"STUDY OF FDI IN INDIA AND ITS IMPACT ON GDP & SECTORAL GROWTH IN INDIA"

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Abstract: The fast and progressively growing Indian economy in majority of its sectors, has made India one of the most prominent and popular destinations in the world, for Foreign Direct Investment. India's ever-expanding markets, liberalization of trade policies, development in technology and telecommunication, and relaxation of diverse foreign investment restrictions, have further collectively made India, the apple of investors' eye, for most productive, profitable and secure foreign investment. According to a recent survey by the United Nations Conference on Trade and Development (UNCTAD), India has clearly emerged out as the second most accepted and preferable destination in the entire world, after China, for highly profitable foreign direct investment.
Key Words: FDI, SEZs, EPZs, UNCTAD, GDP etc

Introduction: In recent years, the bulk of foreign direct investment in Indian business sectors of infrastructure, telecommunication, information technology, computer hardware and software, and hospitality services, have been made by investors from countries like US, UK, Mauritius, Singapore etc.. Global Jurix, one of the leading, full-fledged legal organizations of India with a global repute, has been helping companies, business corporations, organizations, and other potential investors of countries from all around the world, in making foreign direct investment in Indian business sectors, in various ways described in the section below.

Foreign Direct Investment (FDI) plays an extraordinary and growing role in global business. It can provide a firm with new markets and marketing channels, cheaper production facilities, access to new technology, products, skills and financing. For a host country or the foreign firm which receives the investment, it can provide a source of new technologies, capital, processes, products, organizational technologies and management skills, and as such can provide a strong impetus to economic development.

Meaning: Foreign direct investment is investment of foreign assets into domestic structures, equipment, and organizations. It does not include foreign investment into the stock markets. Foreign direct investment is thought to be more useful to a country than investments in the equity of its companies because equity investments are potentially "hot money" which can leave at the first sign of trouble, whereas FDI is durable and generally useful whether things go well or poorly In simple words, FDI refers to long term participation by country A into country B. The process of making a physical investment into another country is known as foreign direct investment (FDI). For example, if a company from one country makes a physical investment in building a factory in another country it is known as FDI. The direct investment in buildings, machinery and

equipment is in contrast with making a portfolio investment, which is considered an indirect investment.

Types of FDI:

On the basis of Direction, FDI is classified into two categories:

1. **Inward:** Inward foreign direct investment is a particular form of inward investment when foreign capital is invested in local resources.

   Inward FDI is encouraged by:

   Tax breaks, subsidies, low interest loans, grants, lifting of certain restrictions. The idea is that the long term gain is worth more than the short term loss of income

   Inward FDI is restricted by:

   - Ownership restraints or limits
   - Differential performance requirements

2. **Outward:** Outward foreign direct investment, sometimes called "direct investment abroad," is when local capital is invested in foreign resources. Yet it can also be used to invest in imports and exports from a foreign commodity country.

   Outward FDI is encouraged by:

   Government-backed insurance to cover risk

   Outward FDI is restricted by:

   - Tax incentives or disincentives on firms that invest outside of the home country or on repatriated profits
   - Subsidies for local businesses
   - Leftist government policies that support the nationalization of industries (or at least a modicum of government control)
   - Self-interested lobby groups and societal sectors who are supported by inward FDI or state investment, for example labour markets and agriculture.
   - Security industries are often kept safe from outwards FDI to ensure localized state control of the military industrial complex

   Foreign Direct Investment (FDI) is permitted as under the following forms of investments.

- Through financial collaborations
- Through joint ventures and technical collaborations

- Through capital markets via Euro issues.
- Through private placements or preferential allotments

On the basis of Target the FDI is classified into:

- ***Greenfield investment***
- ***Mergers and Acquisitions***

Horizontal FDI: is investment in the same industry abroad as a firm operates in at home.

Vertical FDI: Takes two forms:

- **Backward vertical FDI:** where an industry abroad provides inputs for a firm's domestic production process.
- **Forward vertical FDI:** in which an industry abroad sells the outputs of a firm's domestic production processes.

FDI in India: The Indian story of growth in the post liberalization era has been overshadowed by multiple issues connected to the world economy at large. Globalization, liberalization, industrialization and privatization led to tremendous economic growth. In 1991, the government of India introduced economic reforms. Macro finance issues have been addressed by the national policies in several ways so as to give an impetus to growth and development of the nation at large. It has been effectively used as tool to utilize scarce resources and to increase the pace of development. Foreign direct investment has been one of the issues on which there is lot of debate and confusion on the effective use of the same for the growth of the nation.

The fast and progressively growing Indian economy in majority of its sectors, has made India one of the most prominent and popular destinations in the world, for Foreign Direct Investment. India's ever-expanding markets, liberalization of trade policies, development in technology and telecommunication, and loosening of diverse foreign investment restrictions, have further collectively made India, the apple of investors' eye, for most productive, profitable, and secure foreign investment. . According to a recent survey by the United Nations Conference on Trade and Development (UNCTAD), India has clearly emerged out as the second most accepted and preferable destination in the entire world, after China, for highly profitable foreign direct investment.

In recent years, bulk of the foreign direct investment in Indian business sectors of infrastructure, telecommunication, information technology, computer hardware and software, and hospitality

services, have been made by investors of countries like US, UK, Mauritius, Singapore, and many others. Global Jurix, one of the leading full-fledged legal organizations of India with global repute, has been helping companies, business corporations, organizations, and other potential investors of countries all around the world, in making foreign direct investment in Indian business sectors, in various ways described in the section below.

FDI Law Practice India: The **foreign direct investment** in Indian business sectors can easily be made in a variety of ways, through the Governmental and Automatic Routes. However, the Joint Ventures are the most popular and preferred forms of making investment in Indian industry. At present, the most lucrative business sectors for FDI in India are, Infrastructure (Power, Steel, Railways, etc.); Telecommunications; Hospitality sector; Education; Retail; Real Estate; Retail sector, Petroleum and Petroleum Products; Biotechnology; Alternative Energy, etc. Global Jurix can help well-rounded the foreign investors of all class and categories for getting highly lucrative and secure FDI in India, through providing the following legal services reliably and economically:

- Company Formation and Company Law services
- Establishment of Joint ventures
- Corporate and Commercial Law services
- For making all mandatory Compliances
- Drafting all requisite Contracts, Agreements, and other Documents
- Setting up Subsidiaries
- Tax Planning
- Project Finance
- Dispute Resolution
- Private Equity

And, other legal services for FDI in India

Policy: FDI up to 100% is allowed under the automatic route in all activities/sectors except the following which will require approval of the Government:

Activities/items that require an Industrial License;

- Proposals in which the foreign collaborator has a previous/existing venture/ tie up in India in the same or allied field,

- All proposals relating to acquisition of shares in an existing Indian company by a foreign/NRI investor.
- All proposals falling outside notified sectoral policy/caps or under sectors in which FDI is not permitted.

FDI policy is reviewed on an ongoing basis and measures for its further liberalization are taken. Change in sectoral policy/sectoral equity cap is notified from time to time through Press Notes by the Secretariat for Industrial Assistance (SIA) in the Department of Industrial Policy & Promotion. Policy announcement by SIA are subsequently notified by RBI under FEMA. All Press Notes are available at the website of Department of Industrial Policy & Promotion.

Automatic Route: FDI Policy permits FDI up to 100 % from foreign/NRI investor without prior approval in most of the sectors including the services sector under automatic route. FDI in sectors/activities under automatic route does not require any prior approval either by the Government or the RBI. The investors are required to notify the Regional office concerned of RBI of receipt of inward remittances within 30 days of such receipt and will have to file the required documents with that office within 30 days after issue of shares to foreign investors.

Government approval route: All activities which are not covered under the automatic route, prior Government approval for FDI/NRI shall be necessary. Areas/sectors/activities hitherto not open to FDI/NRI investment shall continue to be so unless otherwise decided and notified by Government. An investor can make an application for prior Government approval even when the proposed activity is under the automatic route.

Procedure for obtaining Government approval –FIPB: All proposals for foreign investment requiring Government approval are considered for approval by the Foreign Investment Promotion Board (FIPB). The FIPB also grants composite approvals involving foreign investment/foreign technical collaboration.

For seeking the approval for FDI other than NRI Investments and 100% EOU, applications in form FC-IL should be submitted to the Department of Economic Affairs (DEA), Ministry of Finance.

FDI from NRI & for 100% EOU

FDI applications with NRI Investments and 100% EOU should be submitted to the Public Relation & Complaint (PR&C) Section of Secretariat of Industrial Assistance (SIA), Department of Industrial Policy & Promotion.

Proposals requiring Government's Approval: Application for proposals requiring prior Government's approval should be submitted to FIPB in FC-IL form. Plain paper applications carrying all relevant details are also accepted. No fee is payable. The following information should form part of the proposals submitted to FIPB: -

1) Whether the applicant has had or has any previous/existing financial technical collaboration or trade mark agreement in India in the same or allied field for which approval has been sought; and
2) If so, details thereof and the justification for proposing the new venture/ technical collaboration (including trade marks).
3) Applications can also be submitted with Indian Missions abroad who will forward them to the Department of Economic Affairs for further processing.
4) Foreign investment proposals received in the DEA are placed before the Foreign Investment Promotion Board (FIPB) within 15 days of receipt. The decision of the Government in all cases is usually conveyed by the DEA within 30 days.

FDI Prohibited: FDI is not permissible in the following cases:-

i. Gambling and Betting, or
ii. Lottery Business, or
iii. Business of chit fund
iv. Nidhi Company
v. Housing and Real Estate business.
vi. Trading in Transferable Development Rights (TDRs)
vii. Retail Trading
viii. Atomic Energy
ix. Agricultural or Plantation activities or Agriculture (excluding Floriculture, Horticulture, Development of Seeds, Animal Husbandry, Viticulture and Cultivation of Vegetables, Mushrooms etc. under controlled conditions and services related to agro and allied sectors) and Plantations(other than Tea plantations)

General Permission of RBI under FEMA: RBI has granted general permission under Foreign Exchange Management Act (FEMA) in respect of proposals approved by the Government. Indian companies getting foreign investment approval through FIPB route do not require any

further clearance from RBI for the purpose of receiving inward remittance and issue of shares to the foreign investors. The companies are, however, required to notify the Regional office concerned of the RBI of receipt of inward remittances within 30 days of such receipt and to file the required documents with the concerned Regional offices of the RBI within 30 days after issue of shares to the foreign investors or NRIs.

