Impact of FDI on the Automobile Sector in India

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ABSTRACT

As India dreams of becoming a financial super power and join the developed countries, it is worthwhile to introspect on one of the key ingredients of the dream: Foreign Direct Investment (FDI). FDI is a key driver for growth and development and thus its inflow is crucial for an economy. India ranks pretty high on the Global Investors confidence, however UNCTAD's report on FDI Performance index ranks the country at a modest echelon. This study tries to understand the reasons behind such modest FDI performance with respect to the Automobile sector of the Indian economy in the post liberalization period. The also the study suggests certain measures concerning government policies that would strengthen this performance index. Automobile sector is one of the key sectors of the economy as it has deep forward and backward linkages to several key segments and is capable of driving economic growth and development. With the help of primary and secondary data and various statistical tools, the study infers that FDI is surely an engine of growth but the share of FDI in the Automobile sector is limited and hence the GDP contribution from the concerned sector is also very meager. The Government should come up with policy reforms that increase the FDI volume in the Automobile sector which would have a direct bearing on GDP and export earnings. This in turn would improve the FDI performance index as a whole.

INTRODUCTION

Foreign Direct Investment may be defined as an investment involving a long term relationship, where an investor based in one country acquires an asset in another country with the intent to manage it. In simple terms, FDI means acquiring ownership in an overseas business entity, where the investing firm needs to have at least 10% of the ordinary shares of its foreign counter part.

The past 20 years have seen a marked increase in the flow of FDI in the world economy. The average yearly flow of FDI increased from about $25 billion in 1975 to a record $1.3 trillion in 2000. Historically, most FDI had been directed at the developed nations of the world as firms based in advanced countries invested in each others' markets. This trend continued till 1990's: in the post ninties, the flow of FDI gradually headed towards the developing nations. In 2002, the surge into developing nations accounted for 35% of the total FDI flow and the amount rose to $185 billion. Recent inflows into developing nations have been targeted to the emerging economies like China, India, and South East Asian countries.

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FDI inflows in India grew steadily throughout the first half of the 90s but stagnated between 1996-99 and 2002-04. The year-on-year fluctuations until 2003-04, make it difficult to identify a clear trend; however, inflows have been increasing continuously since 2004-05. During 2008-09, India registered FDI inflows of $37.8 billion and the total cumulative inflows from August 1991 to March 2009 have been to the tune of $155 billion.

FDI plays a crucial role in the development process of the host country. At its most basic level, foreign investment brings capital into the economy. More importantly, multinational investment brings in new technology and new methods of doing business and also increases the set of employment opportunities. It can serve as a powerful force for increasing the skills of labour pool and help the host country to expand various networks such as marketing and procurement. FDI furthermore increases the host country's foreign exchange earnings through exports and enhances domestic economic activity through purchases of local inputs. As a consequence, Foreign Direct Investment is highly prized in developing countries for giving a boost to significant economic growth through technology transfers, employment generation, international business relationships and management and training modernization. Developing countries like India, need substantial foreign inflows to achieve the required investment to accelerate economic growth and development.

UNCTAD ranks countries by their Inward FDI Performance and Inward FDI Potential Indices. While India is the second most attractive country in terms of the foreign investors' confidence index, it does not rank high on either the performance or potential indices. UNCTAD (2008) provides a matrix of four groups of countries based on their FDI performance and potential:

a) Front runners: countries with both high FDI potential and performance
b) Above potential: countries with low FDI potential but strong performance
c) Below potential: countries with high FDI potential but low performance
d) Under-performers: countries with both low FDI potential and performance

While countries like Chile, Hong Kong, Malaysia, Singapore and Thailand are "front runners", and China is below potential, all the major South Asian countries, viz., Bangladesh, India, Nepal, Pakistan and Sri Lanka are "underperformers". India's FDI Performance Index in 2007 ranked at 106 (China was 88) out of 141 countries. However, it has a relatively high FDI Potential Index at 84 (China is 32).

The World Investment Report of 2010 by UNCTAD still confirms India to be the second most attractive investment destination among the Transnational Corporations. The liberal investment regime, rapid growth of the economy, strong macroeconomic fundamentals, progressive de-licensing of sectors and the ease in doing business keeps on attracting global corporations to invest in India. Hence, the FDI equity inflows have registered a phenomenal upswing. But why is there still a mismatch between the investors' confidence index and the performance index over FDI? FDI Performance Index is measured by the ratio of a country's share in global FDI flows to its share on global GDP (UNCTAD, 2004).

India for a long time followed an import-substitution policy and relied on domestic resource mobilization and domestic firms (Bhalla 2002; Sharma 2002), encouraging FDI only in higher-technology activities. Despite the progressive liberalization policies, imposition of joint venture requirements and restrictions on FDI in certain sectors did not help India from FDI as much as it should have been. (IMF, 2002).

FDI is considered to be the life blood and an important vehicle for economic development as far as the developing nations are concerned. The important effect of FDI is its contribution to the growth of the economy. The sweeping economic reforms undertaken by the Indian government aimed at opening up the economy and embracing globalization have been instrumental in the surge in FDI inflows. However, with the deficiencies pointed out by UNCTAD in its several reports, the government had been accepting further liberalization measures across a broad range of sectors. Some of the measures which have been adopted are:

- Restructuring the Foreign Investment Promotion Board.

- Establishment of the Indian Investment Commission to act as a one-stop shop between the investor and the bureaucracy.
- Expanding the number of industries for which 100 per cent FDI is allowed through the automatic route.
- Progressively raising the FDI cap in other sectors like telecom, aviation, banking, petroleum and media sectors among others.
- Removal of the investment cap in the small scale industries (SSI) sector.

