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# Why Do Small Firms Fail to Graduate to Medium and Large Firms in Pakistan*

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## I. INTRODUCTION

Small-scale manufacturing industries in Pakistan have grown at a rate of more than eight percent during the Seventies and the Eighties. The rapid growth in the presence of the heavily subsidised large-scale manufacturing sector suggests relatively higher levels of efficiency in the small-scale industries but surprisingly enough very few small enterprises have graduated to medium and large-scale enterprises. The inability of the small firms to graduate raises serious questions about the level and the sources of efficiency in the small-scale industries. While some of the small-scale industries may be efficient because the divisibility of technology and the processes leads to specialisation in sub-processes at the small scale, yet the efficiency in a number of industries may be more apparent than real; the inefficient enterprises may have survived just by avoiding taxes or exploiting labour. Obviously, such firms would find it difficult to expand to the size where tax and labour regulations would apply. On the other hand, the failure of even the efficient firms to graduate to medium or large firms indicate that the growth of small industries may have been constrained by some extraneous factors as well.

A number of studies have examined different aspects of small enterprises in Pakistan. These include among others Aftab (1990); Burki (1990); Chaudhry (1990); Ferks, Thomas and Tomesen (1989); Nadvi (1990); Kibria (1990) and Tomesen and Thomas (1992); Thomas *et al.* (1991). The main focus of these studies has been on labour absorption, training facilities, and availability of technology. The level and sources of efficiency in small enterprises have rarely been examined in these studies.

The present study makes an attempt to examine the level and sources of efficiency and examines constraints on the growth of small firms in Pakistan. Since the relatively higher level of efficiency in the small-scale manufacturing industries is attributed to lower capital intensity, the paper focusses on the analysis of capital intensity and productivity of capital and labour. The viability of various economic activities has also been examined by taking into consideration that small enterprises are exempted from the payment of sales taxes and excise duties and that the labour

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laws are not applicable to small producers which tend to reduce the wage costs and allow the producers to exploit the workers in terms of work for longer hours. It also examines constraints on the growth of the small-scale industries.

The plan of the paper is as follows. After this introductory section, the availability of data for determining the level and sources of efficiency and constraints on the expansion of small firms has been discussed in Section II. The levels and sources of efficiency in the small-scale industries have been analysed in Section III. The possibilities of expanding existing industrial enterprises and the constraints on their expansion are examined in Section IV. The main sources of financing the investment in small industries are discussed in Section V. The concluding section summarises the main findings of the study.

## II. AVAILABILITY OF DATA

The Census of small-scale industries is the main source of data on these industries. While the census for 1990-91 has been taken, the results are not yet available; the latest census for which results are available relates to the year 1983-84. Whereas the census data is quite rich in terms of coverage, the quality of data is quite suspect. Even more importantly, it does not provide any data required to ascertain the sources of efficiency and constraints on the growth of the small firms. Therefore, these data are inadequate to determine the factors responsible for failure of small firms to graduate into larger enterprises.

Specialised surveys carried out by Chaudhry (1990); Aftab (1990) and Nadvi (1990) are not very useful either because of the small sample and the narrow coverage in terms of both the area and industrial activities. Moreover, they have mainly focussed on training and absorption of labour.

The present study is based on the survey specially designed for answering the questions raised earlier. The survey financed by FES provides data for 687 small-scale manufacturing firms in eleven major urban centres of Pakistan. It covers all the important activities in the small-scale manufacturing sector. For details of the survey, see Kemal and Mahmood (1992).

## III. SOURCES OF EFFICIENCY IN SMALL SCALE INDUSTRIES

Capital intensity may, alternatively, be defined in terms of capital-labour ratio and capital-output ratio. While the former refers to technological choices made by the firms and is a possible source of efficiency, the latter is a measure of the productivity of capital. The estimation of capital-labour and capital-output ratios is handicapped by three main problems in the estimation of the capital stock especially in the small-scale industries. First, a large number of small firms are located in the residential areas and the same building is generally used for both housing and business purposes and, as such, it becomes rather difficult to apportion the cost of buildings to the business activity. The problem has been overcome in this study by estimating capital stock both inclusive as well as exclusive of land and buildings.