Investment by Existing companies: Besides new companies, automatic route for FDI/NRI investment is also available to the existing companies proposing to induct foreign equity. For existing companies with an expansion programme the additional requirements include:

a. The increase in equity level resulting from the expansion of the equity base of the existing company without the acquisition of existing shares by NRI/foreign investors,
b. The money to be remitted should be in foreign currency and
c. Proposed expansion programme should be in the sector(s) under automatic route. Otherwise, the proposal would need Government approval through the FIPB. For this the proposal must be supported by a Board Resolution of the existing Indian company.

For existing companies without an expansion programme, the additional requirements for eligibility for automatic approval are:

a. That they are engaged in the industries under automatic route,
b. The increase in equity level must be from expansion of the equity base and
c. The foreign equity must be in foreign currency.

The earlier SEBI requirement, applicable to public limited companies, that shares allotted on preferential basis shall not be transferable in any manner for a period of 5 years from the date of their allotment has now been modified to the extent that not more than 20 per cent of the entire contribution brought in by promoter cumulatively in public or preferential issue shall be locked in.

Participation by international financial institutions: Equity participation by international financial institutions such as ADB, IFC, CDC, DEG, etc. in domestic companies is permitted through automatic route subject to SEBI/RBI regulations and sector specific cap on FDI.

Issue and valuation of shares in case of existing companies: In case of listed companies, according to RBI/SEBI guidelines, the issue price shall be either at:

a. The average of the weekly high and low of the closing prices of the related shares quoted on the stock exchange during the six months preceding the relevant date or

b. The average of the weekly high and low of the closing prices of the related shares quoted on the stock exchange during the two weeks preceding the relevant date.
c. The stock exchange referred to is the one at which the highest trading volume in respect of the share of the company has been recorded during the preceding six months prior to the relevant date.
d. The relevant date is the date thirty days prior to the date on which the meeting of the General Body of the shareholders is convened.
e. In all other cases a company may issue shares as per the RBI regulation in accordance with the guidelines issued by the erstwhile Controller of Capital Issues.

Other relevant guidelines of Securities and Exchange Board of India (SEBI)/ RBI including the SEBI (Substantial Acquisition of Shares and Takeover) Regulations, 1997, wherever applicable, would need to be followed. Further information could be obtained at Security and Exchange Board of India's (SEBI) website: www.sebi.gov.in

ADR/GDR: An Indian corporate can raise foreign currency resources abroad through the issue of American Depository Receipts (ADRs) or Global Depository Receipts (GDRs). Regulation 4 of Schedule I of FEMA Notification no. 20 allows an Indian company to issue its Rupee denominated shares to a person resident outside India being a depository for the purpose of issuing Global Depository Receipts (GDRs) and/ or American Depository Receipts (ADRs), subject to the conditions that:

The ADRs/GDRs are issued in accordance with the Scheme for issue of Foreign Currency Convertible Bonds and Ordinary Shares (Through Depository Receipt Mechanism) Scheme, 1993 and guidelines issued by the Central Government there under from time to time.

The Indian company issuing such shares has an approval from the Ministry of Finance, Government of India to issue such ADRs and/or GDRs or is eligible to issue ADRs/ GDRs in terms of the relevant scheme in force or notification issued by the Ministry of Finance, and There are no end-use restrictions on GDR/ADR issue proceeds, except for an express ban on investment in real estate and stock markets.

The FCCB issue proceeds need to confirm to external commercial borrowing end user requirements; in addition, 25 per cent of the FCCB proceeds can be used for general corporate restructuring. Is not otherwise ineligible to issue shares to people's resident outside India in terms of these Regulations.

There is no limit up to which an Indian company can raise ADRs/GDRs. However, the Indian company has to be otherwise eligible to raise foreign equity under the extant FDI policy.

A company engaged in the manufacture of items covered under Automatic route, whose direct foreign investment after a proposed GDRs/ADRs/FCCBs issue is likely to exceed the percentage limits under the automatic route, or which is implementing a project falling under government approval route, would need to obtain prior government clearance through FIPB before seeking final approval from the Ministry of Finance.

Foreign currency convertible Bonds FCCBs are issued in accordance with the scheme [the Scheme for issue of Foreign Currency Convertible Bonds and Ordinary Shares (Through Depository Receipt Mechanism) Scheme, 1993] and subscribed by a non-resident in foreign currency and convertible into ordinary shares of the issuing company in any manner, either in whole, or in part, on the basis of any equity related warrants attached to debt instruments;

Eligibility: The eligibility for issue of Convertible Bonds or Ordinary Shares of Issuing Company is given as under:

1. An issuing company desirous of raising foreign funds by issuing Foreign Currency Convertible Bonds or ordinary shares for equity issues through Global Depositary Receipt
2. Can issue FCCBs up to USD 50 Million under the Automatic route,
3. From USD 50 –100 Million, the companies have to take RBI approval,
4. From USD 100 Million and above, prior permission of the Department of Economic Affairs is required.

Preference shares: Foreign investment through preference shares is treated as foreign direct investment. Proposals are processed either through the automatic route or FIPB as the case may be, as per the following guidelines:-

i. Foreign investments in preference share are considered as part of share capital and fall outside the External Commercial Borrowing (ECB) guidelines/ cap.

ii. Preference shares to be treated as foreign direct equity for purpose of sectoral caps on foreign equity, where such caps are prescribed, provided they carry a conversion option. Preference shares structured without such conversion option fall outside the foreign direct equity cap.

iii. Duration for conversion shall be as per the maximum limit prescribed under the Companies Act or what has been agreed to in the shareholders agreement whichever less is.

iv. The dividend rate would not exceed the limit prescribed by the Ministry of Finance.

v. Issue of preference shares should conform to guidelines prescribed by the SEBI and Companies Act.

RBI and other statutory requirements: FDI in EOUs/SEZs/Industrial Park/EHTP/STP

Special Economic Zones (SEZs)

100% FDI is permitted under automatic route for setting up of Special Economic Zone.

Units in SEZ qualify for approval through automatic route subject to sectoral norms. Details about the type of activities permitted are available in the Foreign Trade Policy issued by Department of Commerce. Proposals not covered under the automatic route require approval by FIPB.

100% Export Oriented Units (EOUs): 100% FDI is permitted under automatic route for setting up 100% EOU, subject to sectoral norms. Proposals not covered under the automatic route would be considered and approved by FIPB.

Industrial Park: 100% FDI is permitted under automatic route for setting up of Industrial Park

Electronic Hardware Technology Park (EHTP) Units

All proposals for FDI/NRI investment in EHTP Units are eligible for approval under automatic route. For proposals not covered under automatic route, the applicant should seek separate approval of the FIPB.

Software Technology park Units: All proposals for FDI/NRI investment in STP Units are eligible for approval under automatic route. For proposals not covered under automatic route, the applicant should seek separate approval of the FIPB

Capitalization of Import Payables

FDI inflows are required to be under the following modes;

i. By inward remittances through normal banking channels or

ii. By debit to the specified account of person concerned maintained in an authorized dealer/authorized bank. Issue of equity to non-residents against other modes of FDI inflows or in kind is not permissible. However, Issue of equity shares against lump sum fee, royalty payable

and external commercial borrowings (ECBs) in convertible foreign currency are permitted, subject to meeting all applicable tax liabilities and sector specific guidelines.

Foreign Direct Investment (FDI) is permitted as under the following forms of investments.

- Through financial collaborations
- Through joint ventures and technical collaborations
- Through capital markets via Euro issues

Through private placements or preferential allotments

In percentage:

- Banking - 74%
- Non-banking financial companies (stock broking, credit cards, financial consulting, etc.) - 100%
- Insurance - 26%
- Telecommunications - 74%
- Private petrol refining - 100%
- Construction development - 100%
- Coal & lignite - 74%
- Trading - 51%
- Electricity - 100%
- Pharmaceuticals - 100%
- Transportation infrastructure - 100 %
- Tourism - 100%
- Mining - 74%
- Advertising - 100%
- Airports - 74%
- Films - 100%
- Domestic airlines - 49%
- Mass transit - 100%
- Pollution control - 100%
- Print media - 26% for newspapers and current events, 100 % for scientific and technical periodicals

FDI is not permitted in the following industrial sectors:

- Arms and ammunition.
- Atomic Energy.
- Railway Transport.
- Coal and lignite.
- Mining of iron, manganese, chrome, gypsum, sulphur, gold, diamonds, copper, zinc.
- Gambling and Betting
- Lottery Business
- Agriculture (with certain exceptions) and Plantations (Other than Tea plantations)

Total foreign investment and FDI

Total foreign investment in IFY 1997-98 was estimated at 4.8 billion $ in 1997-98, compared to 6 billion $ in 1996-97. Foreign Direct Investment (FDI) in 1997-98 was an estimated 3.1 billion $, up from 2.7 billion $ in1996-97. The government is likely to double FDI inflows within two years. Foreign portfolio investment by foreign institutional investors was significantly lower at 752 million $ for fiscal 1997-98, down compared to 1.9 billion $ in1996-97, partly reflecting the effect of the recent crisis in Asia.