Developing countries like India need substantial foreign inflows to achieve the required investment to accelerate economic growth and development. It can act as a catalyst for domestic industrial development. Further, it helps in speeding up economic activity and brings with it other scarce productive factors such as technical knowhow and managerial experience, which are equally essential for economic development.

Hence to assess the performance level of FDI in India, this paper takes into account the Automobile sector for its discussion. On the canvas of the Indian economy, the Automobile industry occupies a prominent place. Due to its deep forward and backward linkages with several key segments of the economy, the Automobile sector has a strong multiplier effect and is capable of being the driver of economic growth. A sound transportation system plays a pivotal role in the country's rapid economic and industrial development. The well-developed Indian Automobile industry ably fulfils this catalytic role of FDI by producing a wide variety of vehicles: passenger cars, light, medium and heavy commercial vehicles, multi-utility vehicles such as jeeps, scooters, motorcycles, mopeds, three wheelers, tractors etc.

OBJECTIVE OF THE RESEARCH

Keeping in mind the importance of the Automobile sector in an economy, the paper tries to assess the overall role of FDI in the Automobile sector in India and how far it could help in the growth and development of the nation as a whole.

Though the Indian economy opened up in the year 1991, FDI flows in the Automobile sector started flowing freely from the year 1996. However during that time the FDI cap in this industry was still maintained at 51%. It was only in the year 2002 that the Indian government realized the importance of the Automobile sector and allowed 100% FDI through the automatic route. The basic advantages provided by India in the automobile sector include advanced technology, cost-effectiveness, and efficient manpower. Besides, India has a well-developed and competent Auto Ancillary Industry along with automobile testing and R&D centers. Many large global companies have set up their facilities in India taking the production of vehicle from 2 million in 1991 to 9.7 million in 2006. Some among the global companies that are investing in India are US automakers General Motors and Ford, Germany's BMW and Daimler Chrysler AG, France's Renault, Japan's Suzuki, Toyota and Honda, and South Korea's Hyundai.

The FDI cap having been removed gradually in the Automobile sector, the paper captures this impact of the change in FDI in the concerned sector and how in turn automobile sector is contributing to the development of the nation.
The main purpose of the paper is to evaluate the performance of FDI on certain factors like GDP contribution, export amount, employment generation, number of cumulative foreign technology collaboration etc in the Automobile sector from the time period of 1991 to 2010. This evaluation would assess whether increasing the FDI cap in the Automobile sector has really helped in the growth of the country and hence the FDI performance index.

LITERATURE REVIEW

1) Dijkstra (2000), Tybout (2000) and Vachani (1997) found that investment policy liberalisations have major impacts on firms in less developed countries (LDCs) where the pre-liberalisation level of protection was high. Not all firms are affected equally; some will be losers while others will be winners, depending on their characteristics.

2) Cheng, (1993) noted the growing importance of cross-border R & D activities and suggested that additional research on FDI should be done on why firms internationalize their R & D.
3) Nagesh Kumar (2001) analyses the role of infrastructure availability in determining the

attractiveness of countries for FDI inflows for export orientation of MNC production.

4) Anand Virmani and Susan Collins (2007) studied empirically India's economic growth experience during 1960-2004 focussing on the post 1973 acceleration. The analysis focuses on the unusual dimensions of India's experience. They find that India will need to broaden its current expansion to provide manufactured goods to the world market and jobs for its large pool of low skilled workers.

5) Kulwinder Singh (2005) has analyzed FDI flows from 1991-2005. A sectoral analysis in his study reveals that though a gradual increase in FDI has become a staple of success in India, the progress is hollow. The telecommunication and power sector are the reasons for the success of infrastructure.

6) Jaya Gupta (2007) in his paper made an attempt to review the change in sectoral trends in India due to FDI Inflows since liberalization. This paper also examines the changed policy implications on sectoral growth and economic development of India as a whole.

7) Jayashree Bose (2007) in her book studied the sectoral experiences faced by India and China in connection with FDI inflows. This book provides information on FDI in India and China, emerging issues, globalization, foreign factors, trends and issues in FDI inflows, FDI inflows in selected sectors. A comparative study has also been conducted on FDI outflows from India and China. This book also revealed the potential and opportunities in various sectors in India that would surpass FDI inflows in India as compared to China.

8) Tanay Kumar Nandi and Ritankar Sarker (2007) in their work made an attempt to study the Foreign Direct Investment in India with a special focus on Retail Trade. This paper stresses the need of FDI in India in retail sector and uses the augment that FDI is allowed in multiple sectors and the effects have been quite good without harming the domestic economy. The study also suggests that FDI in retail sector must be allowed.

9) Athreye, S. and S. Kapur (2001), in their literature "Private Foreign Investment in India: Pain or Panacea?" identified several criteria for assessing the degree of an enterprise's multinationality and found out whether those factors determine FDI to be a virtue or a voe.

10) Borensztein, E., J. De Gregorio and J. Lee (1995) tried to test the effect of foreign direct investment (FDI) on economic growth using a regression framework with data on FDI flows from industrial countries to 69 developing countries over the last two decades in their paper. Their results suggest that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment. The paper was titled as "How does Foreign Direct Investment Affect Growth", Journal of International Economics.

