# A STUDY OF GDP GROWTH, SELECT FINANCE RATIOS AND ECONOMIC VARAIABLES ON FINANCIAL HEALTH OF SELECTED INDUSTRIAL SECTOR W.R.T.POST LIBERALIZATION.

A Thesis

**SUBMITTED TO THE**

**TILAK MAHARASHTRA VIDYAPEETH PUNE**

**FOR THE DEGREE OF**

**DOCTOR OF PHILOSOPHY**
In Management
Under the Board of Management Studies


BY
**SUHAS VINAYAK VAISHAMPAYAN**
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UNDER THE GUIDANCE OF

**DR. Y.S.VAISHAMPAYAN**

NOVEMBER 2020

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# Annexure III

## Tilak Maharashtra Vidyapeeth, Pune

### Undertaking

I Suhas Vinayak Vaishampayan.is the Ph.D Scholar of the Tilak Maharashtra Vidyapeeth in Management subject. Thesis entitled "A study of GDP growth, select finance ratios and economic variables on financial health of selected industrial sector w.r.t. post liberalization period" under the supervision of Dr Dr. Y.S. Vaishampayan, Solemnly affirm that the thesis submitted by me is my own work. I have not copied it from any source. I have gone through extensive review of literature of the related published / unpublished research works and the use of such references made has been acknowledged in my thesis. The title and the content of research is original. I understand that, in case of any complaint especially plagiarism, regarding my Ph.D. research from any party, I have to go through the enquiry procedure as decided by the Vidyapeeth at any point of time. I understand that, if my Ph.D. thesis (or part of it) is found duplicate at any point of time, my research degree will be withdrawn and in such circumstances, I will be solely responsible and liable for any consequences arises thereby. I will not hold the TMV, Pune responsible and liable in any case.

I have signed the above undertaking after reading carefully and knowing all the aspects therein.

**Suhas Vinayak Vaishampayan.**

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## Annexure IV

## CERTIFICATE OF THE SUPERVISOR

It is certified that work entitled “A study of GDP growth, select finance ratios and economic variables on financial health of selected industrial sector w.r.t. post liberalization period” is an original research work done by Suhas Vinayak Vaishampayan Under my supervision for the degree of Doctor of Philosophy in Management to be awarded by Tilak Maharashtra Vidyapeeth, Pune.

- To best of my knowledge this thesis
- Embodies the work of candidate himself
- Has duly been completed
- Fulfils the requirement of the ordinance related to Ph. D. degree of the TMV

Up to the standard in respect of both content and language for being referred to the examiner.

Dr. Y. S. Vaishampayan.

The Supervisor

# ACKNOWLEDGEMENT

I feel very happy in submitting my research thesis entitled “A study of GDP growth, select finance ratios and economic variables on financial health of selected industrial sector w.r.t. post liberalization period” under the supervision of Dr.Y.S. Vaishampayan.

I take this opportunity to thank my guide Dr. Y. S. Vaishampayan for his continuous support, guidance and encouragement.

I am thankful to my family members and friend circle for their continuous support in every respect, especially when things were not moving as expected.

Suhas Vinayak Vaishampayan.

Borivali, Mumbai

# CHAPTER SCHEME

# Chapter I

## I A: Introduction

### 1: Research Topic:

A study of GDP growth selects finance ratios and economic variables on financial health of selected industrial sector w.r.t. post liberalization period.

Selected Industries are Steel, Electricity, Cement and Automobile and the period of study is post liberalization means post 1990-91.

All the selected industries have potential to drive economy and its contribution to GDP and employment cannot be neglected. The said industries are selected because of the following reasons.

### a) Electricity Industry:

Electricity is blessing to humanity. Today we cannot think of one minute without power. It is required by house hold, farmers, and industry. In present environment use of power in transportation is vital as it is environmental friendly. Due to environmental consideration alternate sources of power are required. Solar power is very safe, natural, pollution free and cheap source of power. Electricity industry is primary driver of economic growth. As economy grows electricity consumption is bound to increase. Electricity is produce and consume on real time basis as power cannot be stored. Since demand of power is less than supply and demand for power will grow in the natural course of time for the entire economy sector has potential to grow in future. For rapid economic development twenty four by seven is the need of the hour. Sector is open to private players. Privatisation will bring

efficiency in the sector. Power distribution is also privatised. To avoid exploitation of consumer regulator is appointed by government. Without the permission of the regulator power Distribution Company cannot increase the power tariff.