Factors affecting FDI Inflows in India

- Domestic market potentials
- Low wage rates
- Low transactions costs
- High rates of return
- Labour mobility
- Matured capital market
- Modern financial system
- Efficient infrastructure
- Established legal and institutional set-up
- Transparent rules and regulations
- Administrative speed and efficiency
- SEZs, EPZs etc.
- Fourth largest economy in terms of PPP adjusted GDP after USA, China and Japan

- One of ten fastest economies of the world
- Largest pool of technical manpower
- Demographic dividend- youngest workforce
- Rich in mineral and natural resources
- Major country in agricultural and industrial products
- Fiscal incentives and investment environment
- Low wage rates and low production costs
- High Return and Huge domestic market
- Well developed banking and capital market.
- Dynamic private sector

National treatment to foreign investors

- Most favored nation treatment (MFN)
- Free transfer of profits and dividends
- International standards for laws
- International arbitration in the case of disputes
- Protection of intellectual property rights (IPR)
- Right to employ management of its choice
- The formation of regional trading blocks such as NAFTA, ASEAN, APEC, SAARC etc. had also an important impact on the FDI pattern
- In future, countries outside the regional blocks might have disadvantages in attracting FDI.

Improving global sentiment and a growing conducive environment in India are increasingly facilitating foreign investors' role in the country currently. Several other factors being attributed to the revival in foreign direct investments (FDI) in the country include liberal investment policies and reforms, innovative and technologically advanced products being manufactured in India and low cost and effective solutions.

India has been ranked at the third place in global foreign direct investments this year, following the economic meltdown, and will continue to remain among the top five attractive destinations for international investors during the next two years, according to United Nations Conference on Trade and Development (UNCTAD) in a new report on world investment prospects titled, 'World Investment Prospects Survey 2009-2011'.

Thus I have decided to study the impact and role of FDI on Indian economy.

Objectives of the Study

1. To study the effects of FDI on GDP.
2. To study the Sector wise FDI inflow in India and their share in GDP.

Null Hypotheses **Ho:** There is no correlation between FDI and GDP.

Scope and Delimitation of the Study: The study was conducted to study the correlation between FDI inflow and GDP of India. Thus the GDP of the country between 1981 and 2011 were taking into consideration to study the correlation between these two variables. The GDP of other countries were not taken into consideration as the study was delimited to find out the correlation between GDP and FDI inflow in India. This study also examined the Sector wise FDI inflow and their share in GDP, thus the Sector wise FDI inflow was also considered.

DATA COLLECTION: This study also dealt with the Sector wise FDI inflow and their contribution in the GDP of India. Thus, this study incorporated an exploratory approach in the phenomenon because it aims to determine the present facts as well as facts that are not yet explored about the phenomenon. Exploratory research enabled the study or look at the problem in both descriptive and exploratory manner.

For this study it is not possible for the researcher to collect the primary data due to very vast sample and short period of time. Therefore, the researcher collected data from the secondary sources. Information and data was gathered from the secondary sources i.e. reports of WTO, RBI Reports, World Investment Reports, World Bank Reports, Publications from Ministry of Commerce and, Government of India, Different financial websites and various Newspaper, Journals.

Significance of the Study:

- The study will be helpful to different stakeholders in the field of finance and commerce as well as to the business society in general.
- This study will be helpful for the Government to frame the positive policy to attract more FDI inflow in India.

- This study will also help the businessmen to understand which sector is attracting more FDI and how much a particular sector is contributing to the GDP, so they can also take certain decision which help them to obtain more FDI.
- This study will certainly help the businessmen, financial institutions, policy makers and government to understand the correlation between FDI inflow and GDP of India, so they can frame / adopt such policies which accelerate FDI inflow and thus result in economic development.

Study the effects of FDI on GDP:

To be more accurate, GDP is defined as the total value of all finished goods and services produced within a given year. This roughly estimates how much "stuff" consumers get to eat, as well as how much income earned domestically.

There are two models for measuring GDP, the expenditure model, and the income model. In theory, since GDP measures both income and expenditure within the economy (as well as total output of goods and services 1 these two measures should be identical; in practice there are a number of reasons this isn't true 2.

GDP, when measured in an expenditure model, is defined by the formula C + I + G + NX, where "C" represents consumer spending (on final goods and services), "I" represents real investment (in creation of capital structures), "G" is government spending, and NX is net exports (exports minus imports). The primary reason post-Keynesian economists have divided "C" and "G," in the accounts, rather than making them a single "S" for spending, is that it makes it easier to treat consumer spending as endogenous, while calling government spending exogenous, then consider how the economy would conform to different levels of government spending.

I have used Pearson's correlation and regression analysis techniques to find out the association between FDI inflow and GDP of India.

Table 1: Year-wise Inflow of FDI in India GDP of India

YEAR	FDI INFLOW IN INDIA Amount in million US $	GDP OF INDIA Amount in Crores	GDP OF INDIA Amount in million US $
1980	451.75	110887	21025
1981	543.67	132520	25127
1982	615.75	155158	29419

1983	621.39	173337	32866
1984	640.63	202750	38443
1985	746.72	227694	43173
1986	864.45	254427	48242
1987	1076.77	283681	53789
1988	1168.02	321589	60976
1989	1420.12	383790	72770
1990	1656.81	442134	83833
1991	1731.81	515032	97655
1992	1983.81	594168	112660
1993	2515.81	681517	129222
1994	3489.81	792150	150199
1995	5640.81	925239	175434
1996	8165.81	1083289	205402
1997	10630.10	1260710	239042
1998	14065.36	1401934	265820
1999	15426.10	1616082	306424
2000	16338.95	1786526	338742
2001	19675.92	1925017	365001
2002	25826.28	2097726	397749
2003	32549.19	2261415	428786
2004	38060.24	2538170	481261
2005	43201.58	2971464	563418
2006	70870.28	3389621	642704
2007	105790.49	3952241	749382
2008	125211.65	4581422	868681
2009	167023.18	5282086	1001533
2010	197939.29	6133230	1162918

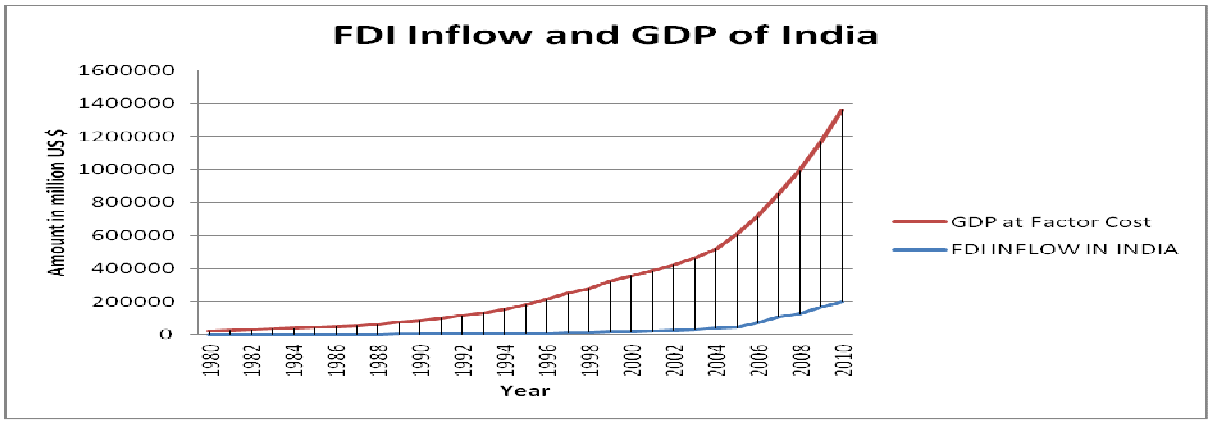
TOTAL	**915942.55**	**48477006**	**9191696**
AVERAGE	**29546.53**	**1563774.39**	**296506.32**

Source: FDI (UNCTAD) and GDP (RBI)

The FDI inflow amounts were taken from the report published by UNCTAD. The amounts are given in US million $. The GDP amounts were taken from the report published by Reserve Bank of India. The amounts were given financial year-wise. I have recorded the GDP of the financial year 1979 - 1980 in the year 1980 of the above table. Like this I have recorded the GDP of all the years. The amounts were given in Indian (corers) rupees. I wanted to find out the correlation between FDI inflow and GDP of India, thus I have converted the amounts of GDP in US million $. First, I have converted the amount from corer to million by multiplying the amounts by 10 as 10 lakh is equal to one million. Then the amount was converted into US $. In December 2011, One US $ was equal to 52.74 Indian Rupees. Therefore, I have divided the amounts by 52.74 and converted the amount in US million $.

The above table shows that the FDI inflow was increasing continuously from the year 1980. The GDP of India was continuously increasing form the year 1980. In the earlier chapter, it was shown that from the year 2006 there was a rapid increase in the FDI inflow and till 2010 the FDI inflow was doubled as compared to 2006. The above table shows that there was a rapid increase in the GDP of India from the year 2007. The GDP was 6, 42,704 US million $ in the year 2006 and it was increased to 7, 49,382 US million $ in the year 2007 and from then the rapid increase was continue till 2010.

Graph 1: The following graph shows the graphical representation of the FDI inflow and GDP of India from the year 1980 to 2010.



Testing Hypothesis: There is no correlation between FDI and GDP.

Knowing that any investment has impact on production only after some time, I have tested the correlation between FDI inflow in one year and GDP in the next year. Time lag is necessary in every statistical study of the influence of investments.

The following table is drawn to calculate the correlation between FDI inflow and GDP of India.

Table 2: Year-wise Inflow of FDI in India GDP of India

YEAR	FDI INFLOW IN INDIA Amount in million US $ X	GDP OF INDIA Amount in million US $ Y
1981	543.67	25127
1982	615.75	29419
1983	621.39	32866
1984	640.63	38443
1985	746.72	43173
1986	864.45	48242
1987	1076.77	53789
1988	1168.02	60976
1989	1420.12	72770
1990	1656.81	83833

1991	1731.81	97655
1992	1983.81	112660
1993	2515.81	129222
1994	3489.81	150199
1995	5640.81	175434
1996	8165.81	205402
1997	10630.10	239042
1998	14065.36	265820
1999	15426.10	306424
2000	16338.95	338742
2001	19675.92	365001
2002	25826.28	397749
2003	32549.19	428786
2004	38060.24	481261
2005	43201.58	563418
2006	70870.28	642704
2007	105790.49	749382
2008	125211.65	868681
2009	167023.18	1001533
2010	197939.29	1162918

Karl Pearson's Coefficient of Correlation = **0.957874**

To test the hypothesis that there is no relation between FDI inflow and GDP of India, the t-test of significance of 'r' can be used as follows.