Second, a large number of entrepreneurs do not own, or own only partially, the capital equipment and, instead, hire buildings or equipment on rent. The value of rented capital has been estimated on the basis of the entrepreneur's own valuation and/or that by other entrepreneurs. Third, valuation of capital of different vintages becomes problematic and in this study the current value of capital equipment reported by the entrepreneurs has been used.

Small-scale manufacturing activities are, in general, less capital intensive than the corresponding large-scale industries. The capital-labour ratio in small-scale industries, on average, in 1991-92, has been Rs 110,100 and if the land and buildings are excluded, only Rs 20,300. These estimates of capital intensity are in line with earlier studies. See Aftab (1990) and Nadvi (1990). The capital-labour ratio in small-scale industries is substantially lower than the average capital-labour ratio for large-scale manufacturing, i.e. about Rs 550,000. The small-scale manufacturing sector, on average, has the potential to create up to 5 times more jobs than the large-scale manufacturing sector can create with the same capital stock.

The productivity of capital, defined as the inverse of the capital-output ratio, has been quite high in the small-scale industries. On average, the capital-output ratio in the small-scale manufacturing industries has been 1.28. If land and buildings are excluded, the capital-output ratio is as low as 0.29 see Table 1. Compared to a capital-output ratio of around 3.0 in large-scale manufacturing, productivity of capital in small-scale industries is, indeed, very high.

Labour productivity in the small-scale manufacturing industries, on average, has been Rs 84,430 (see Table 1). Though less than half the average productivity of labour in the large-scale manufacturing industries, i.e. Rs 183,422, it still is large enough to ensure that the total factor productivity of small industries exceeds that in the large-scale manufacturing industries. Total factor productivity in small-scale industry is about 5 percent higher than that in the large-scale manufacturing sector.

The higher levels of productivity in the small-scale industries is partly due to the exploitation of labour in terms of longer hours of work. The workers in the small-scale manufacturing sector work for more than 57 hours per week. (See Table 2.) On the other hand, the workers in the large-scale manufacturing sector, work for a smaller number of hours, ranging between 40 and 48 hours per week. Total factor productivity in small firms is almost the same if the labour input is corrected for the number of hours, i.e. if the workers in the informal sector do not work for more than 48 hours per week.

There are sharp differences in capital intensity, productivity of labour and productivity of capital across various manufacturing industries. (See Table 1.) Capital intensity, defined in terms of both capital labour and capital output ratios, is very high in the beverages, tobacco, wood and cork, and printing and publishing industries. As a matter of fact, these are even higher than those for the large-scale enterprises operating in the same industries. Even more surprising is the fact that

Table 1
*Capital Intensity and Labour Productivity*

(In Percentage)

| | Capital-Output Ratio | | Capital-Labour Ratio | | Product-ivity of Labour (Rs 000) |
|---|---|---|---|---|---|
| | Including Land and Buildings | Excluding Land and Buildings | Including Land and Buildings | Excluding Land and Buildings | |
| Food Products | 1.45 | 0.19 | 137.1 | 17.8 | 94.8 |
| Beverage Industry | 3.05 | 0.96 | 327.0 | 103.3 | 107.4 |
| Tobacco Industry | 2.88 | 0.14 | 171.6 | 8.1 | 59.5 |
| Textile Manuf. | 1.26 | 0.38 | 104.6 | 31.4 | 83.3 |
| Footwear | 1.22 | 0.33 | 100.8 | 27.3 | 82.4 |
| Wood, Cork Manuf. | 16.27 | 0.14 | 925.2 | 8.0 | 72.9 |
| Furniture and Fixture | 0.86 | 0.07 | 62.6 | 5.2 | 72.9 |
| Paper and Products | 0.86 | 0.36 | 86.0 | 36.0 | 99.9 |
| Printing and Pub. | 4.26 | 1.16 | 203.7 | 55.4 | 47.8 |
| Leather and Goods | 0.27 | 0.02 | 32.3 | 2.4 | 117.7 |
| Rubber Products | 0.94 | 0.46 | 74.5 | 36.8 | 79.6 |
| Chemical Products | 1.64 | 0.57 | 148.0 | 51.7 | 90.4 |
| Non-metallic Mineral | 0.96 | 0.11 | 75.4 | 8.9 | 78.8 |
| Basic Metals | 0.46 | 0.09 | 91.7 | 17.5 | 200.5 |
| Metal Products | 1.23 | 0.14 | 111.1 | 12.3 | 90.5 |
| Manu. Except Elec. | 0.23 | 0.02 | 90.2 | 7.1 | 386.7 |
| Electrical Machinery | 1.29 | 0.28 | 119.3 | 26.2 | 92.6 |
| Misc. Industry | 1.52 | 0.29 | 79.8 | 15.3 | 52.4 |
| Total | 1.28 | 0.29 | 110.1 | 20.3 | 83.7 |

