

Impact of Recession on India: A Sector-wise Analysis

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Under the supervision of
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*Dedicated to my Grandmother
Late Ms Harbans Kaur and my Mother
Late Ms Lakhwinder Kaur*


CERTIFICATE

I hereby certify that the work which is being present in this thesis entitled '**Impact of Recession on India: A Sector wise Analysis**' in partial fulfillment of the requirements for award of the Degree of Master of Philosophy in Economics, submitted in School of Management and Social Sciences, Thapar University, Patiala, is an authentic record of my own work carried out under the supervision of Dr (Ms) Ravi Kiran, Associate Professor, School of Management and Social Sciences.

The matter presented in this thesis has not been submitted for the award of any degree of this or any other University.

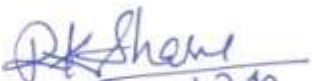

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ABSTRACT

The unstoppable Indian economy riding at the back of record highest economic growth has finally encountered a slowdown. Due to integration of the Indian economy with the world economy, the Indian economy was likely to be hit by the recession started in the US economy in the period of 2008-09. The Indian companies have most outsourcing deals from the US and even Indian exports to US have increased over the years. But the latest reports indicate that exports for January 2009 have declined by 22%. There is a decline in employment all over the globe due to the recession in the west. Some companies have laid off their employees and there have been cut in promotions, compensations and perks of the employees. There has been a significant drop in the new hiring which is a cause of great concerns for the Indians. Companies in the private sector and government sector are hesitant to take up new projects and these are working on existing projects only.

After discussing the integration of the Indian Economy with the global economy, the main objective of the research has been to study the performance of different sectors of the Indian economy and to provide a comprehensive sector-wise scenario to elucidate the weak as well as strong sectors of the economy in the phase of recession. The secondary data of the production of the different sectors of the economy has been used. The growth of various heads of production has been analyzed with the help of trend rate of growth. To study the factors causing recession, multiple regression model has been used by taking GDP at constant prices as dependent variable and FDI, FII & IT sector production as the independent variables.

The year-wise growth rates have shown the true picture of recession in the different sectors of the Indian economy, whereby most of the sectors reported a slowdown in the recessionary period. So it can be concluded from the above analysis that recession had its impact on Indian economy, but the impact has been slower, as most of the sectors reported higher growth in period II of the analyses. Regarding the factors influencing GDP growth, the regression results highlight that the predictors of the model are: IT Sector, FII and FDI. These explain 99.10 percent of the variation.

CHAPTER -1

INTRODUCTION

1. Global Recession and Indian Economy

The unstoppable Indian economy riding at the back of record highest economical growth has finally encountered a slowdown. Increased job searches, mounting loan loads, shrinking salary, swollen loan defaults, shooting inflation are the factors of so called "worst global recession since the Great Depression". The current precariousness of Global financial market has raised several questions in the minds of people. Insecurity of living and safety of resources has suddenly become the center stage agenda in everyone's life.

In the period 2008-2009 many countries of the world were in the grip of Recession. Originating from America, recession entered Europe and some Asian countries in October 2008. After the insolvency of Lehman Brothers' and some major companies in America; other companies either merged with other companies or by reducing production level, reduced the number of employees. The stock exchanges have always been indicative of the recession. BSE SENSEX after touching the ceiling of 21,000 points on January 8,2008 fell below 10,000 in the same year.

World Bank's annual 'Global Economic Prospects report' (2008) warns that the global economy is at the doorstep of '**worldwide recession**' because the global economy has reached a turning point with a slowdown which has already begun. The report says that global growth would decline to 4.5% in 2007, from a likely growth of 5.1% in 2006 and rose only marginally in 2008 to 4.6%. While the global growth accelerated in the first half of 2006, bank presents a note of caution that there are indications of slowing down the pace of expansion in the world. According to the report, developing countries, including India, are projected to grow by 7% for 2006 while for high-income countries; the projected growth is 3.1%.

World bank's Global Economic Prospects Report: Salient Highlights

- High oil prices, rising interest rates, maturation of business cycle expected to restrain growth in 2007-08.
- Stronger fundamentals in most developing countries reduce likelihood that a hard landing would be as severe as in the past.
- Consumer energy price subsidies have helped contain inflationary pressures, but keeping government deficits high in South Asia.
- Global economy output to rise from \$35 trillion in 2005 to \$72 trillion in 2030, an average annual increase of 3%.

According to UNCTAD's Trade and Development Report 2008, the global economy is expected to sharply decelerate to 1.5% in 2009 from 2.9% in 2008 due to the worsening downturn caused largely by the financial crisis in the United States. About Indian economy, the report says that India is likely to grow around 7.6% in 2008 compared with 9.7% in 2007. Presenting a grim forecast in its Trade and Development Report, 2008, UNCTAD warned that a full-fledged global economic recession 'seems unavoidable' because of deepening instability in international financial, currency, and commodity markets coupled with growing reliance on restrictive monetary policies in the entire world.

UNCTAD's report, while presenting world's recession scenario, says that countries will have to adopt 'prudential regulation' to arrest speculative tendencies, 'a code of conduct' to keep the volatile exchange rates under proper alignment and income generating policies. Report cautions about capital flowing 'uphill' from poor to rich countries to adopt appropriate 'growth-oriented economic policies'. The report emphasizes that there is also a strong need for multilateral mechanisms to govern international financial flows and monetary balances of the uncontrolled dangers from speculations. Report accepts that the developing countries, despite the worsening climate in rich countries, will continue to be pioneers of the global economy and big developing economies like China, India and Brazil will grow at an impressive rate.

1.1 Meaning of Recession:

In Economics, a recession is a general slowdown in economic activity over a sustained period of time, or a business cycle contraction. Many macroeconomic indicators like Gross Domestic Product, Employment, Investment spending, Capacity utilization, Household Incomes and Business Profits all fall during recessions.

Recession is not to be confused with depression. Recession means a slow down or slump or temporary collapse of a business activity. In its early stage it can be controlled in a methodical manner. Experience helps to avert total collapse. Unchecked, it leads to severe depression. Depression is a dead end. It is time to close shops completely. It is a total state of irrevocable economic failure.

Recession is when the consumer faces foreclosure and the banker comes knocking for the pound (or dollar) of flesh. Many companies and whole countries go bankrupt for want of liquid funds and cash flow for even daily requirements. If you look at it from the point of view of a businessman, recession is a transitory phase.

1.2 Definition of Recession:

According to the National Bureau of Economic Research (NBER), Recession is defined as "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real Gross Domestic Product, real Income, Employment, Industrial production and wholesale, retail sales."

Economists at the IMF state that a global recession would take a slowdown in global growth to three percent or less. By this measure, two periods since 2000 qualify as slowdown: 2000-2002 and 2008 onwards.

The great crisis of the world economy during 1920s, continued till 1930. At that time, well-known Economist J.M. Keynes in his book, **General Theory of Employment, Interest and Money** (1936), presented a solution for Governments to cure this type of crisis, that the government must invest more and more money on the economy, so that the Purchasing Power for goods will rise. By this, Economy again strengthened and the confidence of people also re-established. Thus, according to Keynes' formula, World Economy was able to beat the World Crisis.

In 1997, East Asian Financial Crisis has occurred. India was less affected but Thailand, Indonesia and South Korea were highly affected by that crisis.

1.3 Government Responses:

Mainstream Economists believe that recessions are caused by inadequate aggregate demand in the economy, and favor the use of expansionary Monetary Policy.

Monetarists favor the use of expansionary Monetary Policy.

Keynesian economists advocate increased government spending to spark economic growth.

Supply-side economists suggest the cuts to promote business capital investment.

Laissez-faire minded economists simply recommend that the government should not interfere with natural market forces.

1.4 Indian Economic Scenario (late 2000):

As Honorable Prime Minister, Dr. Manmohan Singh pointed (The Times of India-November 5, 2008) that, "A global financial crisis of this magnitude was bound to affect our economy and it has."

India's macro-economic fundamentals are inspiring confidence and investment climate. The economy has continued with a growth in Gross Domestic Product at market prices exceeding 8% since 2003-04 with projected growth of 8.7% for 2007-2008. Per capita private consumption expenditure has increased. The sustaining growth and resilience in the face of shocks such as global slowdown, high energy and commodity prices bring forth India's strength from domestic market driven economic system. (Finance India, 2008)

A decade ago Indian Economy was developing at a very fast rate and her economic growth rate was from 8% to 9%; but in the beginning of 2008, the prices rapidly grew and Inflation rate reached 14%. Its main reason was rising prices of oil, which reached at 147 US\$ per barrel in International market (September 2008).

Recessions are the result of reduction in the demand of products in the global market. Recession can also be associated with falling prices known as deflation due to lack of demand of products. Again, it could be the result of inflation or a combination of increasing prices and stagnant economic growth in the west.

Recession in the West, especially the United States, is a very bad news for our country. The Indian companies have most outsourcing deals from the US. Even Indian exports to US have increased over the years. Exports for January, 2009 have declined by 22 per cent. There is a decline in the employment market due to the recession in the West. There has been a significant drop in the new hiring which is a cause of great concern for India. Some companies have laid off their employees and there have been cut in promotions, compensations and perks of the employees. Companies in the private sector and government sector are hesitant to take up new projects and these companies are working on existing projects only. Projections indicate that up to one crore persons could lose their jobs in the year 2008-09. The one crore figure has been compiled by Federation of Indian Export Organizations (FIEO, 2009), which says that it has carried out an intensive survey. The textile, garment and handicraft industry are worse affected. Together, these industries have to lose four million jobs by April 2009, according to this survey. There has also been a decline in the tourist inflow lately. The real estate has also a problem of tight liquidity situations, where the developers are finding it hard to raise finances.

IT industries, financial sectors, real estate owners, car industry, investment banking and other industries as well are confronting heavy loss due to the fall down of global economy. Federation of Indian chambers of Commerce and Industry (FICCI) found that the industries faced with the global recession include inventories industries like garment, gems, textiles, chemicals and jewellery had cut production by 10 per cent to 50 per cent.

The present research has covered the period 2000-2009. The entire period is further divided into two phases along with the Period before Recession (2007-08) and the Period during Recession (2008-09):

Phase I: 2000-2004

Phase II: 2004-2009.

1.5 Chapter Scheme:

The whole thesis has been classified in five chapters and the rates of growth have been taken of the production of all the sectors of the economy to analyse the impact of recession on Indian Economy.

Chapter 1:

Chapter 1 is the introduction. In this chapter an overview of the Indian economy has been explained, along with the current Scenario. This Chapter also introduces the definition of Recession and the likely impact of recession on Indian economy. Finally this chapter also covers the chapter scheme.

Chapter 2:

In the second chapter the existing literature pertaining to our study has been thoroughly reviewed. This chapter gives the summary of literature review along with research issues.

Chapter 3:

Third chapter outlines the set of objectives and hypotheses of the study. This chapter also explains the data sources and methodology followed in this research.

Chapter 4:

In chapter four, estimation and result analysis have been discussed in the light of the objectives of the study.

Chapter 5:

Chapter five illustrates the conclusion, summary and findings, testing of hypotheses, limitations and future scope of this research.

CHAPTER -2

REVIEW OF LITERATURE

2. Introduction

Globalization has enhanced the importance of the study on business cycles particularly for emerging giants like India and China, whose integration with global output fluctuations are on the rise. For Indian economy, the fiscal year 2009-10 began as a difficult one. There was a significant slowdown in the growth rate in the second half of 2008-09, following the financial crisis that began in the industrialized nations in 2007 and spread to the real economy across the world.

The growth rate of the gross domestic product (GDP) in 2008-09 was 6.7 per cent, with growth in the last two quarters hovering around 6 per cent. There was an apprehension that this trend would persist for some time, as the full impact of the economic slowdown in the developed world worked through the system. It was also a year of reckoning for the policymakers, who had taken a calculated risk in providing substantial fiscal expansion to counter the negative fallout of the global slowdown. Inevitably, India's fiscal deficit increased from the end of 2007-08, reaching 6.8 per cent (budget estimate, BE) of GDP in 2009-10. A delayed and severely subnormal monsoon added to the overall uncertainty. The continued recession in the developed world, for the latter part of 2009-10, meant a sluggish export recovery and a slowdown in financial flows into the economy. Yet, over the span of the year, the economy posted a remarkable recovery, not only in terms of overall growth figures but, more importantly, in terms of certain fundamentals, which justify optimism for the Indian economy in the medium to long term.

In this study some existing literature has been reviewed pertaining to the above mentioned issues. The overall findings of different researchers related to these issues are discussed briefly below.