H_0: The value of correlation coefficient is not significant. i.e. there is no correlation between FDI inflow and GDP of India.

H_1: The value of correlation coefficient is significant. i.e. there is correlation between FDI inflow and GDP of India.

For t- test the degrees of freedom = n-2 = 28

t- statistic = $\frac{r}{\sqrt{\frac{1-r^2}{n-2}}}$ = 17.64894

For 28 degrees of freedom table values are = 2.048 for 5% l.o.s. and 2.763 for 15 l.o.s.

Since calculated value of t-statistic is > table values (critical values), H_0 is rejected.

Conclusion: **The value of correlation coefficient is significant. i.e.**

There is correlation between FDI inflow and GDP of India.

The value of r is **0.957874** which shows the strong positive correlation or association between FDI inflow and GDP of India. It means that if the FDI inflow will increase, the value of GDP will also increase. As per the result, if the one rupee come as a FDI then the GDP of India will increase by approx 96 paise.

Coefficient of Determination: The coefficient of determination is the ratio of the explained variation to the total variation.

Value correlation and coefficient of determination between FDI inflow and GDP of India

r	r^2
0.957874	0.9175

The coefficient of Determination of FDI and GDP of India is 0.9175 it means that 91.75% of the total variation in GDP of India can be explained by the linear relationship between FDI inflows in India. The other 8.25% of the total variation in GDP of India remains unexplained.

Regression Analysis: The following table was used for regression analysis.

Table 3: Year-wise Inflow of FDI in India GDP of India

YEAR	FDI INFLOW IN INDIA Amount in million US $ X	GDP OF INDIA Amount in million US $ Y
1981	543.67	25127
1982	615.75	29419

1983	621.39	32866
1984	640.63	38443
1985	746.72	43173
1986	864.45	48242
1987	1076.77	53789
1988	1168.02	60976
1989	1420.12	72770
1990	1656.81	83833
1991	1731.81	97655
1992	1983.81	112660
1993	2515.81	129222
1994	3489.81	150199
1995	5640.81	175434
1996	8165.81	205402
1997	10630.10	239042
1998	14065.36	265820
1999	15426.10	306424
2000	16338.95	338742
2001	19675.92	365001
2002	25826.28	397749
2003	32549.19	428786
2004	38060.24	481261
2005	43201.58	563418
2006	70870.28	642704
2007	105790.49	749382
2008	125211.65	868681
2009	167023.18	1001533
2010	197939.29	1162918

Slope (b) = $(N\Sigma XY - (\Sigma X)(\Sigma Y)) / (N\Sigma X^2 - (\Sigma X)^2)$

= 5.764733

Intercept (a) = $(\Sigma Y - b(\Sigma x)) / N$

= 129770.4

Regression Equation (y) = a + bx

Y = 129770.4 + (5.764733)*X

This Regression Equation can be used to estimate GDP in US $ if FDI inflow is known for future years.

Table 4: Sector wise FDI inflow in India and their share in GDP:

Year-wise and FDI Inflow in Different Sectors of India

S.No	*Sector*	**2000 - 2009**	**Average FDI Inflow (2000 - 2009)**	**2009 - 2010**		**2010 - 2011**	
		FDI Inflow		***FDI Inflow***	***%age to total FDI Inflows***	***FDI Inflow***	***%age to total FDI Inflows***
		(In US$ million)		***(In US$ million)***		***(In US$ million)***	
1	SERVICES SECTOR	19248.48	2138.72	4,391.93	17.02	3,403.08	17.52
2	HOUSING & REAL ESTATE (INCLUDING CINEPLEX, MULTIPLEX, INTEGRATED TOWNSHIPS & COMMERCIAL COMPLEXES ETC.)	5512.49	612.50	2,844.11	11.04	1,127.00	5.8
3	CONSTRUCTION ACTIVITIES	5191.01	576.78	2,867.92	11	1,124.60	5.79
4	TELECOMMUNICATIONS	6376.66	708.52	2,553.95	10.02	1,664.50	8.57
5	POWER	3190.14	354.46	1,437.25	5.61	1,252.33	6.45
6	AGRICULTURE SERVICES	188.39	20.93	1,317.07	5.18	43.9	0.23
7	AUTOMOBILE INDUSTRY	3388.37	376.49	1,176.61	4.56	1,330.78	6.85
8	MISCELLANEOUS INDUSTRIES	4443.29	493.70	1048.62	4.02	1,532.92	7.87
9	COMPUTER SOFTWARE & HARDWARE	8953.83	994.87	918.66	3.53	784.3	4.04

10	HOTEL & TOURISM	1303.3	144.81	748.26	2.88	320.73	1.65
11	ELECTRICAL EQUIPMENTS	1489.82	165.54	656.72	2.55	162.79	0.84
12	TRADING	1526.34	169.59	578.6	2.24	486.41	2.5
13	INFORMATION & BROADCASTING (INCLUDING PRINT MEDIA)	1329.8	147.76	491.35	1.9	412.11	2.12
14	NON-CONVENTIONAL ENERGY	136.44	15.16	497.91	1.87	194.59	1
15	METALLURGICAL INDUSTRIES	2723.25	302.58	406.67	1.57	1,104.78	5.69
16	CHEMICALS (OTHER THAN FERTILIZERS)	2133.95	237.11	361.83	1.39	398.64	2.05
17	INDUSTRIAL MACHINERY	332.68	36.96	353.65	1.34	563.44	2.9
18	CONSULTANCY SERVICES	1224.55	136.06	344.59	1.33	267.34	1.38
19	PETROLEUM & NATURAL GAS	2393.41	265.93	272.11	1.08	573.62	2.95
20	FOOD PROCESSING INDUSTRIES	763.29	84.81	279.33	1.07	188.67	0.97
21	SEA TRANSPORT	416.25	46.25	275.47	1.06	290.58	1.5
22	DRUGS & PHARMACEUTICALS	1457.91	161.99	212.86	0.82	212	1.09
23	MINING	540.81	60.09	174.04	0.67	84	0.43
24	MEDICAL AND SURGICAL APPLIANCES	180.17	20.02	167.4	0.64	42.52	0.22
25	RETAIL TRADING (SINGLE BRAND)	32.17	3.57	162.52	0.62	39.96	0.21
26	MISCELLANEOUS MECHANICAL & ENGINEERING INDUSTRIES	653.64	72.63	142.23	0.56	108.7	0.56
27	TEXTILES (INCLUDING DYED,PRINTED)	676.87	75.21	140.39	0.54	129.65	0.67
28	HOSPITAL & DIAGNOSTIC CENTRES	646.42	71.82	135.91	0.52	256	1.32
29	MACHINE TOOLS	248.31	27.59	133.84	0.52	11.99	0.06
30	FERMENTATION	658.12	73.12	112.02	0.44	57.71	0.3

	INDUSTRIES						
31	COMMERCIAL, OFFICE & HOUSEHOLD EQUIPMENTS	135.26	15.03	78.62	0.3	25.12	0.13
32	VEGETABLE OILS AND VANASPATI	83.73	9.30	68.76	0.27	58.08	0.3
33	PRINTING OF BOOKS (INCLUDING LITHO PRINTING INDUSTRY)	136.18	15.13	69.43	0.27	36.63	0.19
34	PORTS	1558.75	173.19	65.41	0.25	10.92	0.06
35	EDUCATION	311.53	34.61	58.05	0.22	37.94	0.2
36	ELECTRONICS	749.77	83.31	50.55	0.19	60.23	0.31
37	RAILWAY RELATED COMPONENTS	75.33	8.37	34.23	0.13	23.26	0.12
38	CEMENT AND GYPSUM PRODUCTS	1674.89	186.10	33.8	0.13	637.68	3.28
39	DIAMOND,GOLD ORNAMENTS	251.05	27.89	30.95	0.12	19.59	0.1
40	SOAPS, COSMETICS & TOILET PREPARATIONS	127.49	14.17	24.58	0.1	103.1	0.53
41	RUBBER GOODS	262.11	29.12	24.12	0.09	17.21	0.09
42	AIR TRANSPORT (INCLUDING AIR FREIGHT)	210.91	23.43	18.28	0.07	136.6	0.7
43	PAPER AND PULP (INCLUDING PAPER PRODUCTS)	429.89	47.77	16.42	0.06	6.53	0.03
44	CERAMICS	409.96	45.55	8.96	0.03	11.89	0.06
45	FERTILIZERS	101.15	11.24	8.2	0.03	18.18	0.09
46	INDUSTRIAL INSTRUMENTS	29.46	3.27	7.61	0.03	25.19	0.13
47	TEA AND COFFEE (PROCESSING & WAREHOUSING COFFEE & RUBBER)	84.29	9.37	7.71	0.03	3.12	0.02
48	TIMBER PRODUCTS	12.26	1.36	6.54	0.02	1.58	0.01
49	LEATHER,LEATHER GOODS AND PICKERS	37.56	4.17	5.06	0.02	9.26	0.05

50	DYE-STUFFS	9.52	1.06	4.02	0.02	5.37	0.03
51	BOILERS AND STEAM GENERATING PLANTS	5.39	0.60	3.96	0.02	0.63	0
52	GLASS	134.93	14.99	2.83	0.01	7.6	0.04
53	AGRICULTRUAL MACHINERY	148.37	16.49	1.88	0.01	0.49	0
54	GLUE AND GELATIN	8.44	0.94	0.27	0	0.01	0
55	COIR	1.12	0.12	0.25	0	0.1	0
56	SUGAR	41.58	4.62	0.1	0	0.17	0
57	PHOTOGRAPHIC RAW FILM AND PAPER	63.9	7.10	0.002	0	0.81	0
Grand Total		**84454.98**	**9383.89**	**25834.41**	**100**	**19426.9**	**100**

