040	NS	.145	NS	.206	NS	.206	NS
Market share	.194	NS	1.048	NS	1.375	NS	.377	NS	.377	NS

*S - Significant at 5% level (p value < 0.05), *NS - Not Significant at 5% level (p value \geq 0.05)

It is inferred from the Table 3 that, there is significant difference between very small, small and medium firms under business growth 10% - 20% in respect of growth in sales considered for the study and in other classification of business growth it is not significant.

Business growth from 40% and above

Business growth of 40% and above is found among the small and medium firms only and hence the t-test has been computed for these firms.

The results of t-test in terms for the category of business growth 40% and above are presented for small and medium firms in Table 4.

Table 4: Business growth 40% and above

Variables	Classification of firms	t values	p values	Significant
Growth in assets	Small	.550	.638	NS
	Medium			
Growth in production	Small	-	-	NS
	Medium			
Growth in sales	Small	-37.500	.001	*
	Medium			
Profit margin	Small	1.134	.374	NS
	Medium			
Market share	Small	-18.520	.003	*
	Medium			

* Significant at 5% level (p value < 0.05), NS - Not Significant at 5% level (p value \geq 0.05)

Table 4 indicates that, there is significant difference between small and medium firms mean values under business growth 40% and above in respect of growth in sales and market share considered for the study.

Implications of the study

The multiple measures such as sales, production, assets, profit margin and market share are the multiple measures of growth taken to assess the growth of firms and employment is taken to classify the firms into very small, small and medium firms. It is clear that all types of firms such as very small, small and medium firms do not grow in the same way. By examining the multiple indicators it was found that, the very small, small and medium firms do not have significant difference with respect to less than 5% and 5% -10% business growths. All the classification of firms business growth from 10% - 20% have significant difference with respect to sales. The reason for such growth in sales is that, servo stabilizers are extensively used in all sectors. Generally there is an uptrend for most of the sectors, the real estate business is flourishing; new residential apartments, shopping centres and service apartments have thrown more opportunities for Servo Stabilizer manufacturers and hence their requirement for Servo Stabilizers is increasing. From this it is understood that firms must increase their sales to achieve 10% -20% business growths. Further it was also found that, all the classification of the firms with business growth 20% - 40% and total percentage have no significant difference between the multiple measures of growth.

Small and medium firms with 40% and above business growth have significant difference in respect of sales and market share. The reason for

such growth in sales and market share are; firms are able to get government orders, bulk orders from Original Equipment Manufacturers and increased their revenues through exporting to countries like Bangladesh, Nepal, Russia, Kenya, Nigeria and Maldives and firms located in the capital cities have more conducive atmosphere to get government orders and enter into export business. It is clear that the firms intended to achieve 40% and above business growth, need to concentrate on sales and market coverage.

Conclusion

Firm's choice of growth measure is important because each indicator or measure reflect a different aspect of the firm growth. The growth in sales denotes the extent to which the customers are accepting the product or services. The growth in market share is an external growth measure which provides an indication of the acceptance of the firm's products or services in the market. The study on the multiple measures of growth aims to bring forward the appropriate measure of growth needed to assess the growth of a typical SME sector in India such as Servo stabilizer manufacturing firms. Thus the study will help managers and policy-makers to encourage appropriate measures of growth to achieve desired results. The findings of the study are that, the firms can improve their understanding of the multiple growth measures while progressing to achieve desired growth, profitability and longevity.

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