2.1 Literature Review

The studies have been divided on the basis of Issues related to recession. These issues include the literature regarding: Business cycles, Causes of Crisis, Impact on India, Sectors hit by Recession, Studies focusing on remedies.

2.2 Literature related to Business cycles

Dua and Banerji (2006) describe business and growth rate cycles with special reference to the Indian economy. The authors use the classical NBER approach to determine the timing of recessions and expansions in the Indian economy, as well as the chronology of growth rate cycles, viz., the timing of speedups and slowdowns in economic growth. The reference chronology for business as well as growth rate cycles is determined on the basis of the consensus of key coincident indicators of the Indian economy, along with a composite coincident index comprised of those indicators, which tracks fluctuations in the current economic activity. The study suggests a composite index of leading economic indicators, which are related to the drivers of business cycles in market economies, which include swings in investment in inventory and fixed capital that both determine and are determined by movements in final demand. They are designed to anticipate business cycle and growth rate cycle upturns and downturns.

The study by Alzarouni (2009), discusses the recession and the current economic downturn. The study differentiates between recession and depression. The study explores the impact of the recession and its effect on the business world. The study further suggests the ways of cutting interest rates, freeze Subprime mortgage rates, tax cuts, increase in government spending and devaluation to survive recession. The study points out that the problems like: Low Consumer confidence, Ineffectiveness of Monetary Policy, Ineffectiveness of Fiscal policy, Deflation, Hysteresis, Supply side shocks may be faced by an economy in recovering from a recession.

Hans (2009) reveals that there is indeed economic turbulence. Unstoppable India Inc. has hit a speed-breaker and the slowdown is there for all to see. Loan load worries, job search constraints, and making frequent fund value and investment assessment for more liquidity options in portfolio management – all these features of the global financial meltdown, prove that we are in the midst of one of the worst economic disasters or what is called the "worst global financial crisis since the Great Depression". The study explores that the

volatility of the developed economies has come to the developing economies in the era of globalization. Wall Street is clearly impacting the Indian job market. Banks are folding up. Deals are getting postponed. Outsourcing Industry is feeling the insidious effect of banks going out of business and everyone is trying to protect his/her job. Hans also tries to analyze some practical solutions to the problems at hand and also the impending ones.

The study by Temin (2010) discusses parallels between current recession and the Great Depression for the intelligent general public. It stresses the role of economic models and ideas in public policy and argues that gold-standard mentality still holds sway today. The parallels are greatest in the generation of the crises, and they also illuminate the policy choices being made today. The study shows that the policy makers have escaped a repeat of the Depression, but they appear to have lost the opportunity for significant financial reform.

2.3 Literature related to Causes of Crisis

Ferrantino and Larsen (2009) in their study about 'Transmission of the Global Recession through US Trade' have revealed that International trade has transmitted demand reductions across national boundaries throughout the crisis. In this study the researchers have analyzed transference of the recession through US trade flows at the sector level. The aim of the study is to show that US imports of housing construction inputs peaked before many other popular housing indicators. The study concludes that the channels of transmission arise both from historical patterns of comparative advantage and peculiar features of the US and global recession.

Giuliano and Spilimbergo(2009) studied the relationship between recessions and beliefs by matching macroeconomic shocks during early adulthood with self-reported answers from the General Social Survey. Using time and regional variations in macroeconomic conditions to identify the effect of recessions on beliefs, the researchers show that individuals growing up during recessions tend to believe that success in life depends more on luck than on effort, support more government redistribution, but are less confident in public institutions. The study finds that recessions have a long-lasting effect on individuals' beliefs.

2.4 Literature related to Impact on India

Agarwal *et al.* (2008) clearly reveal that the global economic slowdown has fostered the need for unprecedented international policy coordination globally with key role players as US, Europe, Russia, China and India. The study shows that the turmoil is the product of global credit boom sponsoring mortgages, real estate and over capacitating stock markets/ stock market linked assets/products with no real assets to support. The study concludes that the World Economy is moving towards a new economic order. Looking at the globalised world, there is a need to free ourselves of barriers and allow the market mechanism to freely flow and be part of this large society.

The study by Misra (2008) focuses on the impact of India's economic reforms on economic structure. In less than 15 years, India has transformed itself from a near basket case to the hottest emerging market and even being preferred by many over China for investment. Goldman Sach's BRIC (Brazil, Russia, India and China) report (2006) places India in the third rank which is ahead of Japan in the global pecking order of economies by 2050. The significance of US slowdown stands reduced, due to growth in countries like India, China and Japan. India has shown that the boundaries separating nations into the first, second and third worlds can easily be transgressed. Proactive corporate sector has made India destined for economic greatness. The study also shows that the most important factor is that among the BRIC countries, India has the highest percentage of people in the working class. As per the results of Census of India 2001, about 39.1% of the total population was in the workforce, of which male workforce was about 51.7% and female workforce 25.6%. Female workforce in rural areas was 30.8% as compared to female work force of only 11.9% in urban areas. Male work force in rural areas was 52.1% whereas the same in urban areas was 50.6%. Further, India's weaknesses like inadequate infrastructure, poor coastal development and untapped rural markets etc. are itself potential areas of opportunity for investors. Consequently, all countries are showing interest in strengthening economic and commercial relations with India. India is equally interested in going global.

The study by Garg and Pandey (2008) indicates that the impact of US recession on India. The study predicts that the IT sector will be worst hit as 75% of its revenues come from the US. The study shows that India has not been much influenced by US recession. India's travel, tourism and power industry is going to grow at a better rate. The study

concludes that unlike the rest of Asia, India is strong in domestic demand, so any slowing in the US is likely to have a more muted impact on India. Strong growth in domestic consumption and significant spending on infrastructure are the two pillars of India's growth story.

The study by Mohan (2008) highlights that India, like most other Asian emerging market economies, has so far, not been seriously affected by the recent financial turmoil in developed economies. The study suggests the approach to the management of the exposures of the Indian financial sector entities to the collapse of major financial institutions in the US. The study reveals that the orderly conditions have been maintained in the domestic financial markets, which is attributable to a range of instruments available with the monetary authority to manage a variety of situations. The study concludes that India has by-and-large been spared of global financial contagion due to the subprime turmoil for a variety of reasons such as: domestic demand driven growth process; reliance on foreign savings has remained around 1.5% in 2008; comfortable level of foreign exchange reserves; etc. Financial stability in India has been achieved through perseverance of prudential policies which prevent institutions from excessive risk taking, and financial markets from becoming extremely volatile and turbulent.

The study by Ghosh and Chandrasekhar (2009) reveals that the Indian Economy would be less adversely affected by the global economic crisis due to limited integration. The economic boom in India that happened before the current downturn was dependent upon greater global integration in three ways: (i) Greater reliance on exports particularly of services; (ii) Increased dependence on capital inflows, especially of the short term variety; (iii) Decline in domestic credit raised consumption as well as investment. The authors opine that these in turn made the growth process more unprotected to internally and externally generated crisis.

The study by De (2009) estimates the trade potential for India using the augmented Gravity model and attempts to determine the importance of trade remedies. Based on panel data, this Gravity model is the first-ever attempt to estimate India's trade potential in the pre- and post- global economic and financial crisis period. The estimates of India's global trade potential reveal that the magnitude of India's trade potential is at its maximum in the Asia-Pacific region, followed by Africa and Latin America. Potential for expansion of trade in the post-crisis period is highest for countries such as China. In a

large part of the world, India's trade has remained unrealized, which provides further opportunities to expand despite the slowdown in global demand. There is a strong complementary role, as the findings of this paper indicate; i.e., tariff liberalization and trade facilitation, which taken together can help build export momentum in the crisis period.

2.5 Literature related to sectors hit by recession

The study by Madhuvanthi *et al.* (2009) highlights that the retail market in India is facing slow-down, with the ongoing financial crisis having impact on the world market. The study points out that the retail market in India is facing slowdown with the ongoing financial crisis happening across the world markets. The study shows that due to linkage between markets, the impact of the crisis is generally shared among all. With the suddenly disturbed economical status, consumers are gradually losing interest on buying. Slowing sales, lower inventory turnover and increasing working capital requirements to fuel growth have resulted in liquidity pressures for many domestic retailers. The authors conclude that demand reduction following a slowdown in the domestic economy has impacted the sales of retailers; and urged the government to increase spending on infrastructure and other development initiatives.

The study by Vidyakala *et al.* (2009) highlights the recession in Indian Banking sector. The study shows that the Recession that began in December 2007 impacted the revenues and profitability of businesses worldwide. The authors point out that being a part of the globalised world; Indians are no more immune to the things happening outside our country. Going by the performance for the calendar year 2008, Indian public sector banks have not only been able to weather the storm of global recession but have been able to moderate its impact on the Indian economy as well, compared to its peers among the foreign and private banks. The banking sector faces profitability pressures due to higher funding costs, mark-to-market requirements on investment portfolios, and asset quality pressures due to a slowing economy. But Indian banks' global exposure is relatively small, with international assets at about 6 per cent of the total assets. The strong economic growth in the past, low defaulter ratio, absence of complex financial products, regular intervention by central bank, proactive adjustment of monetary policy and so called close

banking culture has favored the banking industry in India in recent global financial turmoil.

Kumar and Vashisht (2009) highlight that India has been effected by recession through financial markets, trade flows and exchange rates. The study explores that in order to reduce the impact of recession, governments and central banks all over the world, the Government and the Reserve Bank of India took aggressive countercyclical measures, sharply relaxing monetary policy and introducing a fiscal stimulus to boost domestic demand. The author argues that with very limited fiscal maneuverability and the limited traction of monetary policy, policy measures to restore the Indian gross domestic product growth back to its potential rate of 8–9% must focus on addressing the structural constraints that are holding down private investment demand.

Shiralashetti and Hugar (2009) highlight that Capital is the life blood of any production and distribution activity, and it plays an important role among the factors of production. The need of capital arises not only at the beginning of the venture, but also throughout the life span of the venture. However, capital, especially when in short supply, can be the limiting factor for starting, expansion and diversification of a venture. In view of the economic crisis on the one hand, and the perceived importance of foreign capital in the economic development of the country on the other, the Government of India has been making continuous efforts to attract foreign capital during the post-liberalization period. The efforts include providing concessions in taxes, announcing tax holidays and increasing the investment cap in various sectors of the Indian economy. As a result of the continuous efforts by the Government of India, there has been steady rise in the inflow of foreign capital on the one hand, and overall progress in various sectors of the Indian economy on the other. According to the Reserve Bank of India (RBI), India has received total Foreign Direct Investment (FDI) inflows of \$50.1 bn since 1991. There has been tremendous progress in the various sectors of the Indian economy due to the inflow of foreign capital. The GDP growth rate has crossed 9% due to boom in manufacturing and service industries. Further, the Sensex points in Indian stock market have crossed 19, 000 points on October 15, 2007. In addition, the foreign exchange reserves have crossed \$204 bn at the beginning of May, 2007. In addition, there has been improvement in the employment position, standard of living, infrastructure development, health and hygiene, GDP and NDP due to FDI inflows in India.

2.6 Literature related to study focusing on Remedies

Kumar and Bhatia (2009) tried to understand the contributory factors of high growth rate and to protect our economy from the recession. The study explores that there was a high rate of growth in the Indian Economy in the past few years. This growth was supported satisfactorily by structural and policy reforms and that trend was the long term trend. Liberalization, Privatization and Globalization were warmly welcomed and seemed mandatory for the process of growth of Indian Economy.

According to Nair (2009) the Public Sector Enterprises (PSEs) in India have contributed immensely to the national self-reliance. It is widely believed that they have a much greater potential and prospects for growth and profitability in future and will continue to play an important role in the economy. The study explores that under the globalized economic environment and especially under the present global economic slowdown the mission and role of public sector have to take a deviation from current practices and embrace a world of knowledge, information, practices and outlook to achieve the age old management commitment to improve the bottom line besides delivering prompt and quality services.

The study by Choudhari (2009) elucidates the impact of global recession on Indian financial market, major initiatives taken up by the Government and Reserve Bank of India in the order to contain it with special focus on employment, import-export, interest rates, risk management, credit demand and taxation. The study shows that the global financial recession which started off as a sub-prime crisis of US has brought all nations including India into its fold. The GDP growth rate which was around nine per cent over the last four years has slowed since the last quarter of 2008 owing to deceleration in employment, export-import, tax-GDP ratio, reduction in capital inflows and significant outflows due to economic slowdown. The demand for bank credit is also slackening despite comfortable liquidity in the system. Higher input costs and dampened demand have dented corporate margins while the uncertainty surrounding the crisis has affected business confidence leading to the crash of Indian stock market and volatility in foreign exchange market.

