Financial Performance of Foreign Direct Invested Pharmaceutical Units in India

K. Srinivasan (Corresponding Author)
Ph. D Scholar, Department of Commerce (SOM),
Pondicherry Central University
Kalapet, Puducherry - 605 014
India
Email: ksrinivasan1979@gmail.com
ksrinivasan.econometrics@yahoo.com
Tel: 0413-2654694; +91-9488818116

Malabika Deo
Professor & Head of Commerce (SOM),
Pondicherry Central University
Kalapet, Puducherry 605 014
India
Email: deo_malavika@yahoo.co.in
Tel: 0413-2654694; 0413-2340755 & +91-9442140745

P. Srinivasan
Ph.D Scholar, Department of Economics (SOM),
Pondicherry Central University
Kalapet, Pondicherry-605 014
India
E-mail: srinivas_eco@yahoo.co.in
Tel: +91-9944967423

Abstract

This paper examines the performance of select Foreign Direct Invested (FDI) assisted pharmaceutical units in India for the period from 1st April 1999 to 31st March 2008. The dataset has been retrieved from CMIE Prowess database and Organization of Pharmaceuticals Producers of India (OPPI) for 23 FDI assisted pharmaceutical units and evaluated through the following ratios Capital Structure Ratios, Liquidity Ratios, Profitability Ratios, Du Pont Analysis and Return on Investment. Our findings suggest, that the capital has been efficiently used in gearing profits, but there was a slight decline in return on equity due to over utilization of outsider's capital it was the major reason for showing negative effects. But, all the sample units show a galloping trend during the study period. The liquidity position and short-term solvency positions have improved, because of this the sales have increased, the leverage effects was not found favorable for certain units. Finally, our study suggests that the mark of FDI assisted pharmaceutical units for different ratios report a positive direction throughout the study and provoked the strength of Indian economy for the future.

Keywords: FDI, Pharmaceutical Units, Leverage Effect, Performance Ratios, Du Pont Analysis

1. Introduction

The tremendous growth of Foreign Direct Investment (FDI) flows is well documented in literature for both developing and developed countries. Over the last couple of decade foreign direct investment have grown at least twice as rapidly as trade Lipsey (2000). As there is shortage of capital in the developed countries, which need capital for their development process, the marginal productivity of capital is higher in developing countries. On the other hand, investors in developed world seek high returns for their capital. Hence there is a mutual benefit in the international movement of capital. In the current international economic setup, the countries progress towards globalization, liberalization and private foreign capital is indispensable. Loans (commercial bank lending's and bonds issued by companies) and Equities (direct and portfolio equity investment), are the two components of private foreign capital, the latter is the predominant and largest components of private capital inflows in most of the countries. Markusen and Venables (1995) studied that multinational should adopt a general-equilibrium trade-theoretic view for Foreign Direct Investment.

The development of foreign private capital are remarkable, but it gained importance only after the unmanageable balance of payments deficits occurred in most of the developing countries after the oil crisis in late seventies; and with the advent of debt crisis in Latin American countries in eighties. The Official Development Finance (ODF) like the World Bank, International Monetary Fund and United Nations which grants loans on concessional terms for individual governments, multilateral institutions and developing countries to find an alternative strategy for reduction in ODF over time. The importance on non-debt creating, long-term private capital to overcome the capital crunch situation of developed countries was realized and FDI which falls into this category was given due importance. Thus the foreign direct investment

witnessed dynamic changes over the years and attracted the global investor's attention towards investing in developing countries like Russia, China, India, Indonesia etc.,

The present study is specifically focuses on pharma industry in the Indian scenario and examines the various measures of financial performance and analyzes their profitability position. The remainder of the paper is structured as follows. Next section presents an overview of pharmaceutical industry. Section 3 deals with earlier literature review pertaining to FDI. Section 4 presents the data and methodology, Section 5 examines the empirical analysis and discussion of FDI assisted pharmaceutical units. Finally, Section 6 summaries and concludes the paper.

2. Overview of Pharmaceutical Industry:

Intercontinental Medical Statistics (IMS) Health has broadly divided the world pharmaceutical market into six major blocks, comprising North America, European Union, Central & Eastern Europe, Latin America, Japan and Asia (excluding Japan), Australia, & Africa.

USA is the largest drug market in world. The other large drug markets are Europe and Japan, each pharmaceutical market has its own unique characteristics in terms of structure of industry, channels of distribution, protection of patents, funding of healthcare costs, etc. The US generic market is nearly 5-6 times of the Indian pharmaceuticals market. This attracts a lot of attention and investment in the Indian Industry to cater this market. On account of this universal assumption the US market is the most regulated market as compared to the others and may be considered the toughest market to succeed for any company. If a company manages to establish

its presence in the US market, it is widely believed that accessing other markets would not be a difficult task.

The Indian pharmaceutical industry had 2000 players in the domestic market before 1970 and it was largely dominated by multinational companies (MNCs). The Government of India has introduced two landmark regulations in 1970, viz., the Indian Patent Act and the Drug Price Control Order (DPCO). The Indian Patent Act, 1970 was introduced to encourage domestic producers to manufacture drugs and ensure self-sufficiency in medicines. The DPCO governed the prices of all bulk drugs and formulations to ensure the widespread availability of medicines at reasonable prices. The introduction of these two regulations and incentives available to small-scale industries (SSIs) led the share of SSIs increasing, due to low entry barriers. Further, owing to introduction of FERA 1974, which required all MNCs to dilute their equity holding, the market share of MNCs declined during 1970-79. During the period 1979 to 1987, the production of bulk drugs by Indian players increased due to a surge in exports. The market share of MNCs continued to decline. In 1991 there was a major turning point for MNCs due to the liberalization of Indian Economy.