11) Dua, P. and A.I. Rasheed's (1998). "Foreign Direct Investment and Economic Activity in India", discusses the relative magnitudes and volatilities of the various sources of external finance in the Asian and Pacific region, linkages among the sources of finance, and lessons relating to how developing countries might harness and fortify the various sources of external finance to facilitate their growth and development. (Indian Economic. Review, vol. 33)

12) P.P.A Wasantha Athukorala in the paper "The impact of FDI for economic growth: A case study in Sri Lanka" focuses on the FDI-led growth hypothesis in the case of Sri Lanka. The study is based on time series data from 1959 to 2002 and the response of civil society and foreign firms. It's analysis reduces the confidence in the belief that FDI has exerted an independent growth effect in Sri Lanka. But net attitudes of the civil society on the impact of FDI on opportunities for domestic business and economic activities is positive and net attitudes of foreign firms toward FDI

reveals that the investment climate has not improved in Sri Lanka as a result of lack of good governance, corruption, political instability and disturbance, bureaucratic inertia, and poor low and order situation.

13) Monica Singhania & Akshay Gupta in their paper 'Determinants of foreign direct investment in India', published in the Journal of International Trade Law and Policy Volume: 10 (2011), used macroeconomic variables – GDP, inflation rate, interest rate, patents, money growth and foreign trade to explain variation in FDI inflows into India. It was found that of all macroeconomic variables taken, only GDP, inflation rate and scientific research are significant and that FDI Policy changes during years 1995-1997 have had a significant impact on FDI inflows into India.

14) Grazia Ietto-Gillies published a critical analysis of the World Investment report,2010 in "critical perspectives on international business" Volume: 7 Issue: 3 2011. The paper presents a historical analysis, the structural features of all WIRs, and an analysis of content and limitations of WIR 2010. The paper starts with considering the historical background leading to successive units dealing with transnational corporations (TNCs) within the United Nations Conference on Trade and Development (UNCTAD). The commonalities in structure, content and methodology among all WIRs are discussed. The essay then analyses the World Investment Report 2010. The conclusions make suggestions for revisiting some of the themes of earlier WIRs.

15) M. John Foster's paper on 'Distribution of FDI across China – common policies but differing impacts by region' illustrates how differing policy instruments linked to foreign direct investment (FDI) into China may have very different impacts. China is near the top of the list of FDI recipients, but its relative success compared with other developing economies is more modest. FDI into China is heavily skewed in favour of the richest east region, the poor west being the weakest attractor. The mini-cases show how the same policy can have very different and sometimes unintended outcomes in different areas. This was published in 'Journal of Chinese Economic and Foreign Trade Studies',Volume: 4 Issue: 2 2011.

16) Laura Alfaro argues that foreign direct investment (FDI) can convey great advantages to host countries, this paper shows that the benefits of FDI vary greatly across sectors by examining the effect of foreign direct investment on growth in the primary, manufacturing, and services sectors. An empirical analysis using cross-country data for the period 1981-1999 suggests that total FDI exerts an ambiguous effect on growth. Foreign direct investments in the primary sector, however, tend to have a negative effect on growth, while investment in manufacturing a positive one. Evidence from the service sector is ambiguous. This has been captured in her paper 'Foreign Direct Investment and Growth: Does the Sector Matter?', published in Harvard Business School, April 2003

A huge amount of work has been done with FDI as the backdrop; be it the determinants, the effects and impacts, policies, types, merits-demerits, sectors etc on several economies.
This paper tries to discuss about the performance index of FDI in India through the Automobile sector.

METHODOLOGY

The main idea of the paper is to assess the impact of FDI in the post liberalization period in India through the Automobile sector. The effect of FDI in the host country can be measured and determined by a number of factors and macro-economic variables. The aspects which had been considered in this paper are contribution to GDP, the change in exports, total number of sales and number of cumulative foreign technology collaborations created due to the change in the FDI amount in the Automobile sector.

For the macro variables identified data had been collected through secondary source, mainly from the websites and articles of Reserve Bank of India, Secretariat for Industrial Assistance, Department of Industrial Policy and Promotion and Society of Automotive Manufacturers, Delhi. Secondary data regarding GDP, FDI and exports had been collected for the total country as a whole and also for the Automobile sector. The sample years chosen was from 1991-2010, i.e. the post liberalization period.

India as a whole: (Table: 1.1)

Year	Total GDP (Amount in US $ million)	Total FDI (Amount in US $ million)	Total Exports (Amount in US $ million)
1991-92	1272457	165	17865.4
1992-93	1333123	315	18537.2
1993-94	1421831	586	22238.3
1994-95	1529453	1314	26330.5
1995-96	1645037	2144	31794.9
1996-97	1711735	2821	33469.7
1997-98	1817752	3557	35006.4
1998-99	1952035	2462	33218.7
1999-00	2030711	2155	36822.4
2000-01	2136651	4029	44560.3
2001-02	2217133	6130	43826.7
2002-03	2402727	5035	52719.4
2003-04	2602065	4322	63842.6
2004-05	2580980	6051	83535.9
2005-06	3544348	8961	103090.5
2006-07	3872974	22826	126414.1
2007-08	4253184	34835	162904.2
2008-09	4462967	37838	182799.5
2009-10	4869317	37763	178751.4
2010-11	5298129	30380	254402.1

Source: RBI (www.rbi.org.in)

Automobile Sector: (Table: 1.2)