Kirkpatrick (2009) analyses the impact of failures and weaknesses in corporate governance on the financial crisis, including risk management systems and executive salaries. The financial crisis can be to an important extent attributed to failures and

weaknesses in corporate governance arrangements which did not serve their purpose to safeguard against excessive risk taking in a number of financial services companies. Accounting standards and regulatory requirements have also proved insufficient in some areas. Last but not least, remuneration systems have in a number of cases not been closely related to the strategy and risk appetite of the company and its longer term interests.

Table 2.1 Major themes of reviews regarding Impact of Recession on India:

Issues	Author	Contribution
1. Business Cycles	Dua and Banerji (2006)	Describe business and growth rate cycles with special reference to the Indian economy.
	Alzarouni (2009)	The study explores the impact of the recession and its effect on the business world.
	Hans (2009)	There is indeed economic turbulence. Unstoppable India Inc. has hit a speed-breaker and the slowdown is there for all to see.
	Temin (2010)	The study discusses parallels between current recession and the Great Depression for the intelligent general public.
2. Causes of Crisis	Ferrantino and Larsen (2009)	International trade has transmitted demand reductions across national boundaries throughout the crisis.
	Giuliano and Spilimbergo(2009)	The study provides the relationship between recessions and beliefs by matching macroeconomic shocks during early adulthood with self-reported answers from the General Social Survey.
3. Impact on India	Agarwal <i>et al.</i> (2008)	The global economic slowdown has fostered the need for unprecedented international policy coordination globally with key role players as US, Europe, Russia, China and India.
	Misra (2008)	India has transformed itself from a near basket case to the hottest emerging market and even being preferred by many over China for investment.
	Garg and Pandey (2008)	The study indicates that the impact of US recession on India.
	Mohan (2008)	India, like most other Asian emerging market economies, has so far, not been seriously affected by the recent financial turmoil in developed economies.
	Ghosh and Chandrasekhar (2009)	The Indian Economy would be less adversely affected by the global economic crisis due to limited integration.
	De (2009)	The estimates of India's global trade potential reveal that the magnitude of India's trade potential is at its maximum in the

		Asia- Pacific region, followed by Africa and Latin America.
4. Sectors hit by recession	Madhuvanathi <i>et al.</i> (2009)	The retail market in India is facing slow down with the ongoing financial crisis happening across the world market.
	Vidyakala <i>et al.</i> (2009)	Highlights impact of the recession in Indian Banking sector.
	Kumar and Vashisht (2009)	India has been effected by recession through financial markets, trade flows and exchange rates.
	Shiralashetti and Hugar (2009)	The researchers provide a diagnostic study related to Foreign Direct Investment and Economic Development of India.
5. Studies focusing on remedies	Kumar and Bhatia (2009)	The study explores the contributory factors of high growth rate and suggests some measures to protect India from the recession.
	Nair (2009)	Under the globalized economic environment and especially under the present global economic slowdown the mission and role of public sector have to take a deviation from current practices and embrace a world of knowledge, information, practices and outlook to achieve the age old management commitment to improve the bottom line besides delivering prompt and quality services.
	Choudhari (2009)	The impact of global recession on Indian financial market, major initiatives taken up by the Government and Reserve Bank of India in the order to contain it with special focus on employment, import-export, interest rates, risk management, credit demand and taxation.
	Kirkpatrick (2009)	The study explores the impact of failures and weaknesses in corporate governance on the financial crisis, including risk management systems and executive salaries.

CHAPTER- 3

OBJECTIVES, DATA AND RESEARCH METHODOLOGY

3. Introduction

The objectives of this study have been decided after the relevance of this study as a contemporary topic of research in the Indian economy. After discussing the integration of the Indian Economy with the global economy, the main objectives of the study are to study the performance of different sectors of the Indian economy and to provide a comprehensive sector-wise scenario to elucidate the weak as well strong sectors of the economy in the phase of recession. Due to less availability of the data and lesser time, the scope and objectives had to be kept in fewer but certainly with the purpose of fulfilling the basic rationale and motive of the research.

3.1 Objectives of the Study

The study has been undertaken with the following broad objectives:

- To determine whether the slowdown in the Indian Economy is really a phase of recession.
- To identify the growing sectors of the Indian Economy in the global turmoil.
- To identify the weak sectors of the Indian Economy in the global turmoil.
- To study the factors causing recession.

3.2 Hypotheses:

- Period II (2005 onwards) may be associated with higher GDP growth as compared to period I (2000-2004)
- Period II (2005 onwards) may be associated with more output growth for all sectors as compared to period I(2000-04)
- IT sector grows at a lower rate as compared with other sectors in Period II.

3.3 Data and variables in the study

In this study Annual data of the production of the different sectors of the economy for the financial year from 2000-01 to 2008-09 has been used.

The data of the variables like Production, FDI (Foreign Direct Investment) inflows, FII (Foreign Institutional Investment), SENSEX (Sensitive Index), Import & Export of the different sectors of the Indian Economy have been collected.

The various variables undertaken in this study are in real prices form so as to do away with the affect of inflation over the period of time and one can view the past and present economic scenario in a clearer and precise manner. The major macro economic variables used in this study are briefly explained below.

1. Production: Production is synonymous with Output. Economic production is an activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services. The output of an economy, if restricted to the process of production, is the part of the output that reaches the final consumers. In measuring the output of the total economy, all the intermediate transactions occurring within the factory park are discarded. Although they are essential for the working of the economy, they in themselves do not meet the needs of the final consumers in the economy. A nations output, GDP, can be measured from the production side as total production minus intermediate inputs; from the expenditure side by looking at the use of the output; as well as from the income side. Total output, or total value added, can be measured as final output from all businesses less intermediate imports going into the production process. This is achieved by considering how each business or enterprise adds value to the inputs it receives, so that the output of the business is measured in terms of the value added by means of its production activities. For a single enterprise, value added by production activity is measured as gross output less inputs from other businesses less inputs from abroad. Summing up the value added by all enterprises, the domestic intermediate transactions between businesses cancel out. For the total economy, value added from the production side is measured as gross output less inputs from abroad (imports).

2. **FDI:** Foreign direct investment is the category of international investment that reflects the objective of obtaining a lasting interest by a resident entity in one economy in an enterprise resident in another economy; foreign direct investment is defined as ownership of 10 per cent or more of the ordinary shares or voting power (for an incorporated enterprise) or the equivalent (for an unincorporated enterprise).

3. **FII:** Foreign institutional investor means an entity established or incorporated outside India which proposes to make investment in India. Positive tidings about the Indian economy combined with a fast-growing market have made India an attractive destination for foreign institutional investors.

4. **Exports:** Exports of goods consist of exports of the following items from residents to non-residents, generally with a change of ownership being involved: general merchandise, goods for processing, repairs on goods, goods procured in foreign ports by domestic carriers, and non-monetary gold.

5. **Imports:** Imports of goods consist of imports of the following items from non-residents to residents, generally with a change of ownership being involved: general merchandise, goods for processing, repairs on goods, goods procured in foreign ports by domestic carriers, and non-monetary gold.

6. **SENSEX:** SENSEX is called 'sensitivity index' which is an indicator of the major thirty companies at Bombay Stock Exchange (BSE) market, which are chosen from various sectors of the economy by a committee on the basis of a certain criteria. In fact, it gives us a general idea about whether most of the stocks have gone up or down. It is taken to be indicator of financial health of the capital market of India. BSE is the largest of 22 exchanges in India with over 6000 listed companies and is the 5th largest exchange in the world with market capitalization of US \$4.66 billion. It is the oldest in Asia as it traces its history back to 1850s.

3.4 Research Methodology: With a view to accomplish the stipulated set of objectives of the study, Least square linear regression method has been used for calculating Compound Growth Rate of important variables covered by the study. As the study relates

to time series, it is quite possible to notice different trends. The growth of various heads of production will be analyzed with the help of Compound annual rate of growth.

$$Y = ab^t$$

The Compound annual rate of growth will be calculated by using the Semi log Model and applying the method of ordinary least square (OLS) as explained below:

$$\text{Let } Y = ab^t = (1+r)^t \dots\dots\dots(i)$$

$$\text{Therefore } \log Y = \log (ab^t) = \log a + t(\log b)$$

where $Y_t = t^{\text{th}}$ observation on the variable Y for which rate of growth is to be calculated.

$t =$ Time variable taking n values $1, 2, 3, \dots, n$ and in this study n takes 9 and 10 values from 2000-01 to 2008-09 and 2000-01 to 2009-10 respectively, according to the availability of the latest data to fulfill the need of the analyze of this contemporary research.

$U_t =$ A random distribution (or error) term at t satisfy the user assumption of Ordinary least square

$r =$ rate of growth or Compound annual rate of growth.

a and b are parameters of original model (i) and A and B are the parameters of transformed model (ii).

From (ii), a and b are calculated as follows:

$$\log a = A, a = \text{Antilog } A$$

$$\log b = B, b = \text{Antilog } B$$

$$\text{Since } (1+r) = b,$$

Since rate of growth is calculated in percent terms

$$r = (b-1) * 100 = (\text{Antilog } B - 1) * 100.$$

OLS and stepwise regression models have been used for analyzing the factors causing recession, by taking GDP at constant market prices as the dependent variable and FDI, FII and IT sector production as the independent variables.

The relationship of GDP at constant market prices with the variables like I_F , I_I , P_{IT} can be represented by an equation of the following form:

$$Y = f(I_F, I_I, P_{IT})$$

Where, Y = GDP at constant market prices

I_F = Foreign Direct Investment

I_I = Foreign Institutional Investment

P_{IT} = IT sector Production

The best fit in the least-squares sense is that instance of the model for which the sum of squared residuals has its least value, a residual being the difference between an observed value and the value given by the model. Stepwise regression model is a method of computing OLS regression in stages. In stage one, the independent best correlated with the dependent is included in the equation. In the second stage, the remaining independent with the highest partial correlation with the dependent, controlling for the first independent, is entered. The process is repeated, at each stage partially for previously-entered independents, until the addition of a remaining independent does not increase R -squared by a significant amount (or until all variables are entered).

3.5 Data Sources:

In order to test and validate the hypotheses, Secondary data is gathered from qualified sources of information. The study is based on data collected from statistical data published by various relevant and concerned Departments and authorities etc.

The major sources of data of all the above macro economic variables are the Economic Survey 2008-09, Economic Survey 2005-06, and for FDI and FII data, Fact Sheet on FDI from August 1991 to January 2010; for IT sector data, Annual Report 2007-08 and 2008-

09, Department of IT, Ministry of Communication and IT, GOI; for Exports & Imports data, Economic Survey 2009-10; for BSE SENSEX, data from BSE India have been used.

3.6 Data Analysis

Growth rates have been calculated. Inter period comparison of various parameters related to the Indian Economy. Comparing the same with the definition of Recession and, thus, arriving at a conclusion. The time period of the study will be divided into two phases: Phase I: 2000-2004 and Phase II: 2005 onwards and further the period before recession (2007-08) and period during recession (2008-09) have been studied.

The next chapter covers the empirical study to estimate the impact of recession on India by adopting the above mentioned techniques.

CHAPTER- 4

ESTIMATION AND RESULT ANALYSIS

4. Introduction

The purpose of the present research is to analyse the performance of different sectors of the Indian economy, to determine whether the slowdown in the Indian economy is really a phase of recession. So the data of production for different sectors of the economy has been collected and analysed for the time period for the research project, which has been divided into two phases i.e. Phase I (2000-04) and Phase II (2004-09) along with the Period before recession (2007-08) and the Period during recession (2008-09). The growth rates of the different sectors for Phase I and Phase II have been calculated and compared. Also the percentage rate of growth for each year has been calculated. It basically solves the purpose to represent a true sketch of all these sectors, to understand the impact of recession on various sectors and see which sectors have been hit more by recession.

4.1 Performance of different Sectors of the Indian Economy

The in depth study of recessionary phase requires the basic understanding of the growth rate that has been followed by the Primary, Industrial and Service sectors over the period of study, so as to comprehend any noticeable variations, if any, in the production level of these sectors.

A nation's economy can be divided into various sectors, based on the proportion of the population engaged in the activity sector. When the economic activity depends mainly on exploitation of natural resources then that activity comes under the **Primary sector**. Agriculture and agriculture related activities, mining, etc are the Primary sectors of the economy. In other words, Industries engaged in production or extraction of natural resources such as crops, oil, ores, etc are covered under the Primary Sector.