As part of the reforms process, tariff barriers were lowered and FERA was relaxed. This restored MNC confidence to a certain extent and encouraged FDI in the domestic pharmaceutical industry. During the period 1987 to 2001, the Indian pharmaceutical industry grew faster at a Cumulative Abnormal Growth Rate (CAGR) of 15-16 per cent with bulk drug production surging due to high export demands. In 1995, the government again amended the DPCO and brought down the number of drugs under price control to 74%. Also, the Indian govt. as a member of WTO, agreed in 1995 to adhere to the product patent regime from 2007.

3. Brief Literature Review:

To have a better understanding about the performance of select Foreign Direct Investment (FDI) some of the research studies conducted by matured authors of recent origin. Blomstrom and Zejan (1991), Wheeler and Mody (1992), Serven and Soliman (1992), Morck and Young (1992), Burgers et al (1993) present evidence about the general aspects of Foreign Direct Investment and reported a optimistic sign for the home country production.

There are few studies experienced the positive effects of foreign direct investment in the developing countries. Lim (1976) pointed out the foreign-owned and controlled companies have higher capital utilization, because of the technological economies that come with the large size and operation of these firms. Nayyar (1978) stated the conflict between the capital and labour within the industrialized countries. Kumar (1985), Kokko (1994), Henrik Hansen and John Rand (2006) has favored new technological transfers and adoption of new technology for the FDI country. Schneider & Frey (1985), Tsai (1991) and Noorbaksh et al. (2001) have studied the determinant of FDI in developing countries has performed the best. Fry (1993) found that FDI has increased the rate of economic growth in the absence of financial repression and trade distortion. Muscatelli and Stevenson (1994) study confirms that there is a significant role for cross-price effects in Least Developed Countries and shows there is efficient gains for the group.

In contrast, limited research is available on sector – wise foreign direct investment performance in India. Most of the studies related to overview of FDI on home country production, determinants of FDI and its spillover effect. Only a few studies, has made an attempt towards sector-wise performance. Mohinder Kaura and Balasubramanian (1982), Muneeswari (2000) studied the drugs and pharmaceutical industry in India continued to maintain steady

growth with foreign collaboration. Sharma Kishor (2000) has assessed the effects of FDI on manufacturing export performance. Atherye and Kapur (2001) and John Child et al. (2003) studied the performance of multinational and domestic firms in India and gave clear edge over domestic firms. Ike Mathur Manohar Singh & Kimberly C. Gleason (2004) has explained the degree of multinational diversification is strongly related to superior financial performance and the developing economies continue to show dramatic growth. Moreover, this study will fill the gap on sector wise performance and paved the way for future researchers.

4. Data and Methodology:

The study is based on the secondary data collected from different sources for the analysis. Data set has been retrieved from Organization of Pharmaceuticals Producers of India (OPPI) and it is supported by the annual reports of the companies from CMIE Prowess database. The data used in the study consist of 23 Foreign Direct Invested pharmaceutical companies with capital as the base during the period from 1st April 1999 to 31st March 2008.

The following decision making parameters such as Capital Structure Ratios, Liquidity Ratios, Profitability Ratios, Ratios of Du Pont Analysis and Return on Investment was calculated for the purpose of analysis. The computed data is analyzed with the help of Mean, Standard Deviation, Co-efficient of Variation and Linear Growth Rate was draw for the valid conclusion.

Evaluating Measures:

Composition of Capital Structure: Capital Structure refers to the way a corporation finances itself through some combination of equities, bonds, and loans etc., A capital structure looks for opportunities created by the differential pricing of different instruments issued by the same

corporation. The long term financial strength measures in terms of its ability to pay the interest regularly as well as repay the installment of the principal on due dates from can be examined by using leverage of capital structure ratios. Debt equity ratio and Debt to asset ratios was worked out to explore the financial soundness of the firm.

Operating Performance of Managing Funds: Liquidity ratios seem to have predictive ability, particularly in signaling strengths and weakness of a firm in utilization of funds. These ratios are also termed as 'working capital ratio' or 'short term solvency ratios'. An enterprise must have adequate working capital to run its day-to-day operations. Inadequacy of working capital may bring the entire business operation to a grinding halt because of inability of the enterprises to pay for wages, materials and other regular expenses. Current ratio and Quick ratios are used to examine the liquidity position of the firm.

Overall Profitability: Profitability is an indicator of the efficiency with which the operations of the business are carried on. Poor operational performance may indicate poor sales and hence poor profits. A lower profitability may arise due to the lack of control over the expenses. Bankers, financial institutions and other creditors look at the profitability ratios as an indicator whether or not the firm earns substantially more than it pays interest for the use of borrowed funds and whether the ultimate repayment of their debt appears reasonably certain. Owners are interested to know the profitability as it indicates the return that they can get on their investments.

Overall Efficiency (Du Pont Analysis): Return on Investment (ROE) represents the earning power of the company. ROE depends on two ratios: (a) Net Profit ratios, and (b) Capital Turnover Ratios. A change in any of these ratios will change the firm's earning power. These

two ratios are affected by many factors. A change in any of these factors will change these ratios also. This chart is known as the Du Pont Control Chart since it was first used by Du Pont Company of USA.