**b) Cement Industry:**

Cement is considered to be second important industry essential for economic development. Cement is the basic raw material required everywhere and hence it is also basic industry. Real estate boom can bring higher growth rate as it is capable of providing employment to large spectrum of man power such as skilled, unskilled, semiskilled, white collar, blue collar etc. Cement is crucial for infrastructure development such as road construction railways, industrial houses and factories, housing etc. which has potential to boost the rate of growth. Hence cement is considered to be basic industry.

**c) Steel Industry:**

Steel is even more important. Steel is required for the production of power and cement. Steel is also considered to be basic industry. It is required for infrastructural development, housing, power, as well as other industries also. House hold also requires steel. Performance of auto industries is also depending on availability of good quality steel. It has got enormous strength to boost the economy. It is growing sector and demand driver. It requires huge investment and hence provides good opportunity for investors and businessman to invest their surplus money productively.

**d) Auto Industry:**

Automobile industries are also capable of providing employment to all types of peoples, skilled, unskilled rural urban etc. It also provides secondary employment. For example show rooms, service stations, large number of auto mechanics etc. Performance of auto industry to a very great extent depends on the rate of economic growth. At present industry is going through a bad patch as demand for automobiles is declining. Slowdown in auto also creates difficulties for steel industry and other ancillary industries as it creates huge demand for steel and products of ancillary industry such as auto cable, small plastic component etc. required to manufacture automobile. Automobile industry is a major force in the entire world. To some extent some of their products are price sensitive and hence margin in auto are declining. Industry is also facing problem of capacity underutilization.

1.1. Back ground of the Research:

All stakeholders such as management shareholders, workers, government etc are very much interested to know the financial performance of Industry. When financial performance of industry is exemplary government is benefited in terms of more tax revenue, share holder are benefited by getting more dividend and increased in the value of their shares, workers are expected to get bonus/incentives with better pay and management gets satisfaction about optimum use of their scarce resources which has resulted into more profit.

Let us see the benefits of good performance of industries in bit more detail. Exemplary performance of business also provides benefits to entire economy. Successful business provides employment to large number of people, good dividend to investors and hence increases the income of the people. More income in the hands of people means

poverty removal. People can provide better education to their children. India is still struggling for hundred percent enrolments to primary school. Good education will enhance skills and employability of the people which is a matter of concern of one and all in India's. Good education with more income means better life. More income along with better education can provide better health. Better health means more life expectancy. Better health, education, and good quality of life means higher human development index. HDI is an important index seen and monitor globally. It also uplifts the living standard of the people. Better life to people can increase happiness index, more safe and secure society and social peace which is missing at present. We will have a society with higher emotional quotient which is a talking point in today's society globally.

Benefits of exemplary performance by industry to government are also big. Foremost is more tax revenue not just by way of corporate tax but by way of more personal income tax and GST which is major source of tax revenue to government. More money in the hand of the government means more infrastructural spending. Better infrastructure will help industries to performance. More infrastructure spending means more opportunity for business as major work undertaken by government is done by private companies. Government spending on health, education will also increase which will benefit society at large. Government can also spend more on rural development which will bridge the gap between rural and urban areas. It will reduce the burden on cities. Subsidies can be provided by government to weaker industries, sectors, community which will be useful to reduce the problem of inequality. The problem of inequality is a matter of concern of the entire world. More money can be spent by government on research and development. It will help to bring more innovation. Innovation, better technology means better use of scare resources of the economy.

Tensions across the boundaries of the country are growing. If country is militarily strong it is easy to maintain good political relations. Strong financial position of the government will increase military spending so that we have military strong political economy. All economies will have a strong tendency to resolve political difference through dialogue since it is in the interest of every nation.

Good financial position of the government means fiscal prudence. It increases the financial standing of the nation internationally. More capital can be raised globally at lower interest. Means lower cost of to business which will increase profitability of business. Stable economy attracts foreign investment which will bring prosperity to nation.

Better society with good financial position of the government will further provide boost to business. Business society and government are interdependent and good performance by one provides impetus to other to do better. This is cyclical in nature and can make entire economy strong and will bring prosperity to nation and to the entire world at large.