In the present research, Primary Sector includes Mining Industry as well as food grains.

TABLE 4.1: GROWTH RATES OF MINING INDUSTRY

Serial no.	Year	Production of Coal, lignite (million tons)	Growth %	Production of Petroleum, crude (million tons)	Growth %
1	2000-01	332.6		32.4	
2	2001-02	352.6	6.01	32	-1.23
3	2002-03	367.29	4.17	33	3.12
4	2003-04	389.3	5.99	33.4	1.21
5	2004-05	413	6.09	34	1.79
6	2005-06	437.1	5.83	32.2	-5.29
7	2006-07	462.1	5.72	34	5.59
8	2007-08	491.1	6.27	34.1	0.29
9	2008-09	493.3	0.45	33.5	-1.75
Rate of Growth Period I		1.12	Rate of Growth Period I		1.79
Rate of Growth Period II		5.05	Rate of Growth Period II		6.99
Rate of Growth (Entire Period)		1.61	Rate of Growth (Entire Period)		2.64

Mining Industry is often defined as “the process or business of extracting ore or minerals from the ground”. The availability of minerals determines the pace of economic development of a country to a great extent. Minerals are basically natural resources. In this research, Mining Industry’s Production includes the production of Coal, Lignite, Petroleum, crude.

Coal is the main source of energy in the country and it accounts for about 67% of country’s commercial requirements. Coal is also an essential input in steel and carbon chemical industries. The production of Coal with lignite, which was 332.6 million tons in 2000-01, rose to 493.3 million tons in 2008-09 and the growth rate of the entire Period is 1.61. The growth rate of Period II is (5.05), as compared to the slow growth rate of 1.12 percent in period I. When the percentage growth rate for each year is calculated, the growth of the Period before recession (2007-08) is more i.e.6.7% as compared the growth of the Period during recession (2008-09) i.e. 0.45%.

Production of crude petroleum, which accounts for 40 per cent of this sector, was 32.4 million tons in 2000-01. Crude oil production in 2007-08 was 34.1 million tons, declines to 33.5 million tons in 2008-09 and the growth also declines during 2008-09 i.e. -1.75%. Petroleum consumption in the country is continuously increasing which results in high dependence on imports of crude oil and other petroleum products.

TABLE 4.2: GROWTH RATES OF FOOD GRAINS PRODUCTION

Serial no.	Year	Food grains Production (Million tons)	Growth %
1	2000-01	195.9	-
2	2001-02	212.9	8.68
3	2002-03	174.8	-17.89
4	2003-04	213.2	21.97
5	2004-05	198.4	-6.94
6	2005-06	208.6	5.14
7	2006-07	217.3	4.17
8	2007-08	230.67	6.15
9	2008-09	233.88	1.39
Rate of Growth Period I		2.59	
Rate of Growth Period II		6.05	
Rate of Growth (Entire Period)		3.01	

Agricultural Production in India can be broadly classified into food crops and commercial crops. In India the major food crops include rice, wheat, pulses, coarse cereals etc. The performance of Indian agricultural remains less as indicated by the growth of food grains production, which declined in 2002-03 to -17.89%, the lowest growth since 2000-01. It is worth mentioning here that in 2003-04 the performance of food grains production has been the highest, i.e., recording a growth rate of 21.97% growth as compared to the previous year.

The agricultural sector has become a key concern of the government of India as confirmed by the main objective of the 11th Five Year Plan for 2007-12, to make growth more inclusive. The rate of growth from 2000-04 (i.e., 2.59) is less than the rate of growth of period II (i.e. 6.05).

The **Industrial sector** of an economy dominated by the manufacture of finished products. Unlike the primary sector, which collects and produces raw materials for manufacture, a secondary sector makes products that are more likely to be consumed by individuals. Metallurgical Industries comprise of finished steel, steel castings and aluminum etc.

TABLE 4.3: GROWTH RATES OF METALLURGICAL INDUSTRIES

Serial no.	Year	Production of Metallurgical Industries (million tones)	Growth %
1	2000-01	32.1728	
2	2001-02	32.0614	-0.35
3	2002-03	35.45	10.57
4	2003-04	39.609	11.73
5	2004-05	42.2381	6.64
6	2005-06	45.41	7.51
7	2006-07	53.8311	18.54
8	2007-08	57.4227	6.67
9	2008-09	57.7567	0.58
Rate of Growth Period I		1.52	
Rate of Growth Period II		5.14	
Rate of Growth (Entire Period)		1.97	

The Production status of this industry shows the highest growth 18.54% in 2006-07 and the lowest of -0.35% in 2001-02. The yearly comparison depicts that after 2007-08, the growth of the production of this sector declines from 6.67% to 0.58% in the recessionary period.

Engineering Industry is one of the recently developed industries of the country. Since the II Five Year Plan onwards, a good amount of investment was diverted towards the industrial sector. Accordingly, a huge investment was made in the heavy and capital goods industries. In order to strengthen the base of these industries, development of engineering industry became mandatory. This industry comprises of Mechanical Engineering Industries and Electrical Engineering Industries. **Mechanical Engineering Industries** include: Machine tools, automobiles, Motor cycles, scooters and mopeds, Power driven pumps, Diesel engines, Bicycles and agricultural tractors.

TABLE 4.4: GROWTH RATES OF MACHINE TOOLS

Serial no.	Year	Machine tools (Rs. Million)	Growth %
1	2000-01	12263	
2	2001-02	16495	34.51
3	2002-03	21793	32.12
4	2003-04	22225	1.98
5	2004-05	23884	7.46
6	2005-06	26367	10.40
7	2006-07	26410	0.16
8	2007-08	26914	1.91
9	2008-09	24282	-9.78
Rate of Growth Period I			1.06
Rate of Growth Period II			6.41
Rate of Growth (Entire Period)			1.03

The Performance of the machine tools industry (table 4.4) depicts a negative growth rate in 2008-09, which shows the clear impact of recession on this sector of economy. In spite of this, the growth rate of period II is still higher than growth rate of period I.

TABLE 4.5: GROWTH RATES OF AUTOMOBILES

Serial no.	Year	Production of Automobiles (Total) (Thousand)	Growth %
1	2000-01	784.2	
2	2001-02	765.1	-2.44
3	2002-03	934.9	22.19
4	2003-04	1283.1	37.24
5	2004-05	1564.5	21.93
6	2005-06	1701.6	8.76
7	2006-07	2065.6	21.39
8	2007-08	2313	11.98
9	2008-09	2010.9	-13.06
Rate of Growth Period I		1.61	
Rate of Growth Period II		5.41	
Rate of Growth (Entire Period)		1.86	

The performance of the automobile sector also depicts a deceleration in growth in the recession period and is the lowest since 2000-01. The growth rate of 37.24% recorded by this industry is the highest in 2003-04. Considering the two periods, period II depicts higher growth as compared to period I.

TABLE 4.6: GROWTH RATES OF MOTOR CYCLES, SCOOTERS AND MOPEDS

Serial no.	Year	Production of Motor cycles, scooters and mopeds (thousand)	Growth %
1	2000-01	3756.1	-
2	2001-02	3932.4	4.69
3	2002-03	5087.5	29.37
4	2003-04	5624.9	10.56
5	2004-05	6454.8	14.75
6	2005-06	7601.8	17.77
7	2006-07	8436.2	10.98
8	2007-08	8009.3	-5.06
9	2008-09	8361.4	4.40
Rate of Growth Period I		1.32	
Rate of Growth Period II		4.94	
Rate of Growth (Entire Period)		1.59	

The industry which relates to motor cycles, scooters and mopeds production had shown the least growth rate in the period 2007-08 but in 2008-09, this industry moved back on the track, with 4.40% growth. The overall growth rate is 1.59. Period wise comparison depicts acceleration in growth in period II, from 1.32 percent to 4.94 percent.

TABLE 4.7: GROWTH RATES OF POWER DRIVEN PUMPS

Serial no.	Year	Production of Power driven pumps (thousand)	Growth %
1	2000-01	481.9	
2	2001-02	472	-2.05
3	2002-03	584	23.73
4	2003-04	663.3	13.58
5	2004-05	649.2	-2.12
6	2005-06	718.3	10.64
7	2006-07	768.7	7.02
8	2007-08	789.8	2.74
9	2008-09	1064.3	34.75
Rate of Growth Period I		1.50	
Rate of Growth Period II		5.67	
Rate of Growth (Entire Period)		2.06	

In the mechanical engineering industries, the growth rate of power driven pumps show very amazing growth rate in 2008-09 with 34.75%. This is the highest growth rate since 2000-01 and industry depicts the least growth rate in financial year 2004-05. Year- wise comparisons depict a rapid rise in growth in 2008-09, the period corresponding with recession, to 34.75 percent from 2.74 percent in 2007-08.

TABLE 4.8: GROWTH RATES OF DIESEL ENGINES (STATIONARY)

Serial no.	Year	Production of Diesel Engines (stationary) (Thousand)	Growth %
1	2000-01	306	
2	2001-02	219	-28.43
3	2002-03	300	36.99
4	2003-04	310.3	3.43
5	2004-05	299	-3.64
6	2005-06	337.7	12.94
7	2006-07	460.8	36.45
8	2007-08	517.2	12.24
9	2008-09	614.3	18.77
Rate of Growth Period I		2.30	
Rate of Growth Period II		5.29	
Rate of Growth(Entire Period)		3.14	

The production of diesel engines also is higher in 2008-09, as compared to the production of 2007-08. The least growth rate of this industry was -28.43 percent during the year 2001-02. The growth rate of production has been higher in period II as compared to period I.

TABLE 4.9: GROWTH RATES OF BICYCLES

Serial no.	Year	Production of Bicycles (Thousand)	Growth %
1	2000-01	14975	
2	2001-02	11899	-20.54
3	2002-03	11595	-2.55
4	2003-04	12341	6.43
5	2004-05	8030	-34.93
6	2005-06	8267.8	2.96
7	2006-07	10598.8	28.19
8	2007-08	11397.4	7.53
9	2008-09	11123.4	-2.40
Rate of Growth Period I		1.08	
Rate of Growth Period II		5.35	
Rate of Growth (Entire Period)		1.74	

The growth rate of bicycles in period I is less, as compared to growth rate of 5.35 percent in period II. The overall growth rate of the industry is 1.74 percent. The production for this industry decelerated from 7.53 percent in period before recession to -2.40 percent in period corresponding with recession.

TABLE 4.10: GROWTH RATES OF AGRICULTURAL TRACTORS

Serial no.	Year	Production of Tractors (thousand)	Growth %
1	2000-01	284.4	
2	2001-02	225.6	-20.68
3	2002-03	192.2	-14.81
4	2003-04	178.9	-6.92
5	2004-05	242.3	35.44
6	2005-06	253.8	4.75
7	2006-07	310.7	22.42
8	2007-08	304.4	-2.03
9	2008-09	303.3	-0.36
Rate of Growth Period I		0.98	
Rate of Growth Period II		5.31	
Rate of Growth (Entire Period)		4.81	

In table 4.10, the rate of growth is unsatisfactory in period I with only 0.98 percent growth and the growth rate was also negative for the years, 2001-02, 2002-03, 2003-04, 2007-08, 2008-09. These growth rates show the less development of this segment of mechanical engineering industry.

Electrical Engineering Industries consist of Power transformers, electric motors, electric fans & lamps, Aluminum conductors.

TABLE 4.11: GROWTH RATES OF POWER TRANSFORMERS

Serial no.	Year	Production of Power transformers (Million KVA)	Growth %
1	2000-01	70.7	
2	2001-02	75.6	6.93
3	2002-03	74.4	-1.59
4	2003-04	62.7	-15.73
5	2004-05	59.5	-5.10
6	2005-06	68.3	14.79
7	2006-07	71.4	4.54
8	2007-08	73.2	2.52
9	2008-09	71.9	-1.78
Rate of Growth Period I		2.23	
Rate of Growth Period II		4.83	
Rate of Growth (Entire Period)		4.07	

As tables 4.11 depicts that, in electrical engineering industry, the production of power transformers increased in period II as compared to the rate of growth of period I. The recessionary period depicts a slowdown of growth from 2.52 in 2007-08 to -1.78 percent in 2008-09.