Here the return on capital employed is affected by a number of factors. Any change in these factors will affect the return on capital employed. The chart helps the management in concentrating attention on different forces affecting profit. An increase in profit can be achieved either more effective use of capital which will result in a higher turnover ratios or better sales efforts which will result in a higher turnover ratio or better sales efforts which will result in a higher net profit ratio. The same rate of return can be obtained either by a low net profit ratio but a higher turnover ratio or low turnover ratio but a higher net profit ratio.

Return on Investment (ROI): For a given use of money in an enterprise, the ROI (return on investment) is how much profit or cost saving is realized. An ROI calculation is sometimes used along with other approaches to develop a business case for a given proposal. The overall ROI for an enterprise is sometimes used as a way to grade how well a company is managed.

It has been observed that although a high profit margin is a test of better performance a low margin does not necessarily imply a lower rate of return on investments of a form has higher investment/assets turnovers. Therefore, the over-all operating efficiency of a firm can be assessed on the basis of a combination of the investment (RIO) ratio. The earning power of a firm may be defined as the over-all profitability of an enterprise. In reality, most organizations use one or more "financial metrics" which they refer to individually or collectively as "ROI".

5. Empirical Analysis & Discussion:

Table: 1 presents the Capital Structure Ratios of Foreign Direct invested pharmaceutical units for the period from 1999 to 2008 by using two methods such as Debt to Equity Ratios and Debt to Asset Ratios. In Debt to equity ratio the Linear Growth Rate (LGR) of FDI assisted pharmaceutical units with statistically significant for most of the units. In other ratios the LGR stood rational at 0.05 and 0.01 for twelve units with statistically significant. But the remaining units showed an insignificant effect during the study period. From Table: 2 envisage the liquidity position of the FDI assisted pharmaceutical units. Liquidity ratio was divided into current ratio and quick ratios. The LGR of current ratio and quick ratio has shown almost significant for all the units. This suggested the financial position for all the units with a positive sign.

The profitability ratios for FDI assisted pharmaceutical units have been shown in Table 3. Perusal from the above table indicates the trends and growth pattern of Gross Profit margin, Earning Power and Return on Assets has been analyzed. In Gross profit margin the mean and linear growth rate has shown significant effect. But, the earning power ratio and return on assets for the above units was predicted with weak position. This predicted the units have not properly utilized the earning power and assets to reap the fruits of benefits. It is evident from Table: 4 the trends and growth pattern of FDI assisted Pharmaceutical Units. The Du Pont Analysis has been broken into three disciplines; Net Profit margin ratio, Asset Turnover ratios and Leverage Multiplier ratios. Perusal from the table Net profit margin was performed well with significant effect. In asset turnover ratios the means return shows a minimum level, but in linear growth rate it indicated with negative line for the periods. Finally, the Leverage multiplier was not favorable for the units; it is due to over utilization of the outsider's capitals for gearing profits.

Table 5 envisages the trends and growth of Return on equity (Based on Du Pont Analysis) for FDI assisted Pharmaceutical units. The table indicates mean return of Sun Pharma stood higher at 28.37 per cent. The standard deviation indicates a huge volatile for Matrix laboratories and lowers for Wyeth Ltd. In Coefficient of variation Matrix Laboratories and Aurobindo Pharma predicted with 410.74 and 14.01 times respectively. The last row refers to Linear Growth rate of FDI assisted pharmaceutical units with statistically insignificant for majority of the units during the study period.

Table: 6 show the overall performance of FDI assisted pharmaceutical units for the period from 1999 to 2008. Perusal from the table indicates the linear growth rate shown an inexperienced negative trend for Capital Structure ratios. The liquidity position of the Company was good for the period. As far as the profitability ratios, the Gross profit Margin suggested a healthy sign. Earning power and Return on assets has been scaled up. The results of Profitability Ratios predicted a robust for the overall Pharmaceuticals units. The components of ROE, has been used in Du Pont Analysis, Net profit margin (NPM), Asset Turnover Ratio (ATR) and Leverage Multiplier (LM), was experienced and shown a positive movement, but only in the case of ATR, the trend has been statistically significant. Again, this reveals the improper use of assets by the units. Further, return on equity, which can be considered as proxy for fund position of the company with statistically significant during the period.

6. Summary and Conclusion:

This study focuses on performance of selected Foreign Direct Invested pharmaceutical units for the period 1st April 1999 to 31st March 2008 and it is evaluated through various parameters. During the period of study 23 companies has been taken for the purpose of analysis.

From the above analysis, it is found that most of the units have performed well and shown positive growth. But, the remaining units have proved with downward trend. But this insignificant effect is not constant because most of the units was been lagging due to improper utilization of the funds. This can be eradicated when proper measures are adopted by the lagging concerns.

The findings of the study suggest the capital has been efficiently used in gearing profits. But, there was a slight decline in return on equity due to over utilization of outsider's fund; it was the major reason for showing negative effects. The liquidity position and short-term solvency positions have improved. The long-term debts have decreased because of this sales have escalated, the leverages effects are not found favourable. With reference to mark financial evaluation of the FDI assisted units the different ratios report a positive direction all through the study period. Finally, the structural changes in the present economic policy and out door investment will enhance the growth rate of Indian economy in the future.