Year	Share in GDP (Amount in lakhs)	Share in Export (Amount in lakhs)	Total number of sales (Domestic+Export)
1991-92	-	-	2436187
1992-93	-	-	2211776
1993-94	-	-	2027964
1994-95	-	-	2258024
1995-96	-	-	2828267
1996-97	-	-	3517531
1997-98	-	-	4083277
1998-99	5771792	135572	4240597
1999-00	5934728	155958	4374707
2000-01	6732771	189918	4974268
2001-02	6927246	299486	5208456
2002-03	6859856	315991	5174672
2003-04	7945274	561323	6163303
2004-05	8757657	739471	6898487
2005-06	10400320	943345	8249100
2006-07	11650316	1184660	9351793
2007-08	13511925	1449490	10911801
2008-09	13143633	1779654	10935834
2009-10	16145049	1854431	11220732

Source: Society of Automotive Manufacturers, Delhi
*Data for some years are not available

FDI in Automobile Sector : (Table: 1.3)

Year	Amount of FDI (In US $MILLION)
2000-01	145
2001-02	239
2002-03	141
2003-04	190
2004-05	321
2005-06	529
2006-07	1278
2007-08	1148
2008-09	1150
2009-10	1208

Source: Secretariat for Industrial Assistance (www.dipp.gov.in)
*Data regarding FDI in the Automobile sector from the years 1991 to 1999 are not available

The FDI in Automobile Industry has experienced huge growth in the past few years. The increase in the demand for cars and other vehicles is powered by the increase in the levels of disposable income in India. The options have increased with quality products from foreign car manufacturers. The introduction of tailor made finance schemes, easy repayment schemes has also helped the growth of the automobile sector. Hence, apart from the above mentioned macro-economic variables, customers' perception and the change in their buying behavior towards automobiles after the introduction of several foreign brands had also been captured.

A primary survey had been conducted to collect data for customers' perception with a sample size of 87. The sampling method selected was disproportionate stratified sampling, done on the basis of monthly income and the data had been collected through a questionnaire. (The questionnaire is attached at the end of the report). The basic aim of the primary study was to find out the customers' insight and observation about the foreign brands vis-à-vis the domestic brands, and hence the change in the buying behavior which the foreign brands brought in along with the FDI's in the Automobile sector.

The following statistical analysis to find out the impact of FDI in the Automobile sector, had been used:

- Correlation coefficient between the amount of FDI and GDP value in the Automobile sector
- Correlation coefficient between the amount of FDI and export value in the automobile sector
- Correlation coefficient between the amount of FDI and total sales
- Graphical representations to show the contribution of the Automobile sector in total GDP with respect to the FDI amount
- Comparison of mean GDP and mean export value in the years when FDI was <100% and when FDI became equal to100%, using t-testing
- Comparison of mean total sales in the years when FDI was <100% and when FDI became equal to100%, using t-testing
- The effect of foreign brands on consumers' buying behavior through chi-square test of association. Graphical representations to show the opinions of the customers' between the foreign brands and domestic brands.

RESULTS AND DISCUSSION

On the basis of secondary data, the Correlation Coefficient had been calculated between several macro economic variables and they are listed below in the table 2.1.

(Table: 2.1) : FDI, GDP value in the Automobile Sector (in Rs. & $)

Year	Amount of FDI in the Auto-mobile Sector (Amount in US $ million)	GDP value in the Automobile Sector (Amount in Lakhs)	GDP value in the Automobile Sector (Amount in million Rs)	GDP value in the Automobile Sector (Amount in US $ million)
1991-92	-	-	-	-
1992-93	-	-	-	-
1993-94	-	-	-	-
1994-95	-	-	-	-
1995-96	-	-	-	-
1996-97	-	-	-	-
1997-98	-	-	-	-
1998-99	-	5771792	577179.176	12846.19
1999-00	-	5934728	593472.752	13208.83
2000-01	145	6732771	673277.122	14985.02

Continued Table 2.1 (Table: 2.1)

Year	Amount of FDI in the Auto-mobile Sector (Amount in US $ million)	GDP value in the Automobile Sector (Amount in Lakhs)	GDP value in the Automobile Sector (Amount in million Rs)	GDP value in the Automobile Sector (Amount in US $ million)
2001-02	239	6927246	692724.648	15417.86
2002-03	141	6859856	685985.568	15267.87
2003-04	190	7945274	794527.44	17683.67
2004-05	321	8757657	875765.66	19491.78
2005-06	529	10400320	1040032	23147.83
2006-07	1278	11650316	1165031.56	25929.93
2007-08	1148	13511925	1351192.5	30073.28
2008-09	1150	13143633	1314363.26	29253.58
2009-10	1208	16145049	1614504.9	35933.78

Correlation coefficient between the amount of FDI and GDP value in the Automobile sector (for the years 2000-01 to 2009-10) is 0.92.

(Table: 2.2) FDI & Exports from the Automobile Sector in (Rs. & $)

Year	Amount of FDI in the Auto-mobile Sector (Amount in US $ million)	Export value in the Automobile Sector (Amount in Lakhs)	Export value in the Automobile Sector (Amount in million Rs)	Export value in the Automobile Sector (Amount in US $ million)
1991-92	-	-	-	-
1992-93	-	-	-	-
1993-94	-	-	-	-
1994-95	-	-	-	-
1995-96	-	-	-	-
1996-97	-	-	-	-
1997-98	-	-	-	-
1998-99	-	135572	13557.1886	301.74
1999-00	-	155958	15595.8305	347.11
2000-01	145	189918	18991.7552	422.70
2001-02	239	299486	29948.622	666.56
2002-03	141	315991	31599.1346	703.30
2003-04	190	561323	56132.305	1249.33
2004-05	321	739471	73947.07	1645.83
2005-06	529	943345	94334.5	2099.59
2006-07	1278	1184660	118465.985	2636.68
2007-08	1148	1449490	144948.99	3226.11
2008-09	1150	1779654	177965.375	3960.95
2009-10	1208	1854431	185443.135	4127.38

Correlation coefficient between the amount of FDI and Export value in the Automobile sector (for the years 2000-01 to 2009-10) is 0.92.