TABLE 4.12: GROWTH RATES OF ELECTRIC MOTORS

Serial no.	Year	Production of Electric motors (Million hp)	Growth %
1	2000-01	5.6	
2	2001-02	5.4	-3.57
3	2002-03	5.1	-5.56
4	2003-04	8.7	70.59
5	2004-05	10.8	24.14
6	2005-06	10.5	-2.78
7	2006-07	12.4	18.09
8	2007-08	12.9	4.03
9	2008-09	13.5	4.65
Rate of Growth Period I		1.96	
Rate of Growth Period II		5.61	
Rate of Growth (Entire Period)		1.98	

Table 4.12 shows that the rate of growth of the production of electric motors for period 2003-04 was the highest one. Also the rate of growth of 2008-09 is more than the rate of growth for period 2007-08. In fact, the production of Electric motors has been increasing since 2005-06. Period depicts a higher growth of 5.61 percent as compared to period I.

TABLE 4.13: GROWTH RATES ELECTRIC FANS AND ELECTRIC LAMPS

Serial no.	Year	Production of Electric fans and Electric lamps (million)	Growth %
1	2000-01	454.1	
2	2001-02	438.6	-3.41
3	2002-03	465.8	6.20
4	2003-04	981.8	110.78
5	2004-05	470.3	-52.10
6	2005-06	488.8	3.93
7	2006-07	478.2	-2.17
8	2007-08	438.7	-8.26
9	2008-09	435.8	-0.66
Rate of Growth Period I		1.82	
Rate of Growth Period II		6.47	
Rate of Growth (Entire Period)		4.15	

Table 4.13 depicts that the production of electric fans and electric lamps shows the highest growth rate in 2003-04 of 110.78% which was the drastic growth percentage for this decade. The production growth rates are negative for subsequent periods, i.e., 2006-07, 2007-08 and 2008-09, but there is a slight improvement in the recessionary period.

TABLE 4.14: GROWTH RATES OF ALUMINUM CONDUCTORS

Serial no.	Year	Production of Aluminum conductors (Million tons)	Growth %
1	2000-01	0.0309	
2	2001-02	0.0335	8.41
3	2002-03	0.0372	11.04
4	2003-04	0.0348	-6.45
5	2004-05	0.0276	-20.69
6	2005-06	0.0281	1.81
7	2006-07	0.0268	-4.63
8	2007-08	0.0162	-39.55
9	2008-09	0.0178	9.88
Rate of Growth Period I		1.20	
Rate of Growth Period II		5.93	
Rate of Growth (Entire Period)		3.44	

In electrical engineering industry, the production of Aluminum Conductors also shows the lowest growth percentage in period 2007-08 since 2000-01 and the period 2008-09 shows the second highest growth rate since 2000-01. So the rate of growth has actually increased during the recessionary phase.

Chemical and Allied Industries comprise of Nitrogenous fertilizers, Phosphoric fertilizer (P205), Soda Ash, and Caustic Soda.

TABLE 4.15: GROWTH RATES OF CHEMICAL AND ALLIED INDUSTRIES

Serial no.	Year	Production of Chemical Industries (Million tons)	Growth %
1	2000-01	18.043	
2	2001-02	17.898	-0.80
3	2002-03	17.593	-1.70
4	2003-04	17.503	-0.51
5	2004-05	19.123	9.26
6	2005-06	19.772	3.39
7	2006-07	20.167	1.99
8	2007-08	18.777	-6.89
9	2008-09	18.362	-2.21
Rate of Growth Period I		1.16	
Rate of Growth Period II		6.98	
Rate of Growth (Entire Period)		3.32	

Table 4.15 depicts that the growth rate of Chemical and allied industry has been lowest for the year 2007-08 and in 2008-09 also the growth rate was negative. This sector shows the maximum production of 20.167 million tons in 2006-07 but afterwards the sector has shown the declining trend.

TABLE 4.16: GROWTH RATES OF PAPER AND PAPER BOARD

Serial no.	Year	Production of Paper & paper board (million tons)	Growth %
1	2000-01	3.09	
2	2001-02	3.176	2.78
3	2002-03	3.412	7.43
4	2003-04	3.684	7.97
5	2004-05	3.848	4.45
6	2005-06	3.913	1.69
7	2006-07	4.139	5.78
8	2007-08	4.26	2.92
9	2008-09	4.442	4.27
Rate of Growth Period I		1.32	
Rate of Growth Period II		5.32	
Rate of Growth (Entire Period)		1.54	

The paper industry has a vital role to play in socio-economic development of the country. Per capita paper consumption is an indicator of the progress of country's education, civilization and industrialization. Table 4.16 depicts the growth of paper industry in the recessionary period is positive and shows improvement in 2008-09.

TABLE 4.17: GROWTH RATES OF CEMENT

Serial no.	Year	Production of Cement (Million tons)	Growth %
1	2000-01	99.2	
2	2001-02	106.9	7.76
3	2002-03	116.3	8.79
4	2003-04	117	0.60
5	2004-05	125.3	7.09
6	2005-06	140.5	12.13
7	2006-07	154.7	10.11
8	2007-08	167.6	8.34
9	2008-09	181.4	8.23
Rate of Growth Period I		1.05	
Rate of Growth Period II		5.07	
Rate of Growth (Entire Period)		1.88	

Cement Industry is one of the most technologically advanced industries in India. It plays a crucial role in the housing and infrastructure sector of the economy. The cement industry has kept pace with technological advancement and modernization. The induction of advanced technology has helped the industry immensely to conserve energy and fuel and to save materials substantially. Cement industry also contributes in Indian exports. Improvement in quality of Indian Cement has found its ready markets in Bangladesh, Indonesia, Malaysia, Nepal, Middle East countries, Burma, Africa and South East Asian countries. Expansion of cement capacity and production assumes great importance in view of the growing demand from the infrastructure sector. As shown in table 4.17, in the recessionary phase there is a small decline in the growth rate of this sector of the economy and the production is on the continuous increasing path due to the above mentioned reason.

TABLE 4.18: GROWTH RATES OF PETROLEUM REFINERY PRODUCTS

Serial no.	Year	Production of Petroleum refinery products(Million tons)	Growth %
1	2000-01	96.2	
2	2001-02	99.8	3.74
3	2002-03	104.6	4.81
4	2003-04	113.5	8.51
5	2004-05	118.6	4.49
6	2005-06	119.8	1.01
7	2006-07	135.3	12.94
8	2007-08	144.1	6.50
9	2008-09	150.5	4.44
Rate of Growth Period I		1.29	
Rate of Growth Period II		5.41	
Rate of Growth (Entire Period)		1.85	

There are eighteen refineries in India, out of which seventeen are in the public sector and one is under the private sector in the Economy. Mangalore Refinery and Petrochemicals Limited (MRPL) which was a joint sector company became a PSU subsequent on acquisition of its majority shares by ONGC. Out of 17 Public Sector Refineries, 7 are owned by IOC Ltd., two each by Chennai Petroleum Corporation Ltd. (a subsidiary of IOCL), Hindustan Petroleum Corporation Ltd., and ONGC, one each by BPCL, Kochi Refineries Ltd. (a subsidiary of BLCL), Numaligarh Refinery Ltd. (a subsidiary of BPCL) and Bongaigaon Refineries and Petrochemicals (a subsidiary of IOCL). The Private sector Refineries belong to Reliance Industry Ltd. This has been commissioned in December 2008. The growth rate of the production of Petroleum refinery products has been 12.94% and is the highest in the year 2006-07, but in the period of 2007-08 and 2008-09, the growth rate of the production of this sector declines when compared with the 2006-07.

Textile Industries consist of Cotton cloth, Mixed/ Blended cloth, Man-made fiber fabrics, Spun Yarn, Filament Yarn, Staple Fiber, etc. In the present study, the textile industry has been sub- segmented in two parts:

- i. Production of Cotton cloth, Mixed/ Blended cloth, Man-made fiber fabrics and
- ii. Production of Spun Yarn, Filament Yarn, Staple Fiber.

TABLE 4.19: GROWTH RATES OF COTTON CLOTH, MIXED/ BLENDED CLOTH, MAN-MADE FIBER FABRICS

Serial no.	Year	Production of Cotton cloth, Mixed/ Blended cloth, Man-made fiber fabrics(million sq. meters)	Growth %
1	2000-01	40233	
2	2001-02	42034	4.48
	2002-03	41973	-0.15
4	2003-04	42383	0.98
5	2004-05	45378	7.07
6	2005-06	49577	9.25
7	2006-07	53389	7.69
8	2007-08	56025	4.94
9	2008-09	54966	-1.89
Rate of Growth Period I		0.97	
Rate of Growth Period II		4.94	
Rate of Growth (Entire Period)		2.04	

The textile industry's predominant presence in the Indian economy is manifest in its significant contribution to the industrial production, employment generation, and foreign exchange earnings. The textile industry is a key area where India has an opportunity for success on a global scale, given low cost of labor. Conversely textile is a labor intensive industry which has the potential to generate jobs for a large number of people. India competes with countries like China, Bangladesh and Pakistan in this field. The growth

and all round development of this industry has a direct bearing on the improvement of the economy of the nation.

The growth rate of the Production of Cotton cloth, Mixed/ Blended cloth, Man-made fiber fabrics was only 0.97 in Period I but the growth rate in Period II has been 4.94%. In the recessionary period the rate of growth became -1.89% which has been the lowest in the period under study.

TABLE 4.20: GROWTH RATES OF SPUN YARN, FILAMENT YARN, AND STAPLE FIBER

Serial no.	Year	Production of Spun Yarn, Filament Yarn, Staple Fiber (million tons)	Growth %
1	2000-01	4.984	
2	2001-02	4.927	-1.14
3	2002-03	5.095	3.41
4	2003-04	5.123	0.55
5	2004-05	5.353	4.49
6	2005-06	5.605	4.71
7	2006-07	6.322	12.79
8	2007-08	6.756	6.86
9	2008-09	6.041	-10.58
Rate of Growth Period I		1.76	
Rate of Growth Period II		5.57	
Rate of Growth (Entire Period)		2.47	

The Table 4.20 shows the Production of Spun Yarn, Filament Yarn, and Staple Fiber. In 2008-09, this sector shows the least growth rate since 2000-01. The highest growth rate is 12.79% in the period 2006-07. Period II depicts higher growth as compared to period I.

TABLE 4.21: GROWTH RATES OF ELECTRICITY GENERATED

Serial no.	Year	Production of Electricity Generated (Billion KWH)	Growth %
1	2000-01	499	
2	2001-02	515	3.21
3	2002-03	531	3.11
4	2003-04	558	5.08
5	2004-05	587	5.20
6	2005-06	617	5.11
7	2006-07	662	7.29
8	2007-08	704.4	6.40
9	2008-09	732.8	4.03
Rate of Growth Period I		1.21	
Rate of Growth Period II		5.16	
Rate of Growth (Entire Period)		1.89	

Table 4.21 depicts the growth rates of the Production of Electricity Generated. As shown in the table, the rate of growth of this sector shows the positive growth rates since 2000-01. The growth rate has improved in the second period. The recessionary trend is visible in this sector as the percentage yearly growth has declined from 6.40 in 2007-08 to 4.03 in 2008-09.

Among all the industries, The IT industry is the most recently developed industry of the economy. This industry is popularly known as InfoTech industry. India is now playing a major role in the promotion and development of InfoTech throughout the world. In earlier millennium, India led the world on the basis of knowledge. Today history is repeating itself. Young Indian entrepreneurs are at the forefront of InfoTech revolution, whether in Silicon Valley, Bangalore or Hyderabad. They have shown how ideas, knowledge, entrepreneurship and technology can combine to yield unprecedented growth of income, employment and wealth. Among all these features of the IT industry in India, the growth rates of IT sector become mandatory for the present study.