References:

Athreye S & Kapur (2001), "Private Foreign Investment in India.Pain or Panacea?" *World Economy*, Vol: 24, Pp.399-424.

Blomstrom, Magnus & Mario Zejan (1991), "Why do Multinationals firms seek out Joint Ventures*?" Journal of International development*, Vol: 3, Pp. 53 -63.

Fry, Maxwell. J (1993), "Foreign Direct Investment in a Macro Economic Framework – Finance, Efficiency, Incentives and Distortions" World Bank, *Policy Research Working paper*, No. 1141, Washington D.C.

Haishun Sun (2001), "Foreign Direct Investment and Regional Export Performance in China" *Journal of Regional Science,* Vol: 41 Pp. 317-336.

Henrik Hansen, John Rand (2006), "On the Causal Links between FDI and Growth in Developing Countries" *World Economy,* Vol: 29 Pp. 21.

Ike Mathur, Manohar Singh, Kimberly C. Gleason (2004), "Multinational Diversification and Corporate Performance: Evidence from European Firms" *European Financial Management*, Vol: 10, Pp. 439-464.

Ito, Kiyohiko and Vladimir Pucik (1993), "R&D spending, domestic competition and export performance of Japanese manufacturing Firms" *Strategic Management Journal*, Vol: 14. Pp. 275-332.

John Child & Yanni Yan (2003), "Predicting the Performance of International Joint Ventures: An Investigation in China" *Journal of Management Studies*, Vol: 40, Pp 283-320.

John K. Mullen, Martin Williams (2005), "Foreign Direct Investment and Regional Economic Performance" *Kyklos*, Vol: 58, Pp. 265-282.

Kogut, Bruce and Seajin Chang (1991), "Technological Capabilities and Japanese Foreign Direct Investment in the United States" *Review of Economics and Statistics*, Pp. 401-413.

Kokko, Ari (1994), "Technology, Market characteristics and Spillovers" *Journal of Development Economics*, Vol: 43. Pp. 279-293.

Kumar, N. (1985), "Cost of Technology Imports: The Indian Experience" *Economic and Political Weekly*, Vol: 20. No. 5, Pp. 103-114.

Lim, David (1976), "Capital utilization of local band foreign establishments in Malaysian Manufacturing" *Review of Economics and Statistics* (Nov), Pp. 209-217.

Lipsey. R. E (2000), "Inward FDI and Economic Growth in Developing Countries" *The Transnational Corporations,* Vol: 9 No: 1.

Markusen J. R. and Venables (1995), "General-Equilibrium Approaches to the Multinational Firm: A Review of Theory and Evidence," *NBER Working Paper,* No. 8334.

Morck, Randailand Bernard Young (1992), "Internalization: An Event Study Test*" Journal of International Economics,* Vol. 33. Pp 41-56.

Muscatelli V.A. & A.A. Stevenson (1994), "Intra-NIE Competition in Exports of Manufactures" *Journal of International Economics,* Vol. 37, Pp. 29-47.

Nayyar, Deepak (1978), "Transnational Corporation and Manufactured Exports from the poor countries" *The Economic Journal,* Pp. 59-84.

Nigel Pain & Katharine Wakelin (1998), "Export Performance and the Role of Foreign Direct Investment" *The Manchester School,* Vol: 66, Pp. 62-88.

Pradeep.K.Singh (2003), "Competitive advantage of India for Conducting Clinical Trails" *Indian Pharma Industry Issues and Options,* Pp. 273-274.

Robin M. Leichenko & Rodney A. Erickson (1997), "Foreign Direct Investment and State Export Performance" *Journal of Regional Science,* Vol: 37, Pp. 307.

Robert Tancer (1999), "Investing in the Pharmaceutical Industry" *The American School of International Management,* Pp. 1-15.

Schneider, F. and Frey, B. (1985), "Economic and Political Determinants of Foreign Direct Investment" *World Development,* Vol: 13, Pp. 161-174.

Serven, Luis and Andres Soliman (1992), "Private investment and macro economic adjustment – A Survey" *World Bank Research Observer,* Vol: 7, Pp. 95-114.

Sharma, K. (2000), "Export Growth in India: Has FDI Played a Role?" *Economic Growth Centre Discussion Paper,* No. 816, Yale University

Tsai, Pan-Long (1991), "Determinants of FDI in Taiwan: an Alternative Approach with Time-Series data" *World Development,* Vol: 14, Pp.61-75.

Wheeler Avid & Ashoka Mody (1992), "International Investment location Decisions: The case of U.S firms" *Journal of International Economics,* Vol: 33 Pp. 57-76.