- Data given in crores or lakhs had been converted to Rs million first and then to US $ million.

- Data regarding GDP had been given in the website of RBI taking the year 2004-05 as the base year because current account was nearly in balance in that year. Accordingly, the exchange rate of Rs/$ had also been taken for the year 2004-05 which was 44.93 on an average

(Table: 2.3) : FDI & Total Sales of Automobile Sector (Domestic + Exports in $)

Year	Amount of FDI in the Automobile sector (Amount in US $ million)	Total sales (Domestic+Export)
1991-92	-	2436187
1992-93	-	2211776
1993-94	-	2027964
1994-95	-	2258024
1995-96	-	2828267
1996-97	-	3517531
1997-98	-	4083277
1998-99	-	4240597
1999-00	-	4374707
2000-01	145	4974268
2001-02	239	5208456
2002-03	141	5174672
2003-04	190	6163303
2004-05	321	6898487
2005-06	529	8249100
2006-07	1278	9351793
2007-08	1148	10911801
2008-09	1150	10935834
2009-10	1208	11220732

Correlation coefficient between the amount of FDI and Total sales in the Automobile sector (for the years 2000-01 to 2009-10) is 0.95.

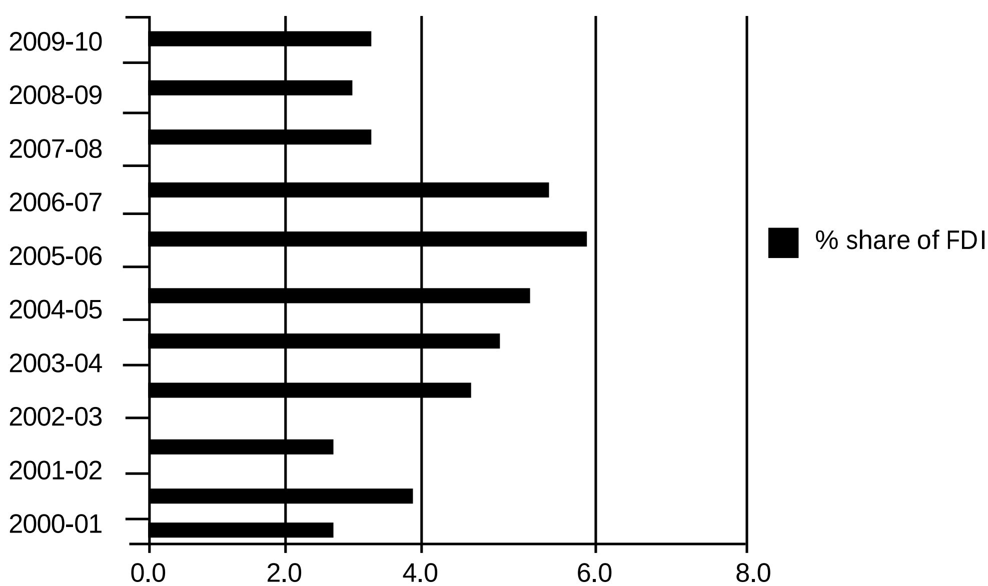
So it was found that the values of correlation coefficient are quite high between the FDI amount in the Automobile sector with the GDP value, export value and total sales in that sector.

1) Share of FDI and GDP in the Automobile sector (Table 2.4)

Year	FDI in Automobile Section (Amount in US $million)	Total FDI Amount in (Amount in US $million)	% share of Automobile in FDI
1991-92	-	165	-
1992-93	-	315	-
1993-94	-	586	-
1994-95	-	1314	-
1995-96	-	2144	-
1996-97	-	2821	-
1997-98	-	3557	-
1998-99	-	2462	-
1999-00	-	2155	-
2000-01	145	4029	3.60
2001-02	239	6130	3.90
2002-03	141	5035	2.80
2003-04	190	4322	4.40
2004-05	321	6051	5.30
2005-06	529	8961	5.90
2006-07	1278	22826	5.60
2007-08	1148	34835	3.29
2008-09	1150	37838	3.04
2009-10	1208	37763	3.20