TABLE 4.22: GROWTH RATES OF IT SECTOR

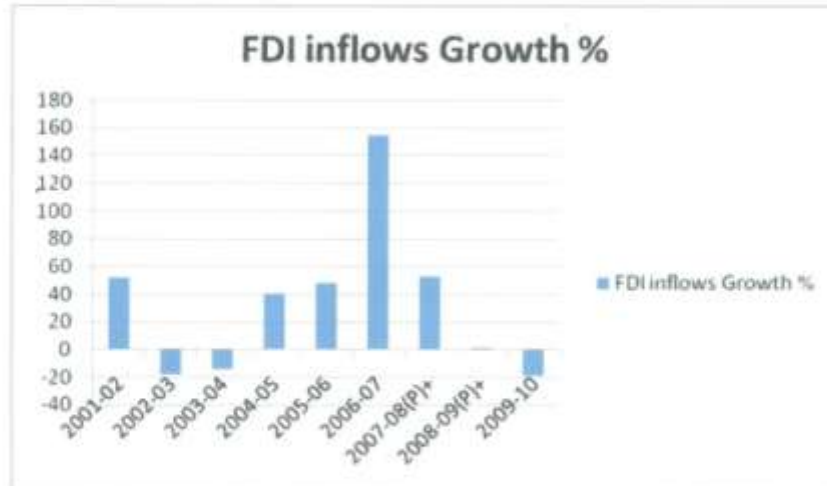
Serial no.	Year	IT Sector (Rs. millions)	Growth %
1	2000-01	6885	
2	2001-02	8012.4	16.37
3	2002-03	9700	21.06
4	2003-04	11890	21.95
5	2004-05	15242	28.85
6	2005-06	19030	24.85
7	2006-07	24400	28.22
8	2007-08	29582	21.24
9	2008-09	37245	25.90
10	2009-10	41122	10.41
Rate of Growth Period I		1.23	
Rate of Growth Period II		5.33	
Rate of Growth (Entire Period)		2.28	

Table 4.22 shows that the rate of growth of the IT sector was more in period II as compared to the rate of growth of period I. The yearly rate of growth depicts that the highest growth in 2004-05 with 28.85% and the lowest rate of growth in 2009-10 with 10.41%. There is a sharp fall in yearly growth from 25.90 in 2007-08 to 10.41 in 2008-08, the year of recession.

4.2 Current Scenario of FDI

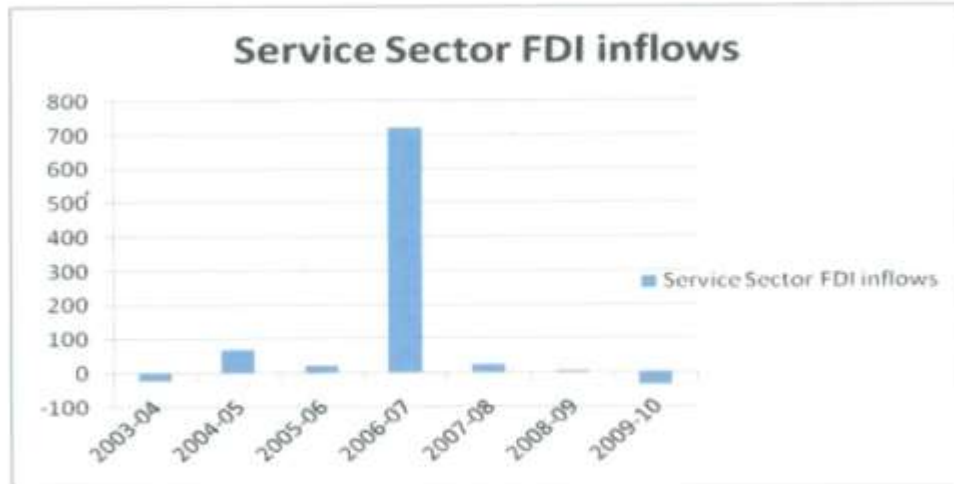
The Government of India has taken many initiatives to attract FDI inflows, to boost the Indian economy since economic liberalization. FDI inflows in India have been analyzed on the basis of the following categorization, viz., year-wise, country-wise, sector-wise and region-wise FDI inflows. In the present study, the year-wise as well as sector-wise FDI inflows in India have been shown.

FIGURE 1: YEAR-WISE GROWTH RATES OF FDI INFLOWS



The year-wise FDI inflows in India are presented in Figure 1. It is clear from the figure that FDI inflows went up in 2001-02. This is mainly due to the initiatives taken by the Government of India in attracting FDI inflows in India. However, there has been inconsistency in the growth rate of FDI inflows. The FDI growth rate was positive till 2001-02, but thereafter it was negative in 2002-03 and 2003-04 and positive in 2001-02, 2004-05 and 2005-06. The growth rate in FDI inflows has been the highest in 2006-07 and the least growth has been recorded in 2009-10, since 2000-01. In this study, the rate of growth of period I, is calculated to be 1.93 and the rate of growth of Period II is 1.09. This is the only sector in which, the hypothesis become true that the rate of growth of period I has been higher as compared to the rate of growth of period II and this sector clearly depicts the impact of recession.

FIGURE II: GROWTH RATES OF FDI INFLOWS IN SERVICE SECTOR



As depicted in the above figure, the service sector has been much influenced by the recession as the rate of growth falls becomes negative after 2006-07.

FIGURE III: GROWTH RATES OF FDI INFLOWS IN COMPUTER SOFTWARE AND HARDWARE

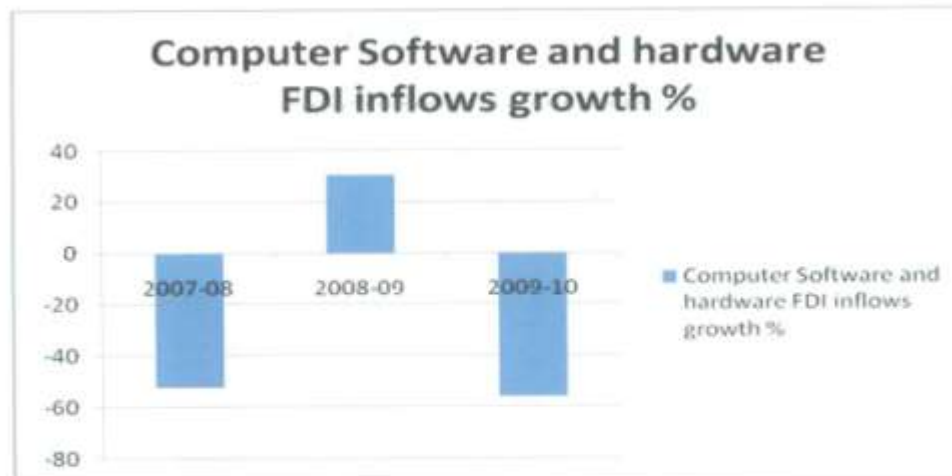


Figure III depicts that the growth rates of FDI inflows in the computer software and hardware declines in 2007-08 and started rising in the period 2008-09 and after that the growth rates falls in the year 2009-10.

FIGURE IV: GROWTH RATES OF FDI INFLOWS IN TELECOMMUNICATIONS SECTOR

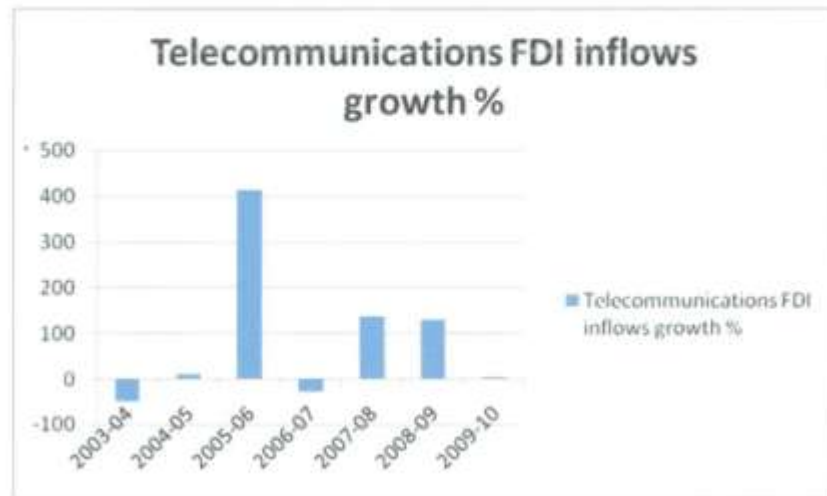
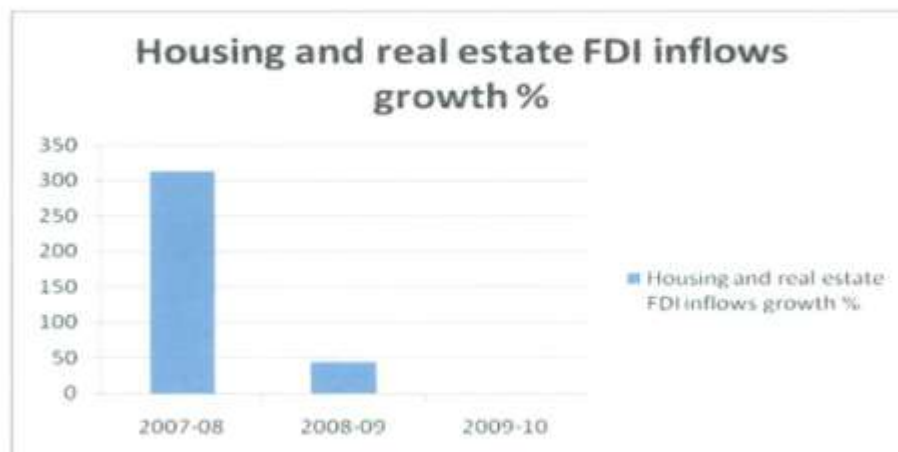


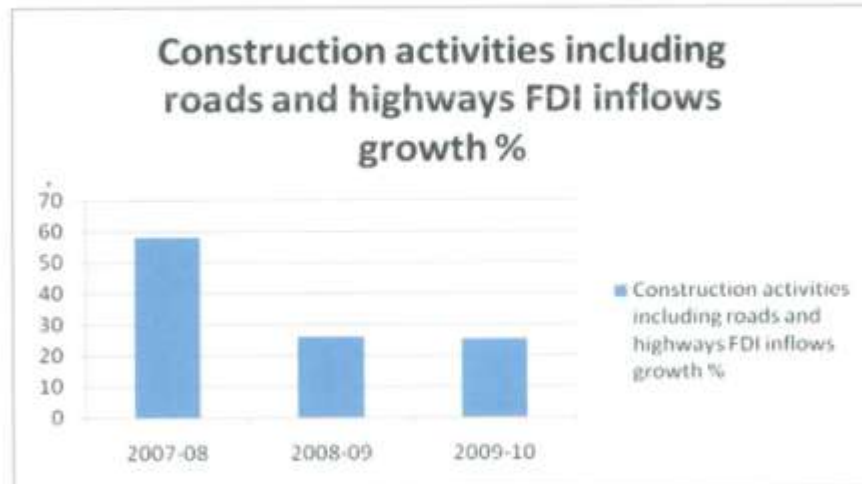
Figure IV depicts that the growth % in 2008-09 declined and the diminishing trend is also shown in period 2009-10.

FIGURE V: GROWTH RATES OF FDI INFLOWS IN HOUSING AND REAL ESTATE SECTOR



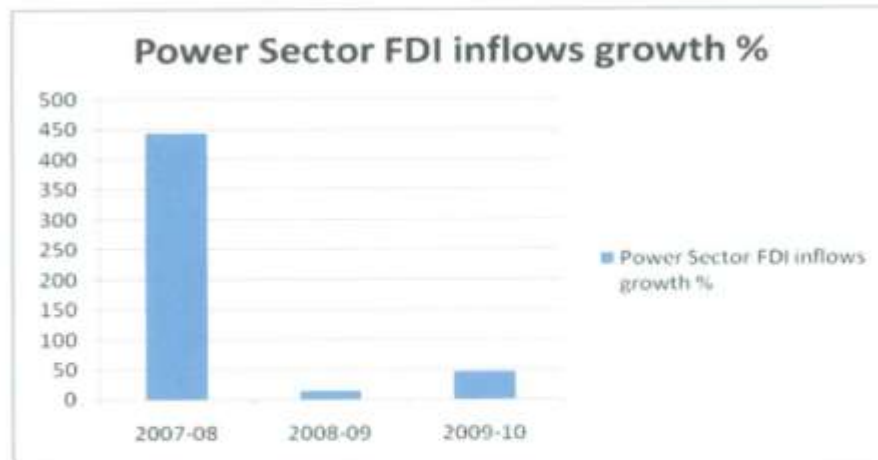
The figure V shows that the rate of growth for 2009-10 is only 0.57% which is the least, since 2007-08.