Table: 1 Capital Structure Ratios of Selected FDI assisted Pharmaceutical Units

Sl. No:	Name of the Company	Capital structure Ratios							
		Debt to Equity Ratios				Debt to Asset Ratio			
		Mean	S.D	CV	LGR	Mean	S.D	CV	LGR
1.	Aurobindo Pharma	0.92	0.13	14.01	-.002 -(0.11)	0.37	0.03	9.07	.01 (2.09)
2.	Aventis Pharma	0.36	0.30	82.50	-.10** -(5.98)	.17	.12	72.08	-.04** -(7.66)
3.	Bal Pharma Ltd.	0.86	0.40	46.24	.13** (8.67)	0.32	0.07	21.70	.02** (3.67)
4.	Cadila Healthcare Ltd.	0.91	0.52	56065	-.11* -(2.33)	0.31	0.11	35.04	-.01 -(0.79)
5.	Cipla Ltd.	0.12	0.13	114.66	-.01 -(1.01)	0.07	0.07	104.43	-.01 -(1.06)
6.	Dr.Reddy,s Laboratories	0.21	0.21	101.74	-.01 -(0.56)	0.13	0.11	85.82	-.01 -(0.86)
7.	Glaxo-Smitline Pharma	0.05	0.06	113.89	-.02** -(3.97)	0.03	0.04	111.57	-.1** -(4.25)
8.	Glenmark Pharma	0.53	0.48	90.95	.11* (2.50)	0.23	0.16	68.74	.03 (2.14)
9.	IPCA Laboratories	0.68	0.13	18.68	.01 (0.52)	0.33	0.04	11.21	.0 -(0.58)
10.	Lupin Ltd.	1.37	0.35	25.58	-.02 -(0.55)	0.47	0.08	16.38	-.02* -(2.69)
11.	Marksans Pharma	1.47	1.12	76.41	.26* (2.69)	0.39	0.16	40.57	.04* (2.98)
12.	Matrix Laboratories	0.81	0.52	64.70	.05 (0.81)	0.28	0.12	41.18	0 (0.27)
13.	Nicholas Piramal India	0.70	0.36	51.72	.02 (0.38)	0.29	0.09	31.32	.0 -(0.37)
14.	Orchid Chemical Pharm	1.30	0.53	40.42	.13* (3.05)	0.46	0.09	18.55	.02* (2.35)
15.	Panacea Biotech Ltd.	0.97	0.41	42.75	.13** (7.01)	0.35	0.08	24.06	.02* (2.48)
16.	Pfizer Ltd.	0.08	0.17	204.89	-.04*- (2.62)	0.04	0.08	198.70	-.02* -(2.59)
17.	Ranbaxy Laboratories	0.21	0.21	98.73	-.07** -(6.81)	0.13	0.12	93.06	-.04** -(8.01)
18.	Shasun Chemicals	1.20	0.51	42.72	-.15** -(5.95)	0.40	0.11	28.66	-.04** -(8.24)
19.	Sun Pharma	0.30	0.48	162.87	.08 (1.72)	0.14	0.16	110.06	.02 (1.46)
20.	Torrent Pharma	0.77	0.70	90.60	-.19** -(4.14)	0.27	0.20	75.82	-.05** -(3.63)
21.	Unichem Laboratories	0.53	0.23	42.11	-.05* -(2.41)	0.26	.09	33.92	-.02* -(2.58)
23.	Wyeth Ltd.	0.03	0.03	96.96	-.01* -(3.31)	0.02	0.02	93.98	0* -(3.35)

SD – Standard Deviation; CV – Coefficient of Variation; LGR – Linear Growth Rate

Figures in parenthesis shows‘t’ values for LGRs. *Significant at 5% level. **Significant at 1% level

Table: 2 Liquidity Ratios of Selected FDI assisted Pharmaceutical Units

Sl. No:	Name of the Company	Liquidity Ratios							
		Current Ratios				Quick Ratios			
		Mean	S.D	CV	LGR	Mean	S.D	CV	LGR
1.	Aurobindo Pharma	3.83	1.11	28.98	.34** (6.62)	2.72	1.00	36.89	.30** (6.66)
2.	Aventis Pharma	2.60	0.87	33.36	.27** (4.20)	1.73	0.85	49.32	.29** (6.33)
3.	Bal Pharma Ltd.	3.89	0.85	21.75	-.16 -(2.01)	2.29	0.75	32.68	-.17* -(2.77)
4.	Cadila Healthcare Ltd.	4.30	2.06	48.00	.37 (1.82)	3.31	2.01	60.65	.35 (1.75)
5.	Cipla Ltd.	5.87	1.84	31.31	-.52** -(4.85)	3.88	1.41	36.46	-.39** -(4.20)
6.	Dr.Reddy,s Laboratories	8.10	1.36	16.77	-.17 -(1.15)	6.81	1.16	17.03	-.07 -(0.52)
7.	Glaxo-Smitline Pharma	5.76	2.58	44.80	.79** (7.00)	4.62	2.72	58.80	.83** (6.82)
8.	Glenmark Pharma	5.29	3.02	57.04	.42 (1.31)	4.19	2.58	61.63	.37 (1.35)
9.	IPCA Laboratories	4.80	0.47	9.85	0 -(0.09)	2.77	0.42	15.28	.05 (1.06)
10.	Lupin Ltd.	4.46	1.06	23.85	-07 -(0.57)	3.67	1.15	31.31	-.13 -(1.07)
11.	Marksans Pharma	2.18	0.98	44.98	-.10 -(0.89)	1.32	0.65	49.62	-.09 -(1.22)
12.	Matrix Laboratories	2.95	1.03	35.03	-.09 -(1.89)	1.62	0.81	49.93	-.09 -(1.05)
13.	Nicholas Piramal India	4.07	1.01	24.92	-.03 -(0.23)	3.10	0.95	30.69	-.06 -(0.55)
14.	Orchid Chemical Pharm	4.36	1.48	33.85	.16 (.99)	2.55	1.13	44.31	.06 (0.45)
15.	Panacea Biotech Ltd.	5.95	2.06	34.68	.30 (1.39)	3.06	1.14	37.20	.02 (0.19)
16.	Pfizer Ltd.	3.33	0.61	18.42	.15** (3.36)	2.48	0.67	27.02	.19** (5.22)
17.	Ranbaxy Laboratories	5.87	2.48	42.32	-.73** -(3.63)	4.53	2.06	45.40	-.62** -(3.82)
18.	Shasun Chemicals	2.50	0.61	24.30	-.17** -(4.27)	1.59	0.37	23.38	-.10** -(3.67)
19.	Sun Pharma	7.97	4.48	56.17	1.03* (2.73)	6.40	4.52	70.51	.99* (2.51)
20.	Torrent Pharma	4.79	2.40	50.03	-.41 -(1.70)	3.69	2.42	65.59	-.44 -(1.85)
21.	Unichem Laboratories	2.93	0.49	16.68	-.12* -(2.89)	2.12	0.54	25.66	-.13* -(2.75)
23.	Wyeth Ltd.	5.78	0.81	13.94	.13 (1.58)	3.52	1.01	28.79	.24* (2.96)

