

**ZENITH INTERNATIONAL JOURNAL OF BUSINESS  
 ECONOMICS & MANAGEMENT RESEARCH**

**ZIJBEMR, VOL.4 ISSUE 4, APRIL 2014, ISSN 2249- 8826**

| <b>SR. NO.</b> | <b>CONTENT PAGE</b>   | <b>PAGE NO.</b> |
|----------------|---|-----------------|
| 1.             | <b>ROLE OF FDI IN INDIAN BANKING SECTOR</b><br>S.SUNITHA  | 1-6             |
| 2.             | <b>DETERMINANTS OF INDUSTRIAL PROFITABILITY<br/>BEFORE AND AFTER LIBERALIZATION IN TAMIL NADU -<br/>AN APPLICATION OF DISCRIMINANT FUNCTION</b><br>R.S.SRI POORNI, DR.M.MANONMANI   | 7-11            |
| 3.             | <b>THE INFLUENCE OF DEBT FINANCING ON ASSET USAGE<br/>– AN EMPIRICAL STUDY OF INDIAN’S CEMENT<br/>MANUFACTURING</b><br>DR. DHANUSKODI RENGASAMY                                     | 12-20           |
| 4.             | <b>SYNCHRONIZATION OF EMERGING TRENDS IN<br/>HOSPITALITY INDUSTRY AND SERVICE QUALITY</b><br>PROF. SAMEER KORANNE, DR. SUNEETA BORKAR   | 21-26           |
| 5.             | <b>AN ANALYSIS OF INDIA’S TRADE WITH OTHER BRICS<br/>NATIONS</b><br>SEEMA   | 27-33           |
| 6.             | <b>CORPORATE GOVERNANCE AND FINANCIAL<br/>PERFORMANCE OF MICROFINANCE INSTITUTIONS -<br/>EVIDENCE FROM EMPIRICAL STUDIES</b><br>HAILESLASIE TADELE                                  | 34-41           |
| 7.             | <b>IMPACT OF PERCEIVED JUSTICE ON CUSTOMER<br/>SATISFACTION WITH COMPLAINT HANDLING IN<br/>CONTEXT OF ELECTRONIC GOODS AND SERVICES</b><br>DR. ABHILASHA SHARMA, DR. SUNITA DWIVEDI | 42-53           |

## DETERMINANTS OF INDUSTRIAL PROFITABILITY BEFORE AND AFTER LIBERALIZATION IN TAMIL NADU - AN APPLICATION OF DISCRIMINANT FUNCTION

R.S.SRI POORNI\*; DR.M.MANONMANI\*\*

\*PHD RESEARCH SCHOLAR IN ECONOMICS,  
AVINASHILINGAM INSTITUTE FOR HOMESCIENCE AND HIGHER EDUCATION FOR WOMEN,  
COIMBATORE.

\*\*PROFESSOR IN ECONOMICS,  
AVINASHILINGAM INSTITUTE FOR HOMESCIENCE AND HIGHER EDUCATION FOR WOMEN,  
COIMBATORE.

---

### ABSTRACT

In this paper an attempt is made to analyse the major determinants of profitability in the aggregate manufacturing sector of Tamil Nadu between the pre-liberalization period (1978-80 to 1990-91) and post-liberalization period (1991-92 to 2011-2012). This study was based on ASI data. The major findings of the study were that excepting lagged labour productivity, the other variables such as lagged profit level and number of workers were capable to distinguish pre and post liberalization period profit level. The variable lagged capital productivity having negative sign implied that this variable acted as a suppressed variable. Lagged labour productivity was the first dominant factor to determine profit level of both the periods. It is concluded that in order to improve the profit level of the manufacturing sector of the state of Tamil Nadu in future, it can rely more on the previous year labour productivity.

**KEY WORDS:** Major determinants of profitability, manufacturing sector of Tamil Nadu, ASI data.

---

Manufacturing is the production of merchandise for use or sale using labor and machines, tools, chemical and biological processing, or formulation. The term may refer to a range of human activity, from handicraft to high tech, but is most commonly applied to industrial production, in which raw materials are transformed into finished goods on a large scale. Such finished goods may be used for manufacturing other, more complex products, such as aircraft, household appliances or automobiles, or sold to wholesalers, who in turn sell them to retailers, who then sell them to end users – the "consumers".