Source: Ministry of Commerce, Government of India. (www.dipp.nic.in)

Table 5: Percentage FDI Inflow Sector wise, Year wise

Sr.No.	Sector	2009-10	2010-11
1	SERVICES	17.02	17.52
2	HOUSING & REAL ESTATE	11.04	5.8
3	CONSTRUCTION ACTIVITIES	11	5.79
4	TELECOMMUNICATIONS	10.02	8.57
5	POWER	5.61	6.45
6	AGRICULTURE SERVICES	5.18	0.23
7	AUTOMOBILE INDUSTRY	4.56	6.85
8	MISCELLANEOUS INDUSTRIES	4.02	7.87
9	COMPUTER SOFTWARE & HARDWARE	3.53	4.04
10	HOTEL & TOURISM	2.88	1.65
11	ELECTRICAL EQUIPMENTS	2.55	0.84

12	TRADING	2.24	2.5
13	INFORMATION & BROADCASTING (INCLUDING PRINT MEDIA)	1.9	2.12
14	NON-CONVENTIONAL ENERGY	1.87	1
15	METALLURGICAL INDUSTRIES	1.57	5.69

Graph 2: Percentage FDI Inflow Sector wise & Year wise

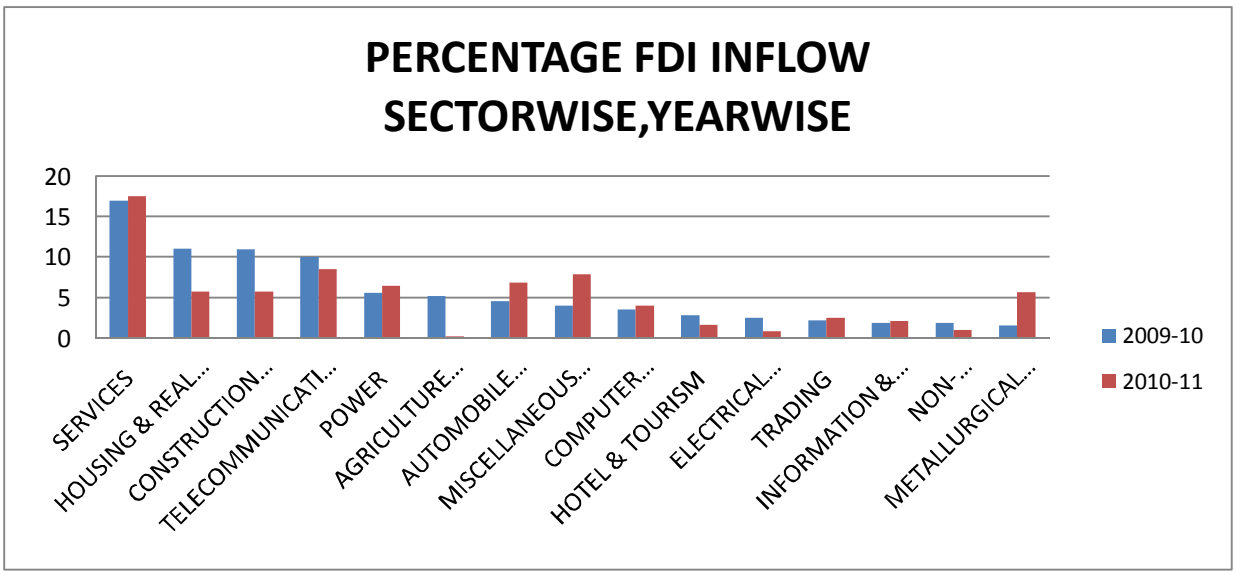


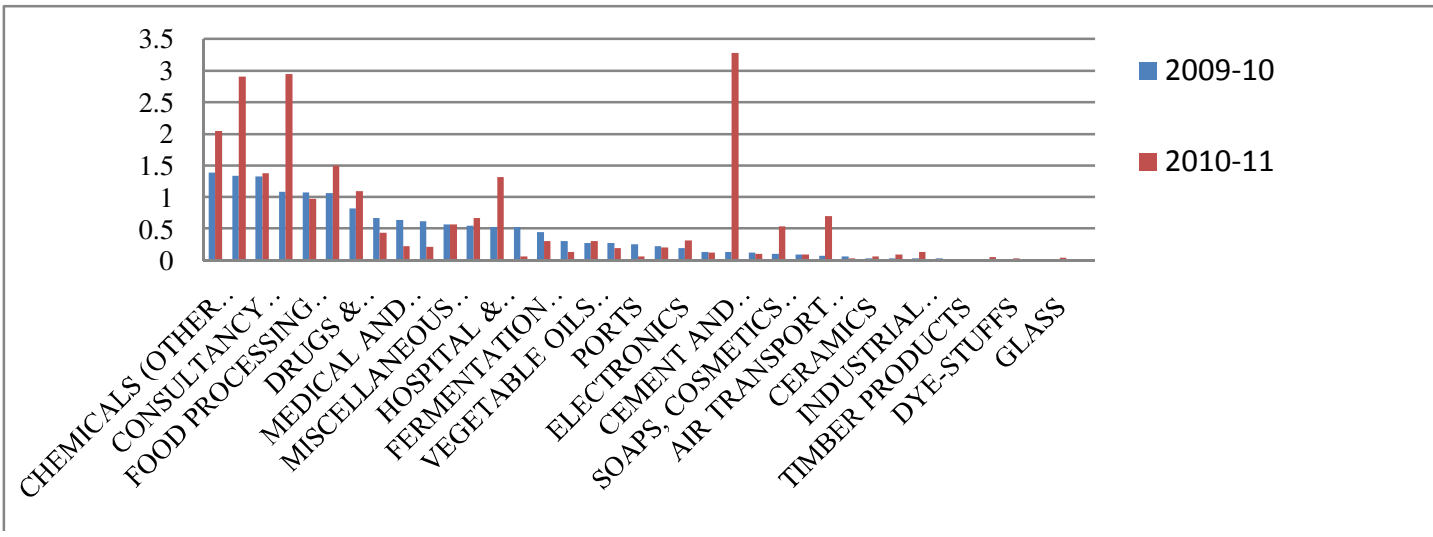
Table 6: Percentage FDI Inflow Sector wise, Year wise

Sr.No.	Sector	2009-10	2010-11
1	CHEMICALS (OTHER THAN FERTILIZERS)	1.39	2.05
2	INDUSTRIAL MACHINERY	1.34	2.9
3	CONSULTANCY SERVICES	1.33	1.38
4	PETROLEUM & NATURAL GAS	1.08	2.95
5	FOOD PROCESSING INDUSTRIES	1.07	0.97

6	SEA TRANSPORT	1.06	1.5
7	DRUGS & PHARMACEUTICALS	0.82	1.09
8	MINING	0.67	0.43
9	MEDICAL AND SURGICAL APPLIANCES	0.64	0.22
10	RETAIL TRADING (SINGLE BRAND)	0.62	0.21
11	MISCELLANEOUS MECHANICAL & ENGINEERING INDUSTRIES	0.56	0.56
12	TEXTILES (INCLUDING DYED,PRINTED)	0.54	0.67
13	HOSPITAL & DIAGNOSTIC CENTRES	0.52	1.32
14	MACHINE TOOLS	0.52	0.06
15	FERMENTATION INDUSTRIES	0.44	0.3
16	COMMERCIAL, OFFICE & HOUSEHOLD EQUIPMENTS	0.3	0.13
17	VEGETABLE OILS AND VANASPATI	0.27	0.3
18	PRINTING OF BOOKS (INCLUDING LITHO PRINTING INDUSTRY)	0.27	0.19
19	PORTS	0.25	0.06
20	EDUCATION	0.22	0.2
21	ELECTRONICS	0.19	0.31
22	RAILWAY RELATED COMPONENTS	0.13	0.12
23	CEMENT AND GYPSUM PRODUCTS	0.13	3.28
24	DIAMOND,GOLD ORNAMENTS	0.12	0.1
25	SOAPS, COSMETICS & TOILET PREPARATIONS	0.1	0.53
26	RUBBER GOODS	0.09	0.09
27	AIR TRANSPORT (INCLUDING AIR FREIGHT)	0.07	0.7
28	PAPER AND PULP (INCLUDING PAPER PRODUCTS)	0.06	0.03
29	CERAMICS	0.03	0.06

30	FERTILIZERS	0.03	0.09
31	INDUSTRIAL INSTRUMENTS	0.03	0.13
32	TEA AND COFFEE (PROCESSING & WAREHOUSING COFFEE & RUBBER)	0.03	0.02
33	TIMBER PRODUCTS	0.02	0.01
34	LEATHER,LEATHER GOODS AND PICKERS	0.02	0.05
35	DYE-STUFFS	0.02	0.03
36	BOILERS AND STEAM GENERATING PLANTS	0.02	0
37	GLASS	0.01	0.04
38	AGRICULTRUAL MACHINERY	0.01	0

Chart 3: Percentage FDI Inflow Sector wise and Year wise



The above table shows the sector wise cumulative FDI inflows form the year 2000 to 2009 and the sector wise FDI inflows for the years 2009 – 2010 and 2010 – 2011. The above table indicates that the average FDI inflow during 2000 – 2009 was 9,383.89 US million $. In the year 2009 – 2010, the FDI inflow was 25,834.41 US million $. It shows the rapid increase in the FDI inflow in India. The FDI inflow was increase approx. 275% in 2009 – 2010 as compared to average FDI inflow during 2000 – 2009. In the year 2009 – 2010 due recessions in different countries of the world, the FDI inflow was decreased. The total FDI inflow in India was 19426.9 US million $.

During 2000 - 2009 the average FDI inflow in **service sector** was 2138.72 US million $. But this sector was able to increase FDI inflow to 200% in the year 2009 and become the sector which attracted the highest FDI inflow. In the year 2009 - 2010, this sector attracted 4,391.93 US million $ which was 17.02% of the total FDI inflow in India. In the year 2010 – 2011, this sector attracted 3,403.08 US million $ which was 17.52% of the total FDI inflow in India.