SD – Standard Deviation; CV – Coefficient of Variation; LGR – Linear Growth Rate

Figures in parenthesis shows‘t’ values for LGRs. *Significant at 5% level. **Significant at 1% level

Table: 3 Profitability Ratios of Selected FDI assisted Pharmaceutical Units

Sl. No:	Name of the Company	Profitability Ratios											
		Gross Profit Margin				Earning Power				Return on Assets			
		Mean	S.D	CV	LGR	Mean	S.D	CV	LGR	Mean	S.D	CV	LGR
1.	Aurobindo Pharma	14.28	2.58	18.08	.32 (1.16)	16.41	5.99	36.51	-1.08 -(1.84)	9.56	4.16	43.53	-.68 -(1.6)
2.	Aventis Pharma	16.43	6.32	38.47	1.76* (3.12)	19.28	9.76	50.58	2.94** (3.87)	11.85	7.37	62.25	2.39** (5.08)
3.	Bal Pharma Ltd.	10.74	1.89	17.62	-.19 -(.92)	7.76	1.98	25.49	.35 (1.81)	3.22	1.22	38	.04 (.26)
4.	Cadila Healthcare Ltd.	15.67	4.36	27.81	1.35** (7.66)	12.42	3.03	24.44	.04 (.11)	7.58	3.11	40.98	.52 (1.67)
5.	Cipla Ltd.	23.80	3.37	14.17	-.17 -(.43)	20.97	3.99	19.03	-.38 -(.86)	15.01	3.10	20.64	.11 (.29)
6.	Dr.Reddy,s Laboratories	22.71	6.50	28.62	-.43 -(.58)	14.63	6.71	45.86	-.22 -(.29)	11.82	6.03	51.04	-.03 -(.05)
7.	Glaxo-Smitline Pharma	20.13	2.72	58.8	.83** (3.41)	19.75	4.82	24.4	-.15 -(.27)	12.13	4.32	35.64	.28 (.56)
8.	Glenmark Pharma	17.55	3.30	18.79	.89** (4.07)	20.79	8.24	39.61	-2.21**- (3.93)	13.28	6.09	45.85	-1.27* -(2.31)
9.	IPCA Laboratories	14.69	2.86	19.43	.59* (2.3)	14.09	3.65	25.94	.66 (1.85)	8.46	3.41	40.36	.64 (1.96)
10.	Lupin Ltd.	23.11	7.82	33.84	-1.67* -(2.4)	13.09	2.65	20.23	-.18 -(.59)	5.74	1.34	23.38	.23 (1.68)
11.	Marksans Pharma	15.38	4.29	27.92	0 (.01)	10.58	5.53	52.27	.36 (.57)	4.45	6.22	139.7	-.48 -(.67)
12.	Matrix Laboratories	14.10	13.51	95.81	2.89* (2.41)	12.72	14.84	116.7	2.97 (2.15)	5.89	13.31	226.1	2.32 (1.76)
13.	Nicholas Piramal India	19.71	4.40	22.3	-.59 -(1.27)	14.89	4.30	28.85	1.13** (3.75)	9.07	4.33	47.71	1.06* (3.15)
14.	Orchid Chemical Pharm	25.62	3.84	14.97	-.63 -(1.61)	10.86	5.07	46.64	-1.49**- (5.49)	5.44	4.20	77.17	-1.26** -(6.08)
15.	Panacea Biotech Ltd.	17.79	4.05	22.75	.88* (2.49)	16.87	5.57	33	-.41 -(.65)	9.97	3.68	36.91	-.80*- (2.48)
16.	Pfizer Ltd.	16.21	4.10	25.27	-.03 -(.07)	21.32	7.10	33.31	-.47 -(.58)	11.88	4.56	38.43	.07 (.14)
17.	Ranbaxy Laboratories	19.53	3.79	19.41	-.41 -(.81)	15.09	5.45	36.10	1.15 (1.88)	11.20	5.11	45.68	1.27* (2.44)
18.	Shasun Chemicals	16.88	3.49	20.65	.84* (3.01)	14.82	4.06	27.39	.23 (.48)	7.52	3.66	48.70	.51 (1.33)
19.	Sun Pharma	30.10	4.97	16.52	-.04 -(.08)	22.21	5.88	26.49	-.54 -(.82)	19.37	5.54	28.58	-.37 -(.59)
20.	Torrent Pharma	21.91	3.71	16.93	-.94** -(3.36)	16.22	3.72	22.91	.10 (.23)	9.43	3.10	32.89	.62 (2.15)
21.	Unichem Laboratories	13.57	3.53	26	1.08** (7.20)	15.76	5.06	32.08	1.43** (4.69)	9.89	4.70	47.52	1.32** (4.62)
23.	Wyeth Ltd.	19.24	2.61	13.59	.62* (2.90)	23.97	4.58	19.12	-1.18**- (3.55)	14.82	2.55	17.20	-.28 -(.99)