Finance is life blood of every industry. However we should keep in mind that finance is at the core prosperity. Its role is vital in the economic development of every country. Money acts as a lubricant which accelerates wheels of all the three sectors of the economy. In the process of making finance available to business banks are playing an important role as they have ability to create credit. Financial facilities control the speed of new investment in the country. Financial facilities are made available to business financial system. Financial system or

financial market is acting as the agent of socio economic development of the country.

Industry requires short term and long-term finance. Finance can be raised thorough equity and borrowing. Borrowing can be for short term and long term. For better financial performance, composition of short- and long-term finance and equity and debt is important. Ratio analysis is one of the important financial analysis tools in the decision-making process of deciding this composition. Ratio is a Latin word which means need to think. Ratio is a quotient of one value divided by another value. It represents arithmetical relationship between two numbers. Ratio identifies significant accounting data. It shows financial picture of an organization. It is tool which management can use for analyzing business situation and decision making. Some ratios are useful for marketing managers, purchase managers and financial managers. However ratios are to use carefully for decision making because of several limitations such as reliability of data, they are calculated with past data and the current situation is unique or not like past. It is used to interpret financial statement and historical performance and current financial condition of the industry. Study of ratios over a period can show trends of industry and enable researchers to make comparison between two industries.

Ratios are of several types. Let us see these different types of ratios in very brief.

**A. Liquidity ratio:**

Liquidity ratio tells ability of a company to pay short term obligations of the company. This ratio is helpful to study the solvency of the firm. There are several types of liquidity ratios.

They are as follows.

A.1) Current ratio

A.2) Acid test/ quick ratio

A.3) Net working capital ratio

A.4) Super quick ratio

A.5) Turnover ratio

A.6) Defensive interval ratio

A.7) Cash flow from operation ratio

Let us understand each ratio in brief.

A.1: Current Ratio:

It is computed by dividing total current assets by total current liability. Current assets can be converted into cash in short time. It represents capacity of the firm to pay current liability. Higher is the current ratio is good for good solvency of a business.

A.2) Acid Test/ Quick ratio:

The acid test ratio overcomes the limitation of current ratio. It is a ratio of quick asset to current liability. It is a better measure of liquidity of the company. It represents immediate availability of liquid assets. Quick asset is nothing but assets which can be converted into cash

immediately without fall in its value. It is very good measure of ability firms to pay short term liability. It is considered as a measure to judge liquidity position and hence it is called as acid test ratio and is better than current ratio. 1:1 is considered to be optimum.

A.3) Net working capital ratio:

It represents liquidity calculated by subtracting current liabilities from the current asset. Current asset here refers to all those assets which can be converted onto cash without diminution in the value of short period. Current liabilities are all those liabilities which need to be paid in less than one year period.

A.4) Super quick ratio:

There is also super quick cash ratio. It is ratio of super quick asset by the current liability. Super quick current assets are cash and securities which can be sold very easily. It is still a better ratio.

A.5) Turnover ratio:

It measures how quickly current assets are converted into cash. There are three turnover ratios:

A.5.a) Inventory turnover ratio

A.5.b) Debtor turnover ratio

A.5.c) Creditors turnover ratio

A.5.a) Inventory turnover ratio:

It is a ratio of cost of goods sold to inventory. Cost of goods sold is arrived by deducting gross profit from sales. Average Inventory is calculated by taking the average of opening stock and closing inventory. It tells how fast goods are sold. Higher the ratio, higher is the liquidity of the company.

A.5.b) Debtor turnover ratio:

It is calculated by dividing net credit sales by average debtors. The ratio tells us how fast receivables are collected. High ratio shows less time gap between credit sales and cash collection. Low ratio is not good for a business.

A.5.c) Creditors turnover ratio:

It is a ratio of net credit purchases to average creditors. A lower ratio shows liberal credit granted by the supplier where as higher ratio tells that accounts are to be settled faster.

A.6) Defensive interval ratio:

It is calculated by dividing quick assets by projected daily cash requirement. Projected daily cash requirement is arrived at by taking into consideration past expenditures made by the company. The Defensive interval ratio measures the time period within which company can operate with the current liquid assets of the company.

A.7) Cash flow from operation ratio:

It is calculated by dividing cash flow from operation by current liability.

Short term solvency of the firm is judged by the above current liquidity ratio. Liquidity ratios are important from creditor's perspective therefore higher the liquidity ratio better is the economic standing of the firm according to creditors. However from the company's point of view, higher acid test ratio means unnecessary accumulation of funds in the company's cash box which can adversely hamper the profitability of the company.