% share of the Automobile Sector in FDI

Diagram : 1

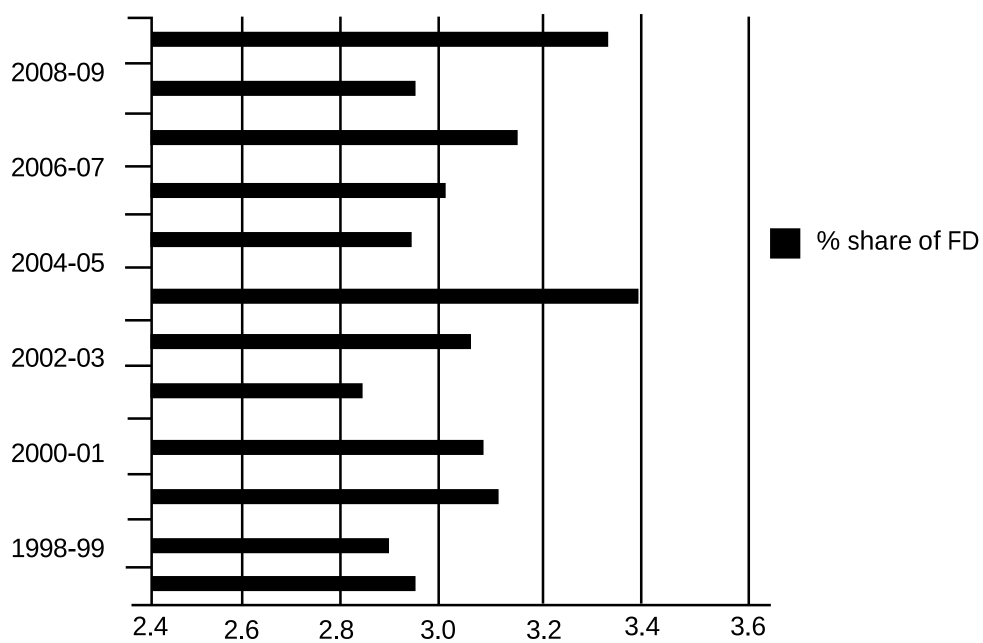


Share of Automobile sector in the nation's GDP: (Table: 2.5)

Year	Automobile's Share in GDP (Amount in lakhs)	Automobile's Share in GDP (Amount million Rs.)	Automobile's Share in GDP (Amount in US $ million)	Total GDP (Amount in crores)	Total GDP (Amount in million Rs)	Total GDP (Amount in US $ million)	% share in GDP
1991-92	-	-	-	1272457	12724570	283208.77	-
1992-93	-	-	-	1333123	13331230	296711.11	-
1993-94	-	-	-	1421831	14218310	316454.71	-
1994-95	-	-	-	1529453	15294530	340407.97	-
1995-96	-	-	-	1645037	16450370	366133.32	-
1996-97	-	-	-	1711735	17117350	380978.19	-
1997-98	-	-	-	1817752	18177520	404574.23	-
1998-99	5771792	577179.18	12846.19	1952035	19520350	434461.38	3.0
1999-00	5934728	593472.75	13208.83	2030711	20307110	451972.18	2.9
2000-01	6732771	673277.12	14985.02	2136651	21366510	475551.08	3.2
2001-02	6927246	692724.65	15417.86	2217133	22171330	493463.83	3.1
2002-03	6859856	685985.57	15267.87	2402727	24027270	534771.20	2.9
2003-04	7945274	794527.44	17683.67	2602065	26020650	579137.55	3.1
2004-05	8757657	875765.66	19491.78	2580980	25809800	574444.69	3.4
2005-06	10400320	1040032.00	23147.83	3544348	35443480	788860.00	2.9
2006-07	11650316	1165031.56	25929.93	3872974	38729740	862001.78	3.0
2007-08	13511925	1351192.50	30073.28	4253184	42531840	946624.53	3.2
2008-09	13143633	1314363.26	29253.58	4462967	44629670	993315.60	2.9
2009-10	16145049	1614504.90	35933.78	4869317	48693170	1083756.29	3.3

% share of the Automobile Sector in GDP

Diagram : 2



The data as well as the graph depicts a very meager percentage share of the Automobile sector in FDI and GDP of the entire country.

1) Comparing mean GDP value, export value and total sales using t-testing:

The mean GDP value, export value and total sales had been compared using t-testing for years when FDI was <100% and for years when 100% FDI was allowed by the government in the Automobile sector. The FDI cap in the Automobile sector was opened up to 100% from the financial year 2002. Hence the sample years when it was not 100% are taken to be 1998-99, 1999-00, 2000-01, 2001-02 (n_1= 4). On the other hand, the years when it was made 100% are taken to be 2002-03, 2003-04, 2004-05, 2005-06, 2006-07, 2007-08, 2008-09, 2009-10 (n_2=8). For each of the testing's the Null Hypothesis and the Alternative Hypothesis was taken as:

H0 : µ1 = µ2

H1 : µ1< µ2 (Left-tailed test was carried out)

(where µ1 denotes either mean GDP value or mean Export value or mean total sales for the first four years when FDI was <100% and µ2 denotes either mean GDP value or mean Export value or mean total sales for the last eight years when FDI was made up to100%)

The hypotheses were tested at a level of significance 5%.

The observed values of t were found to be: t = -2.73 (In case of mean GDP value)