Manufacturing takes turns under all types of economic systems. In a free market economy, manufacturing is usually directed toward the mass production of products for sale to consumers at a profit. In a collectivist economy, manufacturing is more frequently directed by the state to supply a centrally planned economy. In mixed market economies, manufacturing occurs under some degree of government regulation.

According to a study by global management consulting firm McKinsey and Company, the manufacturing sector in India could grow six-fold to US\$ 1 trillion, by 2025. Up to 90 million domestic jobs could be created by that time, with the sector generating about 25–30 per cent of the country's gross domestic product (GDP). India's rapidly expanding economy gives domestic entrepreneurs and international players vast opportunities to invest and grow.

India's manufacturing sector is vital for its economic progress. Its contribution to the GDP is 16 per cent, with the potential to grow more. The government has realized the importance of this sector to the country's industrial development, and has taken a number of proactive steps to further enhance the industry. Modern manufacturing includes all intermediate processes required for the production and integration of a product's components. Some industries, such as semiconductor and steel manufacturers use the term fabrication instead.

- In its earliest form, manufacturing was usually carried out by a single skilled artisan with assistants. Training was by apprenticeship. In much of the pre-industrial world, the guild system protected the privileges and trade secrets of urban artisans.
- Before the Industrial Revolution, most manufacturing occurred in rural areas, where household-based manufacturing served as a supplemental subsistence strategy to agriculture (and continues to do so in places). Entrepreneurs organized a number of manufacturing households into a single enterprise through the putting-out system.

Profitability analysis is a component of enterprise resource planning (ERP) that allows administrators to forecast the profitability of a proposal or optimize the profitability of an existing project. Profitability analysis can anticipate sales and profit potential specific to aspects of the market such as customer age groups, geographic regions, or product types. Profit measurements that can be analyzed include manufacturing margin, contribution margin, gross profit, throughput and net income.

Profitability analysis can help key personnel in an enterprise to:

- Identify the most and least profitable clients.
- Identify the most and least profitable products or services.
- Discover which sources of information offer the most reliable facts.
- Optimize responses to changing customer needs.
- Evolve the product mix to maximize profits in the medium and long term.
- Isolate and remedy the causes of decreasing profit margins.

### Methodology

The study was undertaken for the manufacturing industries in Tamil Nadu. The reference period chosen for the study covers both pre and post liberalization period. Pre liberalization period covers between 1979-80 and 1990-91 and post liberalization period between 1991-92 and 2011-12. The data used for the study such as profit, fixed capital, gross output and number of workers were collected from secondary sources. They were collected from the sources such as Annual Survey of Industries and Economic Survey.

Lagged Labour productivity (**LLP**) was measured as a ratio of gross output divided by number of workers. Lagged Capital Productivity (**LCP**) was measured as a ratio of gross output divided by fixed capital. To identify the profitability of manufacturing sector in Tamil Nadu between pre and post liberalization period, the discriminant analysis was applied by taking profit as dependent variable and Lagged profit(LP), Lagged capital productivity(LCP), Lagged labour productivity(LLP) and Number of workers(NW) as independent variables. Selected variables were used to find out relative contribution in discriminating the groups. Wilk's lambda and 'F' value were used to find out whether the means of the two periods differ significantly. Using canonical discriminant function, coefficient of selected variables in discriminating the groups was found out. The functional form is represented as follows.

$$Z = L1X1+L2X2+L3X3+L4X4$$

Z = Discriminant total scores for pre and post-liberalization period (0 for pre-liberalization period and 1 post- liberalization period)

. Xi = Lagged profit (LP), Lagged capital productivity (LCP), Lagged labour productivity(LLP) and Number of workers(NW).

### Results and discussion

The first step in the discriminant analysis was the estimation of univariate F-statistic and Wilks lamda. If the Wilks lamda approaches 0, it indicates significant mean difference between the pre and post liberalization period. If it approaches 1, it indicates absence of mean difference. Table - 1 shows the estimated F-value and Wilks lamda.