**B. Capital Structure Ratio:**

It is another type of ratio. Long-term creditors or lenders evaluate financial standing of the company on the basis of capital structure ratio. It tells ability of the company to pay long term debt along with interest on it. It measures long term solvency of the company. There are two approaches to capital structure.

The first approach considers the ratio of borrowed funds and owner's capital. They are of following are the types.

B.1) Debt equity ratio

B.2) Debt asset ratio

The second type of capital structure ratio is popularly called coverage ratio. It is of the following types.

Types of Coverage Ratios:

1) Inter coverage ratio

2) Dividend coverage ratio

3) Total fixed charges coverage ratio

4) Total cash flow coverage ratio

5) Debt service coverage ratio.

B.1) Debt equity ratio:

It measures the ratio of long term total debt to shareholders equity. There are many variations of debt equity ratio. In one approach, it is expressed as a ratio of long term debt to shareholders equity. Another approach is total debt / shareholders equity. The difference in both is in respect of the treatment of current liabilities. Higher debt equity ratio means owners are putting lesser money in their business which is dangerous from creditor's perspective. If the business doesn't do well, financers may lose their money. From companies perspective higher ratio does not provide flexibility to promoter in operation of a business. Creditor may object in using the funds of the business. Lower debt equity means no Burdon of debt on the promoter of the company. Both low and high ratios have advantages and disadvantages. Hence there is nothing like desirable ratio as such. Based on business environment business will have to strike a balance in both. General norm is 2:1.

B.2) Debt asset ratio:

It is defined as total amount of companies liability divided by total amount of company's assets.

Coverage Ratios:

1) Inter coverage ratio:

It represents ability of the company to pay interest.

2) Dividend coverage ratio:

It represents ability of the company to pay dividend on preference shares which is a contractual payment.

3) Total fixed charges coverage ratio:

It represents ability of the company to meet all fixed payment obligations.

4) Total cash flow coverage ratio:

It shows ability of the company to pay outside liabilities. Higher is the ratio higher is the ability of the company to pay.

5) Debt service coverage ratio:

It measures the ability of the company to make payment on the scheduled date over the life of the debt. Higher ratio is better for the company.

**C: Profitability ratios:**

Management and promoters of the company are very much interested in these ratios as they represent economic or financial standing of a company. Profitability ratios shows outcome of business operations. It also reflect business performance. This ratio shows effectiveness and efficiency of a company. Profitability of a company can be better understood through profitability ratios. These ratios answer several questions which promoters or management of a company seek such as is profit earn by the company is adequate? Can company will be in a position to give adequate dividend to shareholders? And many more such questions need to be answer.

Following are the types of profitability ratio:

A: Related to sales.

They are of the following types.

A.1: Profit margin:

It shows profit earn by a company on each rupee sales. They are of two types a) profit margin and b) expenses ratio.

Profit margin ratios are as follows.

A.2: Gross profit margin:

It is arrived at by dividing gross profit by sales. It represents margin left after meeting manufacturing cost. High gross profit margin is good for the company and vice versa. If gross profit margin is reasonably good company can cover operating expenses and can also provide reasonably good return to company.

A.3: Net profit margin:

It is ratio of earnings before interest and taxes by net sales. It indicates ability of a company to operate business to recover cost including interest and taxes and keeps some money to the owner. A high net profit margin is good for the company.

A.4: Expenses ratio:

It is arrived at by dividing expenses by sale. Several expenses ratios are calculate based on the expense under consideration. Such expenses can be operating expenses, administrative expenses etc. These ratios are important to understand profitability of a company. Ratios are compared over a period of time for the same company or are used for inter company comparison. Low expenses ratios mean better efficiency.

B: Profitability related to investment

B.1: Return on investment:

It measures overall performance of the management. It tells how much profit company can generate.

B.2: Return on assets:

This profitability ratio measures the relationship between net profit and companies assets.

B.3: Return on capital employed:

It is another type of return on investment. In this case the profit is related to total capital employed.

B.4: Returns on shareholders' equity:

It incorporates profit as well as interest to be paid to preference shareholders.

B.5 Earnings per share:

It is a ratio of net profit available to shareholders (Equity) to number of ordinary shares outstanding. In other words it is profit per share. This ratio is widely used for analysing performance of the company. It is also used to make a comparison between share earnings of two companies.