Table 2
*Average Hours of Work per Week in the Small-scale Manufacturing Sector*

| | Number or Hours per Week |
|---|---|
| Head of Enterprises | 55.6 |
| Family Helpers | 64.1 |
| Full time Workers | 57.0 |
| Casual Workers | 56.5 |
| *Shagirds* | 57.2 |

the productivity of labour in these industries is not higher than the average productivity of labour in small-scale manufacturing activities. These are the industries which are subject to sales taxes and excise duties in the large-scale manufacturing sector and the small firms are surviving only by avoiding taxes. If these industries are subjected to taxes, they would become non-viable.

A CES production function for the manufacturing sector has been estimated to determine the returns to scale in the small-scale industries and the variations in labour productivity across various urban centres in Pakistan. There are constant returns to scale in the small-scale manufacturing activities. (See Table 3.) It indicates that the technology is quite divisible and as such the size of the firm is indeterminate. It also points out that relatively higher labour productivity in the small-scale industries cannot be attributed to size only. On the other hand, it also suggests that there is no technological constraint on the growth of small firms. Therefore, their growth must have been constrained by certain other factors.

Table 3

*Production Function*

| Variable | Value of Coefficient | *t*-values |
|---|---|---|
| Constant | 1.865 | 10.36 |
| Wage | 0.596 | 21.58 |
| VAD | 0.969 | 59.39 |
| $C_1$ | 0.278 | 2.78 |
| $C_2$ | 0.181 | 1.82 |
| $C_3$ | 0.014 | 0.16 |
| $C_4$ | 0.496 | 3.67 |
| $C_5$ | 0.283 | 3.02 |
| $C_6$ | 0.366 | 3.29 |
| $C_7$ | 0.295 | 2.39 |
| $C_8$ | 0.083 | 0.80 |
| $C_9$ | 0.283 | 3.16 |
| $C_{10}$ | 0.264 | 2.60 |
| $\bar{R}^2$ | 0.895 | |
| $F$ | 333.58 | |

*Note:* VAD = Value added, and city dummies are $C_1$ = Rawalpindi/Islamabad; $C_2$ = Lahore; $C_3$ = Gujranwala; $C_4$ = Sialkot; $C_5$ = Faisalabad; $C_6$ = Multan; $C_7$ = Peshawar; $C_8$ = Quetta; $C_9$ = Karachi; $C_{10}$ = Hyderabad.

While the small-scale manufacturing industries are relatively more efficient than the large-scale industries, there is significant room for improving the efficiency further. As many as 65.2 percent entrepreneurs in the manufacturing sector reported that the productivity levels could be significantly enhanced. On average, they indicated that the productivity could be enhanced by 40.1 percent. The

differential in potential and actual level of productivity is largely due to the low level of capital utilisation. As many as 95.2 percent of the manufacturing enterprises have unutilised capacity in varying degrees; the average rate of capacity underutilisation in the small manufacturing industries has been 31.0 percent. The other constraining factors include lack of demand, lack of raw materials and spares and inadequate working capital.

## IV. POSSIBILITIES OF THE EXPANSION AND CONSTRAINTS ON THE EXPANSION OF FIRM

As many as 94 percent of the entrepreneurs wanted to expand their business but could not do so due to a number of factors inhibiting the desired expansion. Inadequacy of finances has been the biggest constraint on the expansion of the small-scale enterprises. As many as 41.1 percent of the entrepreneurs cited lack of capital as the major reason for their inability to expand their business. The other constraints identified by the small firms include lack of demand, lack of skills, lack of suitable business premises, and non-availability of raw materials. Lack of demand has been identified as the major constraint to the expansion of business by 14.6 percent of the entrepreneurs, while 14.1 percent firms felt that there was too much competition from the new entrants for any firm to grow to a sizeable size. Lack of space for business expansion has been cited by 11.2 percent of the firms and non-availability of raw materials by only 2.6 percent firms. Interestingly enough, only 0.8 percent of the manufacturers stated that government licensing, procedures and practices are hindering their business expansion. It is obvious that the alleviation of these constraints would be absolutely necessary if the small firms are to graduate to medium or large firms.