FIGURE VI: GROWTH RATES OF FDI INFLOWS IN CONSTRUCTION ACTIVITIES INCLUDING ROADS AND HIGHWAYS



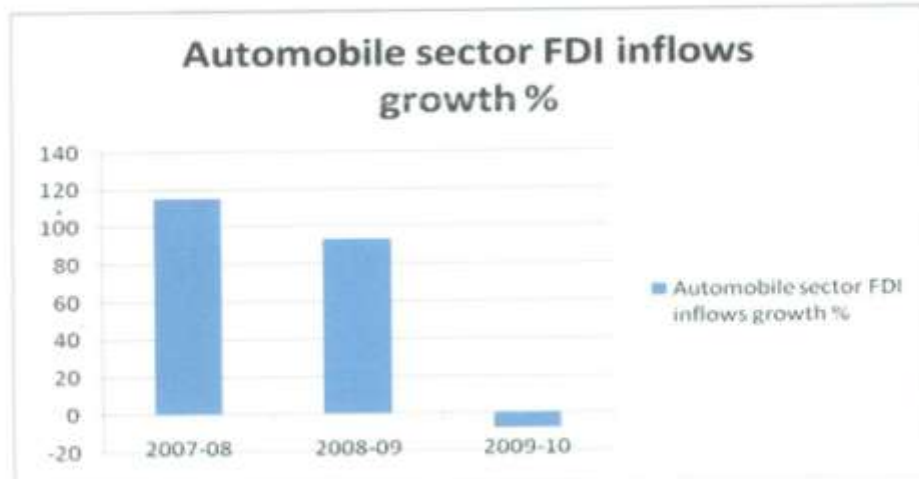
When the FDI inflows for the Construction activities are analysed, it has been found that the FDI inflows in this sector are positive but show a deceleration in 2008-09 as well as 2009-10.

FIGURE VII: GROWTH RATES OF FDI INFLOWS IN POWER SECTOR



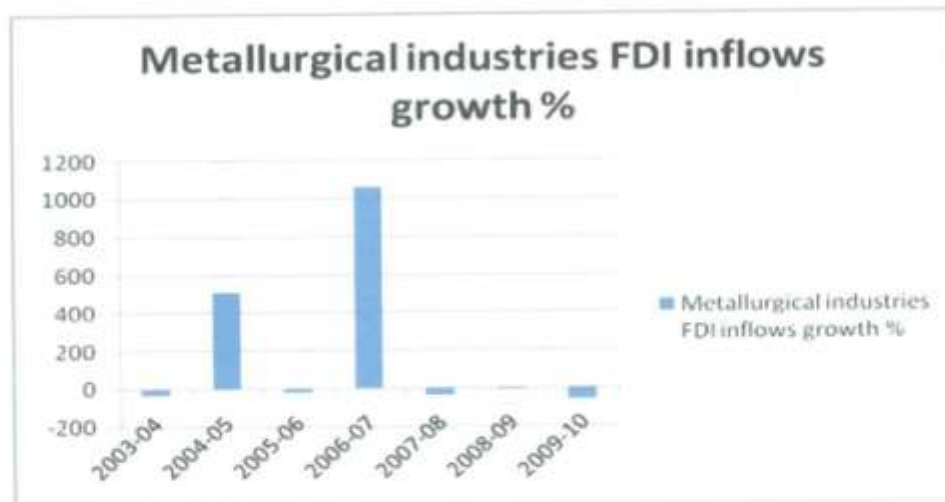
The growth rates of FDI inflows in the Power sector decreased in the period 2008-09 and started rising in 2009-10. The growth rate of FDI inflows in this sector has been quite high in 2007-08.

FIGURE VIII: GROWTH RATES OF FDI INFLOWS IN AUTOMOBILE SECTOR



The figure VIII depicts that the FDI inflows in automobile sector declined in 2008-09, and in 2009-10, it has been negative.

FIGURE IX: GROWTH RATES OF FDI INFLOWS IN METALLURGICAL INDUSTRIES



The figure IX depicts that the FDI inflows in the metallurgical industries fell after 2006-07 and the rate of growth for period 2003-04, 2005-06, 2007-08, 2008-09, 2009-10 has been negative. So this sector records a lower growth.

FIGURE X: GROWTH RATES OF FDI INFLOWS IN PETROLEUM AND NATURAL GAS

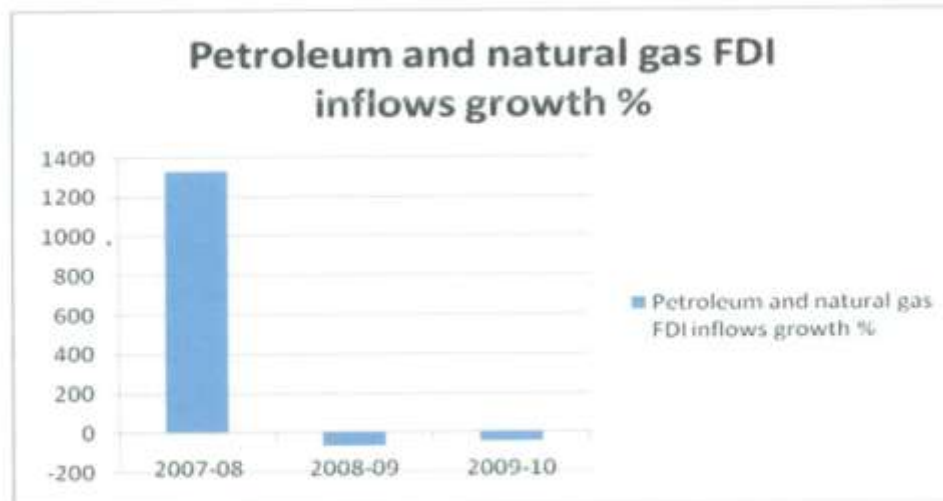
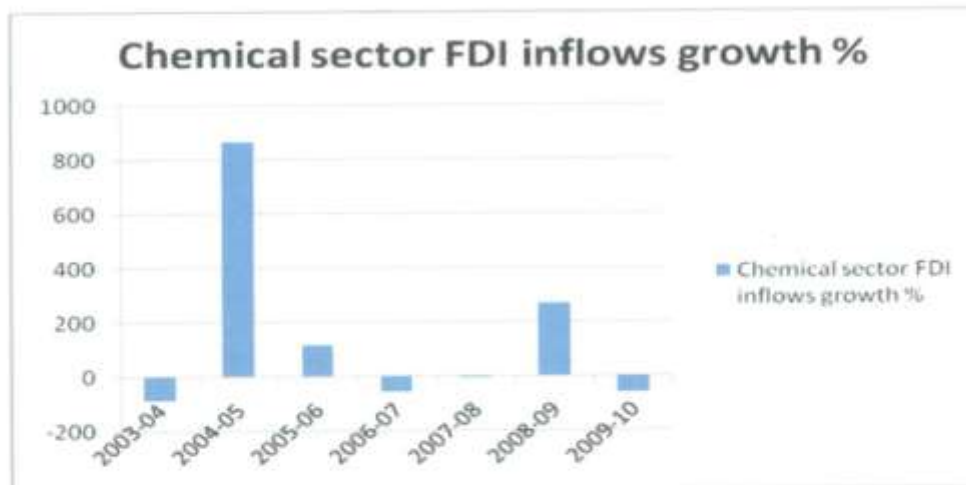


Figure X throws light on the fact that FDI inflows in the petroleum and natural gas declined in 2008-09 as well as 2009-10.

FIGURE XI: GROWTH RATES OF FDI INFLOWS IN THE CHEMICAL INDUSTRY



The percentage growth rate of the FDI inflows in the chemical industry as depicted, in the above figure has been the highest in the period 2004-05 and is positive, in 2008-09, but declines again in 2009-10.

4.3 Status of Foreign Portfolio Investment

Portfolio investment mainly comprising foreign institutional investors' (FIIs) investments and American depository receipts (ADRs)/global depository receipts (GDRs). It witnessed large net inflows due to large purchases by FIIs in the Indian capital market reflecting revival in growth prospects of the economy and improvement in global investors' sentiment. Institutional investors include hedge funds, insurance companies, pension funds and mutual funds. The term FII is used most commonly in India to refer to outside companies investing in the financial markets of India. International institutional investors must register with the Securities and Exchange Board of India to participate in the market. One of the major market regulations pertaining to FIIs involves placing limits on FII ownership in Indian companies.

FIGURE XII: GROWTH RATES OF FII'S (NET)

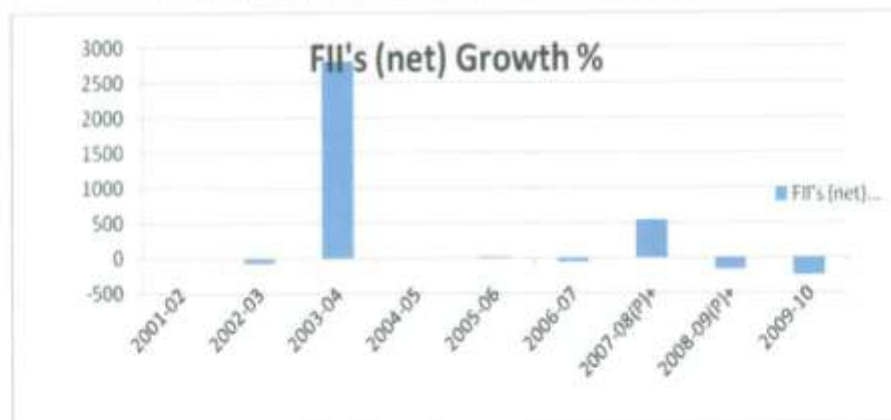


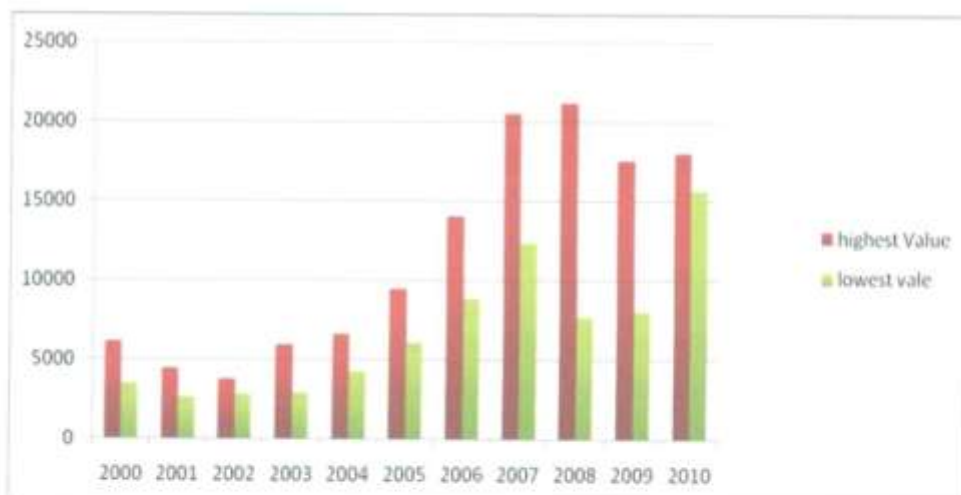
Figure XII highlights that the rate of growth of the FII's (net) in India is falling after 2007-08 and in 2008-09 the growth rate fell to less than zero and the same situation is also prevalent in 2009-10. So the recessionary impact is visible in this sector.

Progress on developing India's capital market, which is already more competitive, deep and developed by international markets standards, continued. Business in the country's oldest stock exchange, namely the Bombay Stock Exchange (BSE) dating back to 1875, which is also one of the oldest stock exchanges in the world, continued to thrive.

Overseen by Securities and Exchange Board of India (SEBI), an independent statutory regulatory authority, the country's capital market dealt in scripts of a large number of listed companies with a wide geographical outreach, providing a world class trading and settlement system, a wide range of product availability with a fast growing derivatives market, and well laid down corporate governance and investor protection measures.

The Indian capital market began the year 2008 on a bullish note, with the BSE index touching new peaks of 20,873, on January 8, 2008 but was affected adversely thereafter reflecting the impact of global financial crisis. The movement in equity prices in Indian capital market was in tandem with trends in major international equity markets; the Indian equity market weakened further during September- December 2008, following sharp decline in stock markets across the globe and perceptible shift in investor preferences. Having regards to these trends, the regulatory measures initiated during the year were aimed at ensuring the soundness and stability of the Indian capital market.