**Table-1**  
**WILKS LAMDA AND UNIVARIATE F- STATISTICS**  
**FOR PROFITABILITY**

| Variables                        | Wilks lamda | F- value | sig  |
|----------------------------------|-------------|----------|------|
| Lagged profit(LP)                | .576**      | 22.790   | .000 |
| Lagged capital productivity(LCP) | 1.000       | .003     | .960 |
| Lagged labour productivity(LLP)  | .444**      | 38.879   | .000 |
| No.of.workers(NW)                | .606**      | 20.161   | .000 |

Sources: Calculations are based on ASI data

Note: \*\* significant at 5% level.

It was very clear that the Wilks lamda for lagged profit(LP),lagged labour productivity(LLP) and number of workers(NW) were less than one but lagged capital productivity was equal to one. Hence the above said factors excepting lagged capital productivity (LCP) were capable to distinguish the pre and post liberalization period profitability.

### CANONICAL DISCRIMINANT CO-EFFICIENTS

To identify the significant factors determining the level of profit canonical discriminant co-efficients were calculated. The magnitude of canonical discriminant coefficients indicates the degree of contribution towards the pre and post liberalization period which is presented in table-2

**TABLE-2**  
**CANONICAL DISCRIMINANT FUNCTION FOR**  
**PROFITABILITY**

| Variables                        | Canonical discriminant coefficients | Ranks |
|----------------------------------|-------------------------------------|-------|
| Lagged profit(LP)                | .000                                | 2     |
| Lagged capital productivity(LCP) | -.029                               | 4     |
| Lagged labour productivity(LLP)  | .004                                | 1     |
| No.of.workers(NW)                | -.017                               | 3     |

Sources: Calculations are based on ASI data

Based on the standardized canonical discriminant function which represented a linear composition of the data variability the group variability was estimated as follows.  
 $Z(P) = .000LP - 0.29LCP + .004LLP - .017NW$

In the above function the variables such as lagged profit(LP), lagged labour productivity(LLP) and number of workers(NW) had positive signs indicating that these variables had higher discriminating power between pre and post liberalization period. In other words these variables distinguished level of profitability between pre and post liberalization period. The variable lagged capital productivity(LCP) having negative sign implied that this variable acted as a suppressor variables.

**RELATIVE CONTRIBUTION OF VARIABLES**

The relative contribution of selected independent variables to level of profit were calculated and presented in table -3.

**TABLE-3**  
**RELATIVE CONTRIBUTION OF VARIABLES**  
**FOR PROFITABILITY**

| Variables                        | Relative contribution |
|----------------------------------|-----------------------|
| Lagged profit(LP)                | 0.00                  |
| Lagged capital productivity(LCP) | -0.87                 |
| Lagged labour productivity(LLP)  | 135.57                |
| No.of.workers(NW)                | -34.70                |
| Total percentage                 | 100                   |

Sources: Calculations are based on ASI data

Lagged labour productivity(LLP)was the first dominant factor to determine the pre and post liberalization period profit level and it alone contributed 135.57 percent. The lagged profit(LP) contributed 0.00 percent, lagged capital productivity(LCP) and lagged labour productivity(LLP) contributed negatively.

### **Conclusion**

Industrial development is believed to hold the key to rapid and sustained economic growth in Tamil Nadu. While this was well-recognized by policy-makers at an early stage as reflected in various planning documents, the approach to the problem has changed considerably over time. The issue of sustainable growth raises questions about what policies can help to achieve this objective. Focusing on profitability of manufacturing sector would be the issue for encouraging further growth of the sector.

### **References**

1. Alessandro Arrighetti and Andrea Lasagni(2013), "Assessing the determinants of high-growth manufacturing firm in Italy", *International Journal of the Economics of Business*, vol.20, no.2, pp.245-267
  2. Rajash Rasiah and Fathimath Rasheed(2013), "Firm size, export intensity, and technological capabilities in sri Lankan manufacturing firms: an evolutionary analysis, *Innovation and development*, vol.3, no.1, pp.89-101.
- [www.ibef.org](http://www.ibef.org)
  - [www.techtarget.com](http://www.techtarget.com)