## V. INVESTMENT REQUIREMENTS AND SOURCES OF FUNDS IN THE INFORMAL SECTOR

It is a common perception that the lack of capital is one of the major factors inhibiting the growth of small enterprises and their transformation from informal to modern lines of production. Lack of finance forces the entrepreneurs to use mostly hand-driven tools and machinery and sometimes second-hand machines, inferior methods of production, and ineffective techniques of procurement of raw materials and marketing of their finished products. In fact, this problem is so acute and pervasive that all other problems such as inadequacy of raw materials and/or infrastructure, or those relating to labour or marketing become, in the ultimate analysis, a problem of finance.

Investment required to set up a small-scale manufacturing establishment in Pakistan, on average, is Rs .66 million and if the value of land and buildings is

excluded, the required investment is Rs .12 million. The maximum investment, inclusive of land and building, required to set up a unit in the wood and cork industry is Rs 3.9 million and the minimum required investment is .17 million in the leather goods industry.

**Sources of Funds**

The major source of funds in all the activities of the informal sector is family savings. (See Table 4.) Family savings accounted, on average, for more than half the funds, i.e. 51.7 percent. Investment from own savings while working as wage employees is the second most important source of funds. Own savings from working abroad are also an important source of funding accounting for about 6.2 percent of total funds. Use of farm income as investible resources in the urban informal sector is negligible. It is important to note that loans from local money lenders are also negligible. Loans from banks account for 8.1 percent of funds and loans from relatives to set up the business for about five percent of investment. Investment from reinvested profits of current business is only 2 percent of the total capital stock.

Since formal lending has been quite small and funds from other sources are limited, the small enterprises cannot expand despite their desire and technological capability. Accordingly, government shall be well advised to cater to the needs of the small entrepreneurs rather than focusing on large producers or the unemployed.

Table 4

*Sources of Funds in the Small Enterprises of Pakistan*

(In Percentage)

| | |
|---|---|
| *Own Saving* | |
| From Abroad | 3.72 |
| From Wages | 11.72 |
| *Family Saving* | 51.67 |
| *Loan from* | |
| Banks | 11.70 |
| Relatives 5.07 | |
| Money Lenders | 0.01 |
| *Income from* | |
| Other Sources | 11.80 |
| Farm | 0.75 |
| *Reinvested Profits from this Business* | 1.89 |
| *Others* 1.67 | |

## VI. CONCLUSIONS

The main finding of the study are summarised below:

(i) The small-scale manufacturing industries are relatively less capital intensive. The capital-labour ratio in these enterprises is only 20 percent of that in the large-scale manufacturing sector.

(ii) Productivity of capital in small-scale industries is two and a half times the productivity of capital in the large-scale manufacturing industries. On the other hand, productivity of labour is only 46 percent of that in the large-scale enterprises. However, total factor productivity in the small-scale industries is 5 percent higher than that in the large-scale industries.

(iii) The main source of higher productivity in the small-scale industry has been the longer hours of work. The workers in the small-scale industries work for 57 hours per week while the workers in large-scale units work for 40 to 48 hours per week. If the hours per week are standardised, there is hardly any difference in the productivity of the small and large enterprises.

(iv) There are constant returns to scale in small-scale industries implying the divisibility of technology and processes. It also implies that the size of the firm is indeterminate and as such there was no technological constraint on the expansion of the small enterprises. Extraneous factors are responsible for their lack of growth.

(v) Some firms could not expand because they were inefficient and they are only surviving by evading and avoiding taxes. In other cases, a number of constraints have not allowed the small firms to grow. Lack of finances is the most stringent constraint followed by inadequate demand, lack of the requisite technology etc.

(vi) Since formal credit accounts for only 10 percent of investment and the availability of loans from other sources is limited, the small firms cannot expand and have failed to graduate into large firms.

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