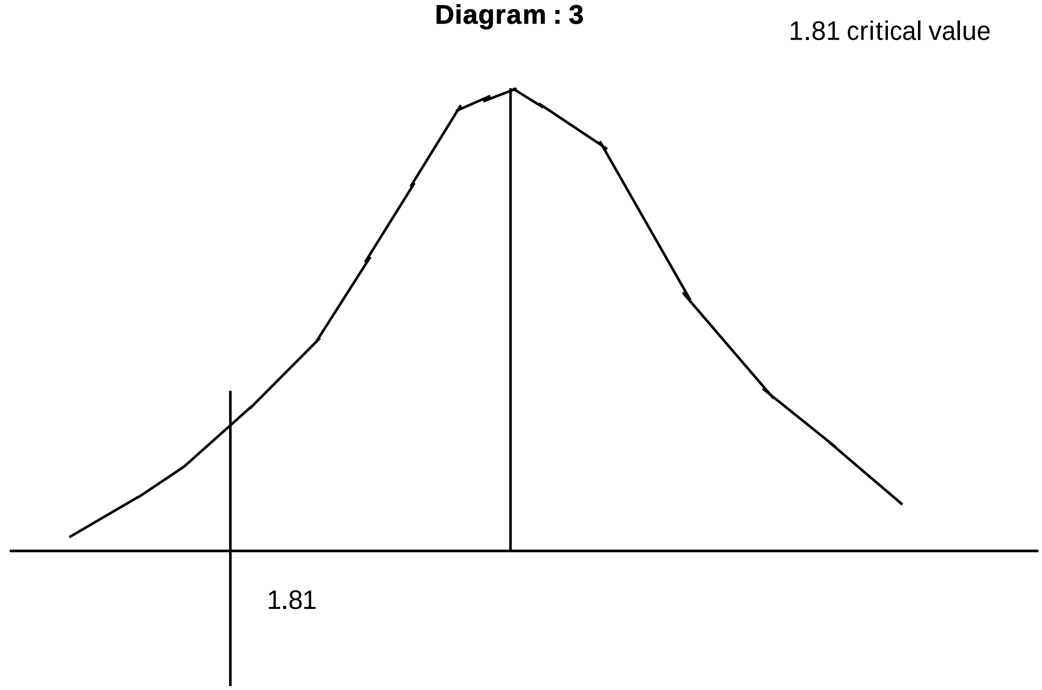
t = -3.04 (In case of mean export value)

t = -3.00 (In case of total sales)

The critical value of t at a level of significance 5%, with a d.f 10 was found to be 1.81

Hence in each of the cases, as shown in the diagram, the null hypothesis were rejected and the Alternative hypothesis accepted which demonstrates the fact that each one of the macro variables were lesser in value in the years when FDI in the Automobile sector was not open up to 100%.

Diagram : 3



Foreign Brands and the Buying Behavior of the customers using chi-square tests:

For carrying out the primary survey, the sample was divided into three sections depending on their monthly income levels (viz. d”Rs25000, Rs (26000 – 50000), e”Rs51000). The following cross-tab table was formulated on the basis of the primary data collected:

Sample Charactics : Buying Behaviour (Table: 2.6)

Income levels	Foreign* Brand	Domestic Brand	Total**
<Rs25000	9	17	26
Rs(26000 -50000)	16	15	31
>Rs51000	22	8	30
Total	47	40	87

Primary Survey : *Foreign brands include joint ventures/merger acquisitions between Foreign and Indian brands created through FDI.

**Data on the buying behaviour of both 2 and 4 wheeler.

A chi-square test of association was carried out to find whether there exists any connection between the buying behavior of customers (between foreign brands and domestic brands) and their income levels. The Null and Alternative hypothesis was as follows:

H0: There is no relation between Brands (foreign vs. domestic) and income level
H1: There is relation between Brands (foreign vs. domestic) and income level

The hypothesis was tested at a level of significance 5%, where the observed value came out to be 10.51 and the critical value at a degree of freedom 2 was found to be 5.99. Hence the Null hypothesis was rejected, exhibiting the fact that there is a strong relation between the income level and buying behavior of customers for foreign vs. domestic brands in the Automobile sector.

Buying Behaviour both 2 and 4 wheeler in the sample (Table: 2.7)

	Two wheeler	Four Wheeler	Total
Domestic Brand	15	2	17
Foreign Brand	9	0	9
Total	24	2	26

Source : Primary Survey

Graphical representations to show customers perception between foreign brands and domestic brands

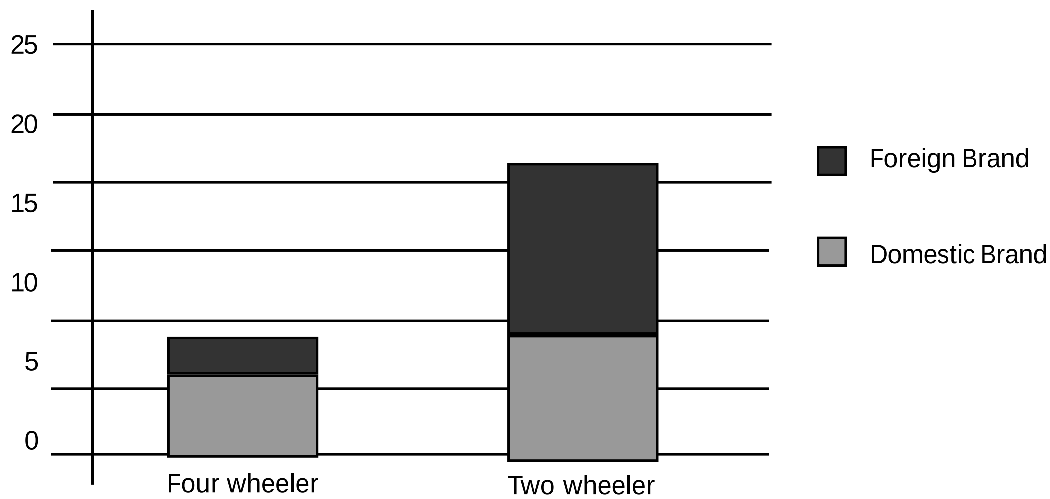
Diagram : 4

The lowest income segment considered in this study mostly opts for two wheelers from the domestic brand.

Income and buying behaviour of 2 & 4 wheelers Rs(26000 - 50000) (Table: 2.8)

	Two wheeler	Four Wheeler	Total
Domestic Brand	6	9	15
Foreign Brand	3	13	16
Total	9	22	31

Diagram : 5



The study shows that the most preferred brand for this income segment is Maruti Suzuki for their low price and low maintenance cost as compared to other foreign brands.