The **Indian real estate** and housing space emerged as the darling of foreign investors from the year 2007-08 because the average rate of return of this sector stood at 25-35 per cent in India, against a global average of single digit return. In the year 2005 – 2006 the FDI inflow in real state was 38 US million $ which increased up to 467 US million $ in the year 2006 – 2007.

In the year 2007 – 2008 the FDI inflow in this sector was Rs.2179 US million $. In this year FDI inflow was increased approximately 500%. From then this sector stood fifth position in attracting the highest FDI inflow. In the next two years the FDI inflow in real state sector was 2844.11 US million $ and 1,127 US million $ respectively. The percentage of total FDI inflow in this sector was reduced from 11.04% to 5.8% due to recession, but still stand in the second position in attracting the FDI inflow in India.

As FDI inflow in **construction activity** is started from the financial year 2005 – 2006, its average inflow till 2009 was 576.78 US million $. In the year 2009 – 2010 the FDI inflow was 2,867.92 US million $ in this sector and it's the got the sixth position in attracting the FDI inflows. This position continued in the financial year 2010 – 2011 and this sector was able to attract 1,124.60 US million $, which is 5.79% of the total FDI inflow in India.

Telecommunication sector till 2009 attracted average 708.52 US million $ every year. In the year 2009 – 2010 it attracted 2,553.95 US million $ and in the next year attracted 1664.50 US million $. It holds the second position in attracting the highest FDI inflow in India.

The data showed that till 2009 **power sector** attracted average 354.46 US million $ every year. In the year 2009 – 2010 the FDI inflow in this sector was 1,437.25 US million $ and in the next year it attracted 1,252.33 US million $ and holds the fourth position in attracting the highest FDI inflow. It attracted 6.45% of the total FDI inflow in India.

The data had shown that from the year 2000 till 2009 the average FDI inflow in **Agricultural services sector** was 20.93 US million $. In the year 2009 – 2010 there was a remarkable increase in FDI inflow. In this year agricultural sector attracted 1317.07 US million $ while in the next

year the FDI inflow in this sector was remarkably low and it was able to attract only 43.9 US million $ as FDI.

The data showed that from the year 2000 till 2009 the average FDI inflow in **automobile industry** was 376.49 US million $ every year. In the year 2009 – 2010 this sector attracted 1176.61 US million $ and in the next year i.e. 2010 – 2011 it attracted 1,330.78 US million $. It holds the third position in attracting the highest FDI inflow. Inspite of recession automobile industry was the only sector in which the FDI inflow was increased. It increased from 4.56% to 6.85% in terms of percentage of total FDI inflows in India.

The data showed that from the year 2000 till 2009 the average FDI inflow in **Computer Software and Hardware sector** was 994.87 US million $. Approximately the FDI inflow in this sector was same in every year. In the year 2009 – 2010 it attracted 918.66 US million $ and in the next year was able to attract 784.3 US million $. However the reduction in FDI inflow in this sector was seen but its percentage share in FDI inflow was increased from 3.53% to 4.04%.

The average FDI inflow in **trading sector** from the year 2000 – 2009 was 169.59 US million $. It was increased up to 578.6 US million dollar in the year 2009 – 2010. In the year 2010 – 2011 the FDI inflow in this sector was 486.41 US million $. 2.5% of the total FDI flows in trading sector.

The average FDI inflow in **information and broadcasting sector** from the year 2000 to 2009 was 147.76 US million $. In the year 2009 – 2010 the FDI inflows in this sector was 491.35 US million $ and in the next year it was 412.11 US million $. It attracted 2.12% of the Total FDI inflows of India.

The average FDI inflow in **Chemicals (Other than Fertilizers) sector** from the year 2000 to 2009 was 237.11 US million $, which increased up to 361.83 US million in the next year i.e. 2009 – 2010. The FDI inflow in chemical sector further increased up to 398.64 US million $ in the year 2010 – 2011. Chemical sectors attracted 2.05% of the total FDI inflows.

The average FDI inflow in **Industrial machinery** from the year 2000 to 2009 was 36.96 US million $, which was increased up to 353.65 US million $ in the year 2009 – 2010, which was further increased up to 563.44 US million $ in the next year i.e. 2010 – 2011. This sector attracted 2.9% of the total FDI inflows in India.

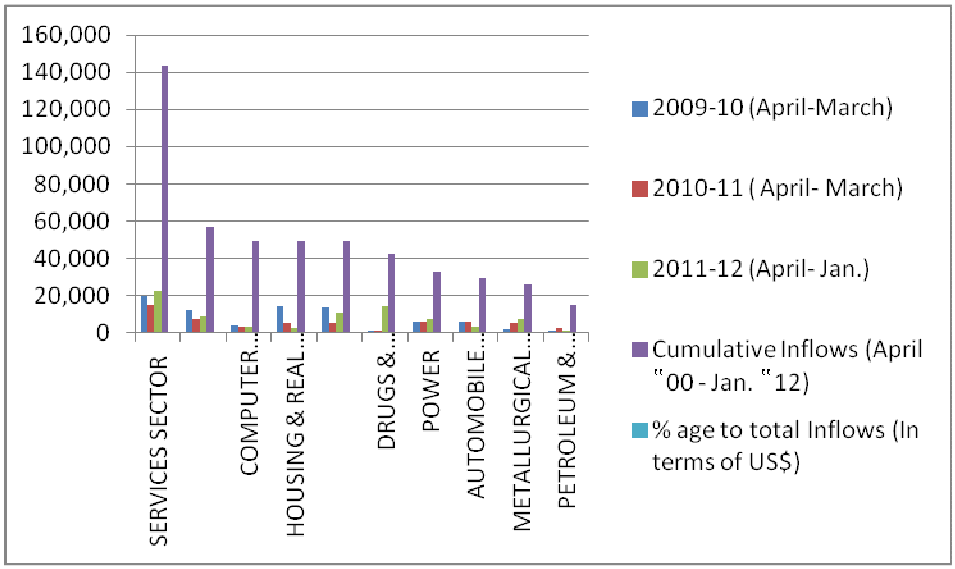
The average FDI inflow in **Cement and Gypsum Products** from the year 2000 to 2009 was 186.10 US million $. The FDI inflow in this sector in the year 2009 - 2010 was 33.8 US million

$. In the year 2010 – 2011, the FDI inflow in cement and gypsum product sector increased very rapidly and reached up to 637.68 US million $ and was able to attract 3.28% of total FDI inflows. Above Table indicates that almost in every sector the FDI inflows increased if we compared with the average FDI inflows during the financial years 2000 – 2009. In the year 2010 – 2011 the FDI inflows was reduced as compared to FDI inflow in the year 2009 – 2010 due to recession

Table 7: Top 10 Sectors attracted the Highest FDI Inflow

Ranks	Sector	2009-10 (April-March)	2010-11 (April-March)	2011-12 (April- Jan.)	Cumulative Inflows (April '00 - Jan. '12)	% age to total Inflows (In terms of US$)
1	SERVICES SECTOR (financial & non-financial)	19,945 (4,176)	15,053 (3,296)	22,771 (4,836)	143,878 (31,971)	20.00%
2	TELECOMMUNICATIONS (radio paging, cellular mobile, basic telephone services)	12,270 (2,539)	7,542 (1,665)	8,984 (1,992)	57,050 (12,547)	8.00%
3	COMPUTER SOFTWARE & HARDWARE	4,127 (872)	3,551 (780)	3,312 (698)	49,626 (11,107)	7.00%
4	HOUSING & REAL ESTATE	14,027 (2,935)	5,600 (1,227)	2,750 (591)	49,025 (10,973)	7.00%
5	CONSTRUCTION ACTIVITIES (including roads & highways)	13,469 (2,852)	4,979 (1,103)	10,859 (2,230)	49,440 (10,867)	7.00%
6	DRUGS & PHARMACEUTICALS	1,006 (213)	961 (209)	14,482 (3,208)	42,745 (9,170)	6.00%
7	POWER	6,138 (1,272)	5,796 (1,272)	7,262 (1,569)	32,798 (7,215)	5.00%
8	AUTOMOBILE INDUSTRY	5,893 (1,236)	5,864 (1,299)	2,916 (635)	29,354 (6,470)	4.00%
9	METALLURGICAL INDUSTRIES	1,999 (420)	5,023 (1,098)	7,700 (1,655)	26,287 (5,909)	4.00%
10	PETROLEUM & NATURAL GAS	1,297 (266)	2,543 (556)	951 (202)	14,612 (3,339)	2.00%

Graph 3: Top 10 Sectors attracted the Highest FDI Inflow



FDI Inflows to Service Sector has been phenomenal in the past few years. Since the onset of the liberalization of the Indian economy in 1991, the country has experienced a huge increase in the inflow of Foreign Investments. The service sector in India has tremendous growth potential and as such it has attracted huge Foreign Direct Investments (FDI).

The rankings to different sectors were provided on the basis of average FDI inflow during the year April 2000 to January 2012.

The above figure shows that service sector is the highest receiver of FDI in India. Approximately 20% FDI inflow in India was in service sector. It means one fifth FDI inflow only in service sector. Telecommunication attracted 8% FDI followed by Computer software and hardware sector with 7%. These three sectors combinable attracted more than one third of FDI inflow in India.

Housing and Real estate sector were attracted 7% FDI inflow. Construction activity sector (including roads and highways) was also able to attract 7% FDI inflow. Both this sector stood 3rd and 4th position in attracting the highest FDI inflow. The next highest receiver of the FDI inflow was Drugs and pharmaceuticals sector with 6% followed by power sector with 5%, automobile industry and metallurgical industries with 4% and petroleum and natural gas with 2%. These ten sectors combinable attracted 70% of the FDI inflow.

Analysis of FDI Inflow for Service sector

Following data shows FDI Inflows for the Service Sector during 2000-2011. The required data is extracted from above table.