SD – Standard Deviation; CV – Coefficient of Variation; LGR – Linear Growth Rate

Figures in parenthesis shows‘t’ values for LGRs. *Significant at 5% level. **Significant at 1% level

Table: 4 Ratios of Du Pont Analysis of Selected FDI assisted Pharmaceutical Units

Sl. No:	Name of the Company	Ratios of Du Pont Analysis											
		Net Profit Margin Ratios				Assets Turnover Ratios				Leverage Multiplier			
		Mean	S.D	CV	LGR	Mean	S.D	CV	LGR	Mean	S.D	CV	LGR
1.	Aurobindo Pharma	7.33	2.14	29.19	-.04 -(.17)	1.27	.38	29.97	-.10** -(3.66)	2.53	.31	12.08	-.05 -(1.58)
2.	Aventis Pharma	8.56	4.87	56.88	1.54** (4.61)	1.34	.14	10.13	.04* (2.74)	1.94	.42	21.38	-.13** -(4.87)
3.	Bal Pharma Ltd.	3.89	1.9	48.8	-.28 -(1.39)	.85	.19	22.84	.05** (4.0)	2.55	.75	29.40	.24** (11.69)
4.	Cadila Healthcare Ltd.	8.31	3.71	44.63	.99** (3.88)	1.0	.35	34.83	-.08* -(2.49)	2.72	1.19	43.57	-.27* -(2.64)
5.	Cipla Ltd.	15.78	3.17	20.11	.25 (.71)	.95	.07	7.30	-.01 -(1.15)	1.60	.13	8.44	.01 (.71)
6.	Dr.Reddy,s Laboratories	15.9	6.67	41.98	-.42 -(.55)	.72	.12	16.80	.01 (0.46)	1.43	.20	14.26	.01 (.22)
7.	Glaxo-Smitline Pharma	11.78	8.53	72.46	2.13* (3.28)	1.27	.49	38.41	-.15** -(6.6)	1.95	.53	27.13	.14** (3.82)
8.	Glenmark Pharma	10.08	2.75	27.31	.38 (1.29)	1.38	.65	47.18	-.20** -(7.77)	1.99	.59	29.45	.13* (2.46)
9.	IPCA Laboratories	7.54	2.88	38.18	.56 (2.04)	1.12	.06	5.25	0 (.25)	2.05	.21	10.20	.04 (1.86)
10.	Lupin Ltd.	8.33	2.77	33.2	-.14 -(.43)	.72	.18	24.86	.04* (3.01)	2.91	.45	15.59	.05 (.97)
11.	Marksans Pharma	4.81	6.56	136.4	-.93 -(1.35)	.89	.22	24.51	.04 (1.78)	3.32	1.56	47.06	.35* (2.59)
12.	Matrix Laboratories	6.26	11.93	190.6	2.25 (1.96)	1.08	.34	31.06	.03 (.79)	2.61	.98	37.69	.12 (1.10)
13.	Nicholas Piramal India	9.87	3.79	38.44	.17 (.38)	.92	.26	28.1	.08** (6.41)	2.27	.59	26.16	.09 (1.55)
14.	Orchid Chemical Pharm	9.01	5.23	57.99	-1.57** -(6.14)	.54	.14	25.59	-.04** -(4.34)	2.71	.70	25.79	.18** (3.39)
15.	Panacea Biotech Ltd.	8.92	1.94	21.77	-.14 -(.63)	1.1	.31	27.77	-.08** -(4.18)	2.66	.82	30.20	.06 (.07)
16.	Pfizer Ltd.	8.00	2.87	35.9	.22 (.69)	1.5	.29	19.23	-.05 -(1.76)	1.73	.25	14.17	-.07** -(6.48)
17.	Ranbaxy Laboratories	12.5	3.13	25.07	.29 (.68)	0.87	.23	26.09	.07** (4.75)	1.60	.10	6.39	-.01 -(.80)
18.	Shasun Chemicals	6.39	2.72	42.56	.46 (1.71)	1.18	.16	13.39	0 -(.02)	2.89	.49	16.98	-.12* -(3.32)
19.	Sun Pharma	23.95	5.05	21.08	.12 (.21)	0.83	.24	28.43	-.02 -(.60)	1.57	.51	32.13	.09 (1.86)
20.	Torrent Pharma	11.01	.91	8.29	.07 (.71)	0.85	.23	27.31	.05* (2.30)	2.34	.78	33.11	-.21** -(4.15)
21.	Unichem Laboratories	7.08	3.27	46.13	.98** (6.31)	1.38	.1	7.48	0 (0.0)	2.02	.18	9.03	-.03 -(1.73)
23.	Wyeth Ltd.	11.11	2.73	24.56	.64* (2.85)	1.38	.32	23.02	-.10** -(11.61)	1.39	.08	5.85	-.01 -(.8)