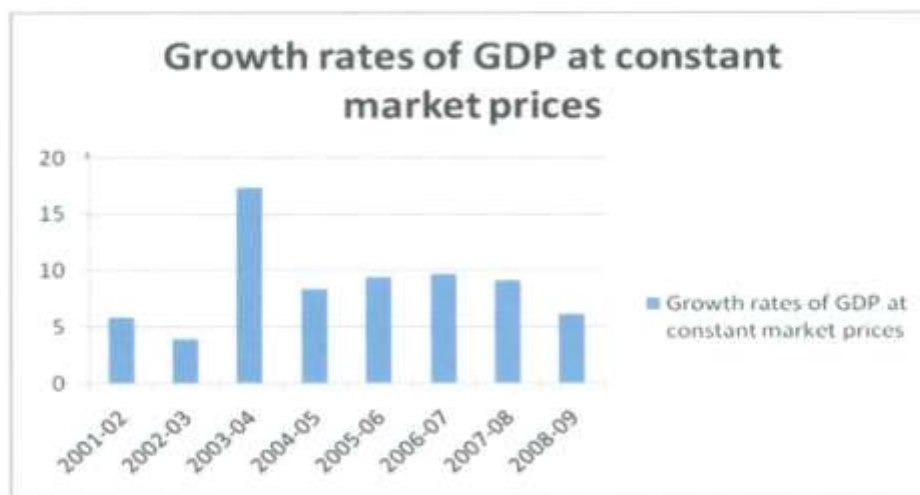
FIGURE XIII THE HIGHEST AND THE LOWEST VALUES IN THE SENSEX



The fluctuations in the capital market with the help of BSE SENSEX have been shown. The fluctuations depict that the highest value has been in the year 2008 and the highest-low in the year 2002. The fluctuations in the lowest values depict that the lowest value has been in 2001. There is a fall in the highest value of SENSEX in the year 2009 and 2010, as compared to 2008. So the impact of recession is visible on Indian stock market.

4.4 Status of Gross Domestic Product

FIGURE XIV: THE GROWTH RATES OF GDP AT CONSTANT MARKET PRICES



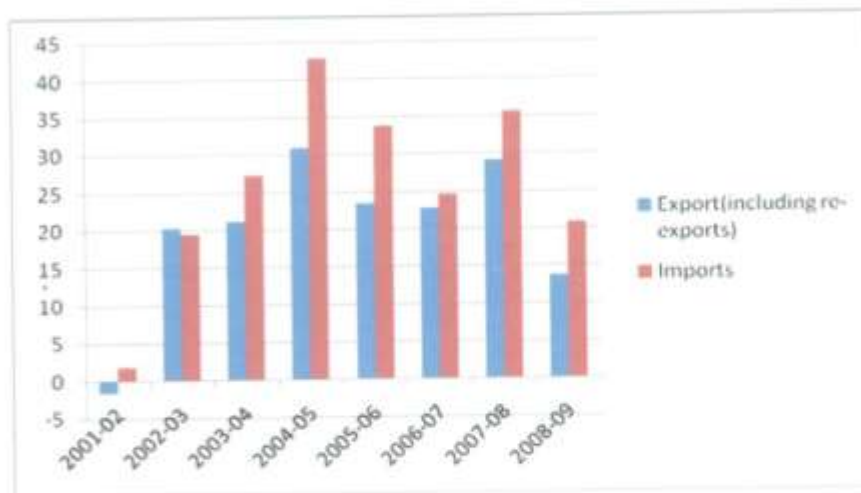
One of the basic objectives of the study has been to study the impact of recession on Gross Domestic Product (GDP). GDP is the total money value of all final goods and services produced within the geographical boundaries of the country during a given period of time. Real GDP growth rate shows the increasing trend but fell due to recession in the global economy in the year 2008-09.

4.5 Status of Exports:

India's trade with all the regions of the world have increased over the years. In view of the current wave of world-wide globalization, India has taken major initiatives to diversify its exports as also their destinations. Indian exports cover over 7500 commodities to about 190 countries while imports from about 140 countries account for over 6000 commodities.

The Balance of trade has remained unfavourable during the whole planning period, i.e., imports have exceeded exports.

FIGURE XV GROWTH RATES OF EXPORTS AND IMPORTS



The above figure shows the growth rates of Exports as well as imports. This is clear that in each year the growth rates of imports exceeds the growth rates of exports, which leads to the unfavourable balance of trade in India.

4.6 Regression Model :

One of the objectives of the study has been to study the factors causing recession. Gross domestic product at constant prices is taken as dependent variable. The independent variables considered in the model are:

- i) Foreign Direct Investment
- ii) Foreign Institutional Investment
- iii) IT sector Production

The results of the regression are depicted below in table 4.23 and 4.24. The predictors of the model are: IT Sector, FII and FDI. The model explains 99.10 percent of variation. So IT sector, FDI and FII influence the GDP growth of India.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df2	Sig. F Change	
1	.981 ^a	.961	.956	133802.339	.961	174.403	1	7	.000	
2	.992 ^b	.984	.979	92094.343	.023	8.776	1	6	.025	
3	.997 ^c	.994	.991	59933.960	.010	9.167	1	5	.029	2.790
a. Predictors: (Constant), IT Sector										
b. Predictors: (Constant), IT Sector, FII										
c. Predictors: (Constant), IT Sector, FII, FDI										
d. Dependent Variable: GDP										

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1582021.886	92479.331		17.107	.000
	IT Sector	59.443	4.501	.981	13.206	.000
2	(Constant)	1496111.138	69947.180		21.389	.000
	IT Sector	61.442	3.171	1.013	19.378	.000
	FII	10.254	3.461	.155	2.962	.025
3	(Constant)	1378588.063	59823.537		23.044	.000
	IT Sector	79.543	6.325	1.312	12.577	.000
	FII	11.410	2.285	.172	4.994	.004
	FDI	-15.114	4.992	-.312	-3.028	.029
a. Dependent Variable: GDP						

4.7 Conclusion

When the period-wise growth rates of the different sectors of the economy have been calculated, then it is found that the rate of growth of period I is less than the rate of growth of period II, except for the rate of growth of the FDI inflows, where FDI inflows in Period I is higher than the rate of growth of period II.

For revealing the complete and clear impact of recession the year-wise growth rates have also been calculated and from these calculations, some important facts have come forward.

The growth rates fell during 2008-09 in case of production of Coal (Including lignite), Petroleum crude, food grains, metallurgical industries, machine tools, automobiles, bicycles, agricultural tractors, power transformers, electric fans, Cement, Petroleum refinery products, Cotton cloth, Mixed/ Blended cloth, Man-made fiber fabrics, Spun Yarn, Filament Yarn, Staple Fiber, electricity generation, IT sector, imports and exports, FDI, FII.

Thus the year-wise growth rates have shown the true picture of recession in the different sectors of the Indian economy, whereby most of the sectors reported a slow down in the recessionary period. So it can be concluded from the above analysis that recession had its impact on Indian economy, but the impact has been slower, as most of the sectors reported higher growth in period II of the analyses. Regarding the factors influencing GDP growth, the regression results highlight that the predictors of the model are: IT Sector, FII and FDI. These explain 99.10 percent of variation.

CHAPTER-5

CONCLUSION

5. Introduction

While the developed world, including the U.S, the Euro Zone and Japan, has plunged into recession, the Indian Economy is being affected by the spill-over effects of the global financial crisis (Chidambaram, 2008). Great savings habit among people, strong fundamentals, strong conservative and regulatory regime have saved Indian economy from going out of gear, though significant parts of the economy have slowed down and there is a wide variance of opinion about how long it will continue. It is expected that growth will be moderate in India. The most important lesson that has been learnt from the crisis is that India must be self-reliant. Though World Trade Organization (WTO) propagates free trade, India must adopt protectionist measures in certain sectors of the economy so that recession in any part of the globe does not affect our country.

5.1 Summary and Findings

The aim of the present research is to analyze the different sectors of the Indian economy and study the impact of recession. Although the impact of recession on the sectors of the Indian Economy can be seen, the impact is higher on the sectors which are directly related to the external sector. The sectors like FDI and FII are more influenced by the global economic turmoil.

For in-depth analysis, annual data has been used from the FY 2000-01 to 2009-10 to study the year-wise impact and the different sectors. The impact on production of different sectors of Indian economy, GDP, FDI, FII, Exports and imports have been studied for the total period of analysis. The growth rates have been calculated for the different sectors of the economy.

The results that have been found are diversified and vague as the growth rate in almost each sectors decline in 2008-09. But the surprising results that emerge from the study are that the rates of growth for period II, the period corresponding with the recessionary

phase are is higher than the rate of growth of period I, for all sectors except for FDI sector. So it can be inferred that the Indian economy is a growing economy and the impact has been much slower as the overall growth for Period II of analysis is not only positive, but also higher as compared to period I.

The fiscal year 2009-10 began as a difficult one. There was a significant slowdown in the growth rate in the second half of 2008-09, following the financial crisis that began in the industrialized nations in 2007 and spread to the real economy across the world. The growth rate of the gross domestic product (GDP) in 2008-09 was 6.7 per cent, with growth in the last two quarters hovering around 6 per cent. There was apprehension that this trend would persist for some time, as the full impact of the economic slowdown in the developed world worked through the system. It was also a year of reckoning for the policymakers, who had taken a calculated risk in providing substantial fiscal expansion to counter the negative fallout of the global slowdown. Inevitably, India's fiscal deficit increased from the end of 2007-08, reaching 6.8 per cent (budget estimate, BE) of GDP in 2009-10.

A delayed and severely sub-normal monsoon added to the overall uncertainty. The continued recession in the developed world, for the better part of 2009-10, meant a sluggish export recovery and a slowdown in financial flows into the economy. Yet, over the span of the year, the economy posted a remarkable recovery, not only in terms of overall growth figures but, more importantly, in terms of certain fundamentals, which justify optimism for the Indian economy in the medium to long term (Economic Survey 2009-10). So the factors responsible for slower GDP growth rate, in 2008-09 have been a deceleration export-import, decreases tax-GDP ratio, reduction in capital inflows. All these factors are responsible for slowdown in 2008-09.

5.2 Testing of Hypotheses:

The present study has taken the following hypotheses for analyzing the impact of recession on Indian economy.

H₁: Period II (2005 onwards) may be associated with higher GDP growth as compared to period I (2000-2004). Although the GDP growth rates slowed down during the recessionary period but they have been higher in the second period of analysis. So despite

recession, Indian economy can be said to be a growing economy. So this hypothesis has been accepted.

H₂: Period II (2005 onwards) may be associated with more output growth for all sectors as compared to period I (2000-04). This hypothesis has been accepted as most of the sectors except for FDI sector reported higher growth in Period II as compared to Period I.

H₃: IT sector grows at a lower rate as compared with other sectors in Period II. The growth rate of IT sector for Period II has increased to 5.33 percent from 1.23 percent in period I. If yearly on year growth is seen, then there is a sharp fall from 25.90 in 2007-08 to 10.41 in 2008-09, the year of recession. (Table 4.22) so this hypothesis has been partially accepted.

To sum up we can say that the global financial recession which started off as a sub-prime crisis of USA has brought all nations including India also into its fold, although the impact on India is less. The GDP growth rate which was around nine per cent over the last four years has slowed since the last quarter of 2008 owing to deceleration export-import, tax-GDP ratio, reduction in capital inflows and significant outflows due to economic slowdown. The demand for bank credit is also slackening despite comfortable liquidity in the system. Higher input costs and dampened demand have dented corporate margins while the uncertainty surrounding the crisis has affected business confidence leading to the crash of Indian stock market and volatility in foreign exchange market. Nevertheless, a sound and resilient banking sector, well-functioning financial markets, robust liquidity management and payment and settlement infrastructure, buoyancy of foreign exchange reserves have helped Indian economy to remain largely immune from the contagious effect of global meltdown. Regarding the factors influencing GDP growth, the regression results highlight that the factors influencing GDP growth are: IT Sector, FII and FDI. These three factors explain 99.10 percent of variation.

Indian financial markets are capable of withstanding the global shock, perhaps somewhat bruised but definitely not battered. India, with its strong internal drivers for growth, may escape the worst consequences of the global financial crisis. In other words, the fundamentals of the economy continue to be strong and robust. The global economic environment continues to remain uncertain, although the rate of contraction in economic

activities and the extent of pressures on financial systems eased in the first quarter of 2009-10. India is not unique as almost every country, whether or not directly affected, has to manage the current economic crisis under uncertainty.

The highest growth in period II has been recorded in Petroleum and Petroleum products (6.99%). This is followed by Chemical industry (6.98%) and Electric lamps (6.47%). Cotton textile sector records a lower growth in period II.

5.3 Limitations

The present study also has certain limitations. One of the important limitations of the present research is that due to time constraint, more detailed research could not be done in this area. Detailed analysis was also not possible, because due to lack of availability of certain data, more variables couldn't be taken into consideration especially the employment in the different sectors of economy, etc.

5.4 Future Scope

The present study has highlighted the growing sectors and weaker sectors of the economy. In depth study of these sectors can throw light on the steps taken in future to avoid a slow down. Similarly analysis of growing sectors can be an example for others to follow the policies adopted by these to reduce the impact of recession. Case studies of some of the leading firms can be taken up for further analysis.

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