Table 8: Let the FDI Inflow is distributed equally during 2000-01 to 2008-09. (Since average was available)

Year	FDI Inflow 'Y'	X	X*X	X*Y
2000-01	2138.72	-5	25	-10693.6
2001-02	2138.72	-4	16	-8554.88
2002-03	2138.72	-3	9	-6416.16
2003-04	2138.72	-2	4	-4277.44
2004-05	2138.72	-1	1	-2138.72
2005-06	2138.72	0	0	0
2006-07	2138.72	1	1	2138.72
2007-08	2138.72	2	4	4277.44
2008-09	2138.72	3	9	6416.16
2009-10	4391.93	4	16	17567.72
2010-11	3403.08	5	25	17015.4
Total	**27043.49**		**110**	**15334.64**

The Trend line can be obtained by method of Least Squares

If Y denote FDI Inflow and X value corresponding to Year then the equation will be

$Y = a + b*X$

By method of least squares a = 2458.499 and b = 139.4058

Thus the equation will be $\mathbf{Y} = 2458.499 + 139.4058\mathbf{X}$

This equation can be used to estimate FDI Inflow for future years. For the year 2012-13 the estimated FDI Inflow will be **3434.34**

Analysis of FDI inflow in different sectors and their share in GDP:

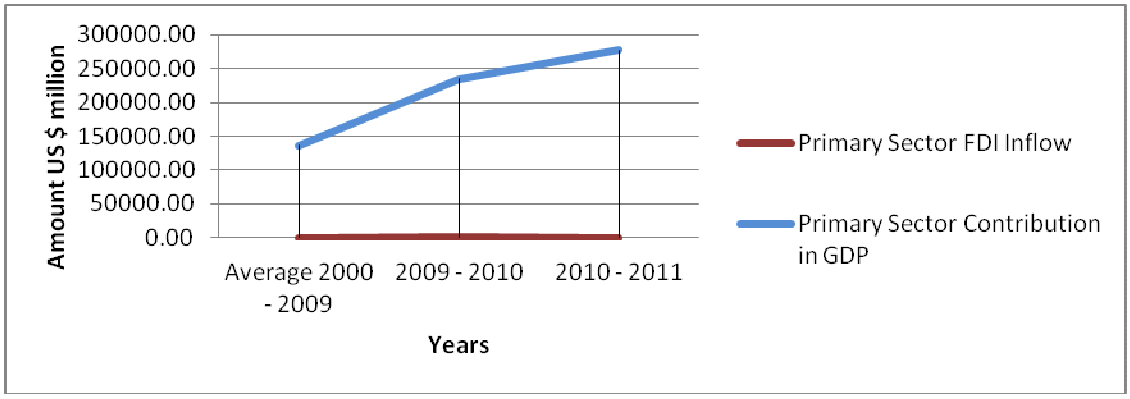
The different sectors are classified into three categories i.e. Primary / Agricultural sector, secondary / industries sector and Tertiary / service (including real estate) sector.

The following table shows the FDI inflow in primary sector and the contribution of primary sector in GDP of India.

FDI inflow in Primary Sector and its Share in GDP of India

Primary Sector		
Year	**FDI Inflow**	**Contribution in GDP**
Average 2000 - 2009	118.77	136241.12
2009 - 2010	1574.16	234502.28
2010 - 2011	205.38	277037.35

Graph 4: The following graph shows the graphical presentation of the FDI inflow in primary sector and its contribution in GDP of India.



The above figure shows that the FDI inflow in primary sector was increased very slowly but the contribution of primary sector in GDP was increased rapidly. Thus I have found out the correlation between FDI inflow in primary sector and its contribution in GDP of India.

The following table drawn to calculate the correlation between FDI inflow in Primary sector and its share in GDP:

Analysis of FDI Inflow for Primary sector

Following data shows FDI Inflows for the Primary Sector during 2000-2011. The required data is extracted from above table.

Table 9: Let the FDI Inflow is distributed equally during 2000-01 to 2008-09. (Since average was available)

Year	FDI Inflow 'Y'	X	X*X	X*Y
2000-01	118.77	-5	25	-593.85
2001-02	118.77	-4	16	-475.08
2002-03	118.77	-3	9	-356.31
2003-04	118.77	-2	4	-237.54
2004-05	118.77	-1	1	-118.77
2005-06	118.77	0	0	0
2006-07	118.77	1	1	118.77
2007-08	118.77	2	4	237.54
2008-09	118.77	3	9	356.31
2009-10	1574.16	4	16	6296.64
2010-11	205.38	5	25	1026.9
Total	2848.47		110	6254.61

The Trend line can be obtained by method of Least Squares

If Y denote FDI Inflow and X value corresponding to Year then the equation will be

$Y = a + b*X$

By method of least squares a = 258.9518 and b = 56.86009

Thus the equation will be Y = 258.9518 + 56.86009 **X**

This equation can be used to estimate FDI Inflow for future years. For the year 2012-13 the estimated FDI Inflow will be **656.9725**

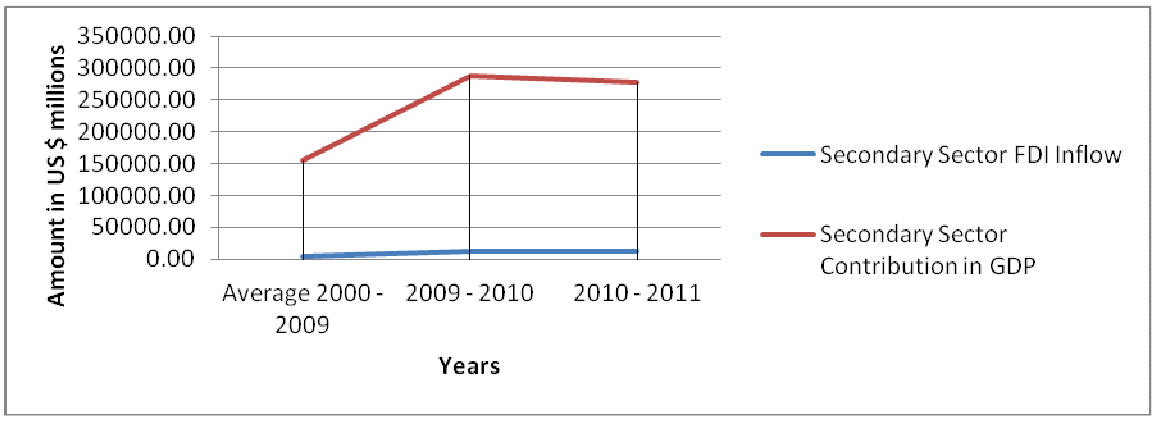
FDI inflow in Secondary Sector and its Contribution in GDP of India

The following table shows the FDI inflow in secondary sector and the contribution of secondary sector in GDP of India.

FDI inflow in Secondary Sector and its Share in GDP of India

Secondary Sector		
Year	**FDI Inflow**	**Contribution in GDP**
Average 2000 - 2009	5099.26	154734.36
2009 - 2010	12468.85	288536.97
2010 - 2011	11550.75	277037.35

Graph 5: The following graph shows the graphical presentation of the FDI inflow in secondary sector and its contribution in GDP of India.



The above figure shows that the FDI inflow in secondary sector and its share in GDP of India was increased and decreased simultaneously. Thus I have found out the correlation between FDI inflow in secondary sector and its contribution in GDP of India.

Analysis of FDI Inflow for Secondary sector

Following data shows FDI Inflows for the Secondary Sector during 2000-2011. The required data is extracted from table I above.

Table 10: Let the FDI Inflow is distributed equally during 2000-01 to 2008-09. (Since average was available)

Year	**FDI Inflow 'Y'**	**X**	**X*X**	**X*Y**
2000-01	5099.26	-5	25	-25496.3

2001-02	5099.26	-4	16	-20397
2002-03	5099.26	-3	9	-15297.8
2003-04	5099.26	-2	4	-10198.5
2004-05	5099.26	-1	1	-5099.26
2005-06	5099.26	0	0	0
2006-07	5099.26	1	1	5099.26
2007-08	5099.26	2	4	10198.52
2008-09	5099.26	3	9	15297.78
2009-10	12468.85	4	16	49875.4
2010-11	11550.75	5	25	57753.75
Total	69912.94		110	61735.81

The Trend line can be obtained by method of Least Squares

If Y denote FDI Inflow and X value corresponding to Year then the equation will be $Y = a + b*X$

By method of least squares a = 6355.722 and b = 561.2346

Thus the equation will be $\mathbf{Y} = 6355.722 + 561.2346\ \mathbf{X}$

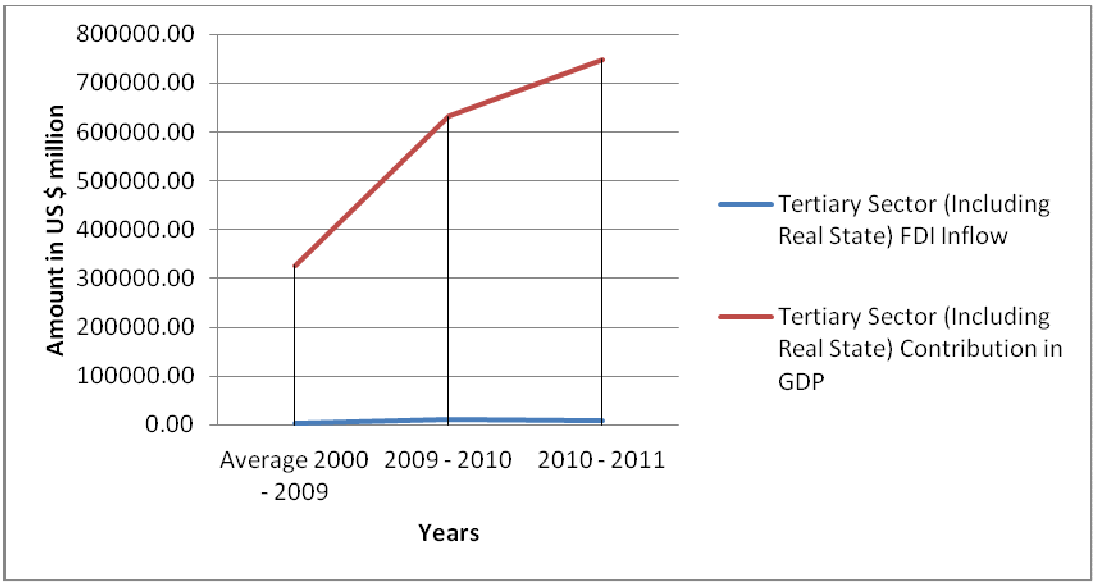
This equation can be used to estimate FDI Inflow for future years. For the year 2012-13 the estimated FDI Inflow will be **10284.36**

FDI inflow in Tertiary Sector including real estate and its Contribution in GDP of India: The following table shows the FDI inflow in tertiary sector and the contribution of tertiary sector in GDP of India.