SD – Standard Deviation; CV – Coefficient of Variation; LGR – Linear Growth Rate

Figures in parenthesis shows‘t’ values for LGRs. *Significant at 5% level. **Significant at 1% level

Table: 5 Return on Equity of Selected FDI assisted Pharmaceutical Units

Serial Number	Name of the Company	Return on Equity (Based on Du Pont Analysis)			
		Mean	S.D	CV	LGR
1.	Aurobindo Pharma	24.28	11.14	45.88	-2.17 -(2.07)
2.	Aventis Pharma	20.64	8.81	42.66	2.69** (4.03)
3.	Bal Pharma Ltd.	8.28	408	49.27	0.87* (2.39)
4.	Cadila Healthcare Ltd.	19.16	9.08	47.38	0.05 0.04)
5.	Cipla Ltd.	23.63	3.85	16.30	0.43 (1.01)
6.	Dr.Reddy,s Laboratories	16.63	8.02	48.25	-0.02 -(0.02)
7.	Glaxo-Smitline Pharma	24.04	12.58	52.31	2.58* (2.30)
8.	Glenmark Pharma	23.97	6.42	26.78	-1.06 -(1.62)
9.	IPCA Laboratories	17.21	7.00	40.69	1.58* (2.64)
10.	Lupin Ltd.	16.59	4.05	24.42	0.87* (2.42)
11.	Marksans Pharma	7.86	26.79	340.99	-0.95 -(0.31)
12.	Matrix Laboratories	12.15	49.89	410.74	6.99 (1.32)
13.	Nicholas Piramal India	20.71	13.05	63.02	3.56** (4.16)
14.	Orchid Chemical Pharm	13.03	8.72	66.95	-2.41** -(4.31)
15.	Panacea Biotech Ltd.	24.57	7.91	32.20	0.06 (0.07)
16.	Pfizer Ltd.	20.31	7.26	35.76	-054 -(0.66)
17.	Ranbaxy Laboratories	17.87	8.05	45.06	1.90* (2.30)
18.	Shasun Chemicals	20.45	7.65	37.41	0.69 (0.80)
19.	Sun Pharma	28.37	3.45	12.16	0.41 (1.09)
20.	Torrent Pharma	20.21	2.64	13.05	-0.54 -(2.21)
21.	Unichem Laboratories	19.44	8.52	43.80	2.38** (4.48)
23.	Wyeth Ltd.	20.61	3.44	16.71	-0.53 -(1.47)

SD – Standard Deviation; CV – Coefficient of Variation; LGR – Linear Growth Rate

Figures in parenthesis shows‘t’ values for LGRs. *Significant at 5% level. **Significant at 1% level

Table 6: Performance of ALL SELECTED PHARMACEUTICAL COMPANIES from 1997 to 2006

Year	Capital Structure Ratios		Liquidity Ratios		Profitability Ratios			Ratios for Du Pont Analysis			ROE Based on Du Pont Analysis
	Debt to Equity Ratio	Debt to Asset Ratio	Current Ratio	Quick Ratio	Gross Profit Margin	Earning Power	Return on Assets	Net Profit Margin	Asset Turnover Ratio	Leverage Multiplier	
	(Times)	(Times)	(Times)	(Times)	(%)	(%)	(%)	(%)	(Times)	(Times)	(%)
1999	0.53	0.28	5.02	3.58	18.66	15.11	9.25	10.11	0.92	1.86	17.23
2000	0.49	0.27	4.76	3.42	19.56	15.67	8.81	9.65	0.91	1.84	16.24
2001	0.49	0.26	4.31	3.15	17.72	13.88	8.61	9.61	0.90	1.89	16.27
2002	0.44	0.24	4.47	3.32	18.27	15.76	9.84	10.03	0.98	1.83	18.02
2003	0.31	0.19	4.67	3.47	18.14	14.98	9.66	10.18	0.95	1.67	16.14
2004	0.35	0.20	4.59	3.33	18.69	16.32	10.73	10.61	1.01	1.73	18.61
2005	0.31	0.17	4.99	3.78	20.05	17.98	12.48	12.36	1.01	1.85	23.06
2006	0.32	0.17	4.94	3.69	21.97	18.51	13.31	14.06	0.95	1.89	25.19
2007	0.32	0.17	4.98	3.76	21.41	16.67	12.05	13.55	0.89	1.93	23.25
2008	0.58	0.27	5.32	4.10	21.62	12.81	9.27	13.26	0.70	2.19	20.33
Mean	0.41	0.22	4.81	3.56	19.61	15.77	10.40	11.34	0.92	1.87	19.43
SD	0.10	0.05	0.30	0.28	1.57	1.73	1.66	1.76	0.09	0.14	3.34
CV	25.04	21.25	6.27	7.88	8.03	10.98	15.96	15.54	9.71	7.34	17.18
LGR	-0.01	-0.01	0.05	0.07*	0.40**	0.11	0.34	0.52**	-0.01	0.02	0.84**
	-(0.99)	-(2.04)	(1.81)	(2.94)	(3.49)	(0.53)	(2.19)	(5.47)	-(1.06)	(1.61)	(3.36)

SD – Standard Deviation; CV – Coefficient of Variation; LGR – Linear Growth Rate

Figures in parenthesis shows‘t’ values for LGRs. *Significant at 5% level. **Significant at 1% level