Income and buying behaviour of two & four wheelers Rs (51000) (Table: 2.8)

	Two wheeler	Four Wheeler	Total
Domestic Brand	0	8	8
Foreign Brand	0	22	22
Total	0	30	30

Diagram : 6

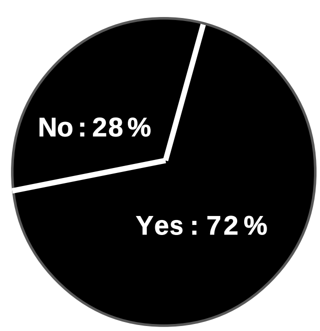
As clearly shown in the above table and graph, the higher income segment prefers as well as purchases more of the foreign brands.

Technical Features and Buying Behaviour two and four wheelers in percentage (Table: 3.0)

Yes	63		72
No	24		28
Total	87		100

Diagram : 7

Customer's perception whether techological features of a foreign brand are superior than a domestic brand ?

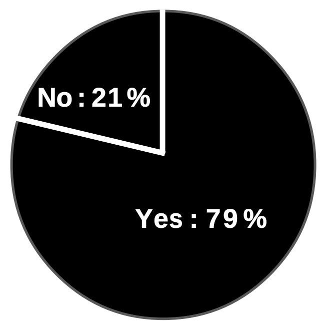


Maintenance and Buying Behaviour (Table: 3.1)

Whether price / Maintenance cost of Foreign brands and greater than Domestic brands ?			%
Yes	69		79
No	18		21
Total	87		100

Diagram : 8

Customer's perception whether price / maintenance cost of a foreign brand are higher than a domestic brand ?

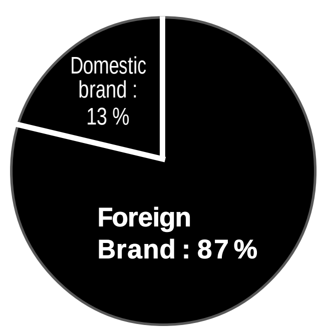


(Table: 3.2)

Which is your dream brand ?		%
Foriegn brand	76	87
Domestic brand	11	13
Total	87	100

Diagram : 9

Which is your dream brand ?



Tables 3.0, 3.1 and 3.2 (and the associated graphs) clearly depict a picture of the customers' perception and purchasing behavior between a foreign and domestic brand in the Automobile sector. The Indian customers' continues to perceive foreign brands at a higher category, be it for technological features, price, maintenance cost etc.

1) Foreign Technology transfer in the Automobile sector:

It has also been found from the factsheets of Department of Industrial Policy and Promotion (April, 2009) that the total number of foreign technology transfer approvals in the Automobile sector had been 755, which is only 9.38% of the total number done across sectors.

CONCLUSION

It is a well known fact that FDI plays a significant role in the economic development of the host country and the findings of this study do not deviate from the scholarly view. The result of the analysis done clearly shows a high positive impact of FDI, in the Automobile sector, on the macroeconomic variables such as GDP value, export value and total sales volume. It has also been found out that the mean values of GDP, export and total sales were lesser in the years when FDI was restricted to 51%, than that of the mean values of these variables in the years when FDI was allowed up to 100% in the Automobile sector.

Hence the findings confirm that FDI did play a catalytic role in the Automobile sector to pull up the GDP value and export value, which are the two major macro-variables to boost economic development. It can also be commented that opening up of the FDI cap to 100%, through the automatic route, was a good measure taken up by the government to improve and enhance the FDI performance index.

The consumer survey on the other hand shows that, though the number of foreign brands has increased enormously due to the inflows of FDI in the Automobile sector, it still caters mostly to the upper middle segment and the higher income segment of the economy. Also, consumers' continue to perceive foreign brands being technologically superior and more expensive compared to their domestic counterparts.

However, the study also portrays a picture, where the amount or percentage of FDI flowing in the Automobile sector is still very low and as a consequence the contribution of this sector to the national GDP stands at a meager percentage.

The Automobile industry is a key sector of the economy, as apart from providing skilled and unskilled employment, it can bring in strong multiplier effects with backward and forward linkages. India ranks third in manufacturing three wheelers and second in manufacturing of two wheelers and is an attractive outsourcing destination for global auto companies because of its strong engineering skills and low costs. Even though having such advantages, companies in this sector complains about the government's frequent change in policies and also that the policies are not encouraging enough to boost foreign investment decisions in the country. This is where the government has to step in and act upon, as huge scope is left to improve the contributions from the Automobile sector. The policies and measures taken up by the government should be encouraging enough in all aspects so as to invite voluminous amounts of foreign investment in the Automobile sector, which in turn will increase the sectors share in the GDP basket. This will consecutively raise the total GDP volume and hence the FDI performance index.

The huge inflow of FDI, which will come in with the changes in the policy and measures, will also bring in more foreign players in the market wherein the consumers will get more choice and a consumer friendly competitive price structure in the Automobile industry.

A large part of the study, however, was dependent on secondary data where values of the macro-variables and the FDI amount in the Automobile sector were not available for a number of years. So the analysis was limited and the sample years for comparing mean values and calculating correlation could not include all the years' post-liberalization. The primary survey was also conducted with a limited sample size of 87 and that too only to consumers of a large metro city. Hence it did not capture the entire Indian mass.

Thus the research study brings out the importance of FDI as a growth engine and furthermore discusses why the amount of FDI should be increased in the economy so as to enhance the FDI performance index in India.

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