FDI inflow in Tertiary Sector (Including Real Estate) and its Share in GDP of India

Tertiary Sector including Real Estate		
Year	**FDI Inflow**	**Contribution in GDP**
Average 2000 - 2009	4165.86	326751.76
2009 - 2010	11791.40	631963.60
2010 - 2011	7670.80	748325.56

Graph 6: The following graph shows the graphical presentation of the FDI inflow in tertiary sector and its contribution in GDP of India.



The above figure shows that the FDI inflow in tertiary sector (including real estate) and its share in GDP of India were increased simultaneously. But in the year 2010-2011 the value of FDI inflow in this sector was decreased but the contribution of this sector in GDP of India was increased. I found out where is there a correlation between FDI inflow in tertiary sector and its contribution in GDP of India.

Analysis of FDI Inflow for Tertiary sector

Following data shows FDI Inflows for the Tertiary Sector during 2000-2011. The required data is extracted from table I above.

Table 11: Let the FDI Inflow is distributed equally during 2000-01 to 2008-09. (Since average was available)

Year	FDI Inflow 'Y'	X	X*X	X*Y
2000-01	4165.86	-5	25	-20829.3
2001-02	4165.86	-4	16	-16663.44
2002-03	4165.86	-3	9	-12497.58
2003-04	4165.86	-2	4	-8331.72
2004-05	4165.86	-1	1	-4165.86
2005-06	4165.86	0	0	0

2006-07	4165.86	1	1	4165.86
2007-08	4165.86	2	4	8331.72
2008-09	4165.86	3	9	12497.58
2009-10	11791.4	4	16	47165.6
2010-11	7670.8	5	25	38354
Total	56954.94		110	48026.86

The Trend line can be obtained by method of Least Squares

If Y denote FDI Inflow and X value corresponding to Year then the equation will be $Y = a + b*X$

By method of least squares a = 5177.722 and b = 436.6078

Thus the equation will be Y =5177.722 + 436.6078 **X**

This equation can be used to estimate FDI Inflow for future years. For the year 2012-13 the estimated FDI Inflow will be **8233.977**

Regression Analysis

Table 12: FDI inflow in Tertiary Sector and its Share in GDP of India with X * X and X * Y

Tertiary Sector including Real Estate				
Year	**FDI Inflow X**	**Contribution in GDP Y**	**X * X**	**X * Y**
Average 2000 - 2009	4165.86	326751.76	17354371.02	1361201360.80
2009 - 2010	11791.40	631963.60	139037113.96	7451735593.04
2010 - 2011	7670.80	748325.56	58841172.64	5740255705.65
Total	**23628.06**	**1707040.92**	**215232657.62**	**14553192659.49**

Slope (b) = $(N\Sigma XY - (\Sigma X)(\Sigma Y)) / (N\Sigma X^2 - (\Sigma X)^2)$

= $((3*14553192659.49)–23628.06*1707040.92)/((3*215232657.62)–(23628.06)^2)$

b = 38.04

Intercept (a) = (ΣY – b(Σx)) / N

= (1707040.92 – (38.04 * (23628.06)) / 3

a = 269380.01

The value of 'a' is 269380.01 and the value of 'b' is 38.04. With the help of the following equation one can find out what will be the value of Y for the value of given x, by putting the value of X.

Regression Equation (y) = a + bx

= 269380.01 + (38.04 * 12000)

= 725905.50 US million $

The GDP does not completely depend on the FDI but the data collected shows that the FDI in tertiary sector and its share in GDP of India has increased and decreased simultaneously. Thus, I have utilized the Pearson's correlation formula to find out the correlation between FDI inflow in secondary sector and its share in GDP of India. The value of r was 0.67. The positive correlation between FDI inflow in tertiary sector and its share in GDP was seen. The value of correlation had shown that if there is increase in the FDI in tertiary sector by $1, the share of tertiary sector in GDP of India will also increase by approximately 67 cents.

The coefficient of Determination was also calculated and the value of r^2 was 0.45. It means that 45% of the total variation in the contribution of tertiary sector in GDP of India can be explained by the linear relationship between FDI inflows in tertiary sector. The other 55% of the total variation in the contribution of tertiary sector in GDP of India remains unexplained.

I have found the value of is 269380.01 and the value of b is 38.04 by using the regression equation. Regression analysis helps one understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed. The regression equations shown that if the FDI inflow in tertiary sector will be 12,000/- US million $, the value of contribution of tertiary sector in GDP of India will be 725905.50 US million $.

The Role of Government in Accelerating FDI inflow in India

The concept and material significance of FDI has evolved from the shadows of shallow

understanding to a proud show of force. The government while serious in its efforts to induce growth in the economy and country started with foreign investment in a haphazard manner. While it is accepted that the government was under compulsion to liberalize cautiously, the understanding of foreign investment was lacking.

In the year 1991, the first non political finance minister Dr. Manmohan Singh made the policy to attract the FDI. Economic Survey for 1991 by ministry of finance concluded that "compared to domestic investment the contribution of foreign investment is bound to remain minor". Long term planning was done at that time to overcome the crises due to gulf war but R.S.S. opposed the government decision regarding FDI.

It is in 1993-1994 when there seemed to be a realization on the importance of FDI.

The far reaching unanimity for FDI came in 1995-1996 when the government began to showcase the progress made as a result of FDI along with defending the changes to critics. Statistics had been available for many years, but now FDI has entered the mindset of the government. The future of India's growth and output was seen to be connected to FDI and it was deemed necessary for promoting higher growth of output, exports and employment.

By now after having been in power the BJP in 1998-1999, overhauled its previous stance and in its party manifesto admitted that "the country cannot do without FDI because besides capital stocks it brings with it technology, new market practices and most importantly employment".

The trends of FDI now resulted in policy formulation. For example in 1999-2000 when a second year of decline continued a Foreign Investment Implementation Authority (FIIA) was set up for providing a single point interface between foreign investors and the government machinery, including state authorities. This body was also empowered to give comprehensive approvals. After this point FDI has acquired an acceptable status and the debate is on the levels that will be allowed.

By the next election in 2004, FDI had become a non-electable issue.

In the new policy on 2006, government allowed FDI in various sectors. 100% FDI were allowed in various sectors like Greenfield projects, Existing projects, Alcohol Distillation and Brewing, Cigar Cigarettes, Coffee and rubber, coal and lignite mining, constructions, courier service, Industrial explosive, non banking finance companies, publishing of scientific books and journals, tea sector, telecom sector and trading except retail trade. It was a great move of the government to accelerate FDI in India.

In 2010, 100% FDI was allowed in maximum sectors under automatic route, while there are Sectoral caps in the case of Banking (74%), Insurance (26%), Telecom (49%), Aviation (74%) and Single brand retail (51%) etc. In certain sectors like Atomic Energy, Lottery, Gambling and Betting, Multi Brand Retail, Nidhi company etc, FDI is not permitted.

The above facts were showed that government has been right to accelerate FDI inflow in India.

The Effects of FDI on GDP:

On the basis of past researches the researcher observed the positive effect of the FDI inflow on the GDP of India, thus decided to find out the correlation between FDI inflow and GDP of India. The GDP does not completely depend on the FDI. But the data collected by the researcher shows that the FDI and GDP of India have increased simultaneously. From the year 1980, there has been an increase in the FDI inflow and the GDP was also showing increasing trend. From the year 2006 the FDI inflow has increased rapidly and from the next year the GDP of India has also increased rapidly. Thus some relation was seen between these two factors, the researcher utilized the Pearson's correlation formula to find out the correlation between FDI and GDP of India. The value of r was 0.963. The strong positive correlation between FDI inflow and GDP was seen. The value of correlation had shown that if there is increase in the FDI by $1, the GDP of India will also increase by 96 cents.

The coefficient of Determination was also calculated and the value of r^2 was 0.927. It means that 92.7% of the total variation in GDP of India can be explained by the linear relationship between FDI inflows in India. The other 7.3% of the total variation in GDP of India remains unexplained. The researcher found out the value of 'a' is 139013 and the value of 'b' is 6.82 by using the regression equation. Regression analysis helps one understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are fixed. The regression equations shows that if the FDI inflow will be 2, 57,000/- US million $, the value of GDP of India will be 1891753 US million $.

Conclusion:

The correlation between FDI and GDP of India was 0.963 and the coefficient of determination was 0.927. It means FDI inflow will affect 92.7% of GDP of India.

The government played a positive role in accelerating FDI inflow in India and now 100% FDI is allowed in maximum sectors through automatic route.

The weak correlation was found between FDI inflow in primary sector and its share in GDP. The strong positive correlation was found between FDI inflow in secondary sector and its share in GDP. The correlation value between FDI inflow in tertiary sector including real estate and its share in GDP was 0.67.

Suggestions to Government and Policy Makers:

The study showed that FDI plays an important role in the economic development of the country. Thus, FDI procedure should be made easier. The government should announce some more incentive to the foreign investors.

The study showed that the correlation in FDI inflow in secondary sector and its share in GDP was very strong. The FDI inflows in this sector directly affect the GDP of India. Thus, the government should take initiative to attract the maximum FDI inflow in this sector.

While, in tertiary sector the average correlation was found, but still the FDI in tertiary sector will help in the economic development of the country, therefore, the government should also encourage the FDI investment in this sector.

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