B.6 Cash earnings per share:

It is calculated by dividing (net profit for equity holders + depreciation + amortisation + non cash expenses) by number of equity shares outstanding.

B.7 Price to book value:

It is a ratio of current market price of the share and book value of the share. It is an important ratio to predict future returns on share.

B.8 Dividend per share:

It tells how much money/return is actually received by shareholders of the company. It is not a reliable measure of profitability.

B.9 Dividend payout ratio:

It is ratio of earnings belonging to shareholders and actual dividend paid to shareholders.

B.10 Earning and dividend yield:

It is defined as ratio of earning per share to market value per ordinary share.

B.11 Price earnings ratio:

It shows how much money investors are willing to pay for each rupee of earning. Higher is the ratio higher is the confidence of investors.

C: Activity ratio:

It reflects how fast assets are converted into sells or cash. Higher is the ratio higher is the utilization of assets. It represents how effectively assets are used by the company.

C.1 Inventory turnover ratio:

It tells in how much time inventory is replaced in the financial year. There are two approaches for calculating this ratio. In first approach cost of the goods sold is considered along with average inventory where as in second approach sells and closing inventory is considered. First approach is considered to be better. This ratio tells us how fast inventory is monetised. If inventory monetisation is faster, Management is competent. For the purpose of analysis this ratio is seen over a period for the same company or it can be used for inter company comparison.

C.2 Receivables turnover ratio:

It tells how fast company is able to collect their money to be received. It shows liquidity of the debtors. This ratio is examined in two different ways. In the first way debtors receivable turnover is examined where as in second way average collection period is taken into consideration.

C.3 Asset turnover ratio:

It shows ability of the company to use their asset to generate sales. There are various asset turnover ratios. These ratios measure efficiency of the company. Higher the value of the ratio, higher is company's efficiency.

**D: Growth ratios:**

This ratio tells at what rate company is expected to grow. Growth of the company depends upon several factors such as net profit margin, ability of the company to raise money from its business. There are two growth ratios

D.1: Internal growth rate:

It represents highest rate at which the firm can grow without taking outside financing. It is calculated dividing (ROA*B) / (1- (ROA*B))

D.2: Sustainable growth rate: These ratios measure the rate at which firm Grows. The growth of the firm is taking place through internal resources.

For the purpose of research four ratios are considered. They are as follows.

1) Liquidity:

Liquidity is prerequisite for the survival of the business.

In liquidity current ratio is considered which current asset upon current liability. There is no hard and fast rule about appropriate current ratio. It differs from industry to industry. However, 2:1 is considered to be optimum. Short term creditors are looking to this ratio at the time of lending short term funds to business.

2) Leverage or capital structure ratio:

It represents margin of safety to long term creditors. Long term lenders would judge the soundness of the business in terms of its ability to pay the interest as well as principal on due dates. D/E Ratio = Long term Debt/ Share holders' equity.

3) Profitability Ratio:

All state holders are interested in this ratio. If adequate profit is not earned on sales, there will be difficulties in meeting operating expenses and no returns will be available to owners. In this ratio gross profit margin is considered. Gross profit margin = Gross profit/ Sales multiplied by 100.

4) Growth Ratios:

These ratios measure the rate at which firm grow.

Sustainable growth rate (SGR): It is the maximum rate at which the firm can grow by using internal sources as well as additional external debt without increasing its financial leverage (Debt equity ratio). ROE is return on equity and b is retention ratio which means profit which is not paid to share holders and is retained with the company.

$$SGR = REO*b / ( 1- ROE*b)$$

The purpose of the study is to check whether the SGR and profitability is influenced by debt equity and current ratios at the same time SGR is influenced by profitability debt equity and current ratios,

When industry perform well economy will also perform well and vice versa therefore it is also interesting to study impact of economic

growth represented through GDP growth on SGR and profitability. The economic growth is influenced by several macro economic variables. Some variables are significant in influencing GDP growth. Therefore, it is imperative to study whether these variables are also influencing profitability and SGR of industry.

Industrial sector will continue to play important role in the growth momentum as it purchases inputs from agriculture by purchasing its finished product as input and enables service sector to grow. In short you required strong industrial sector to keep growth momentum of the economy on. Therefore, the present government adopted make in India programme since it came to power.

Let us see the composition of India's national income for three periods, 1950-51, 1991-92 and 2016-17.

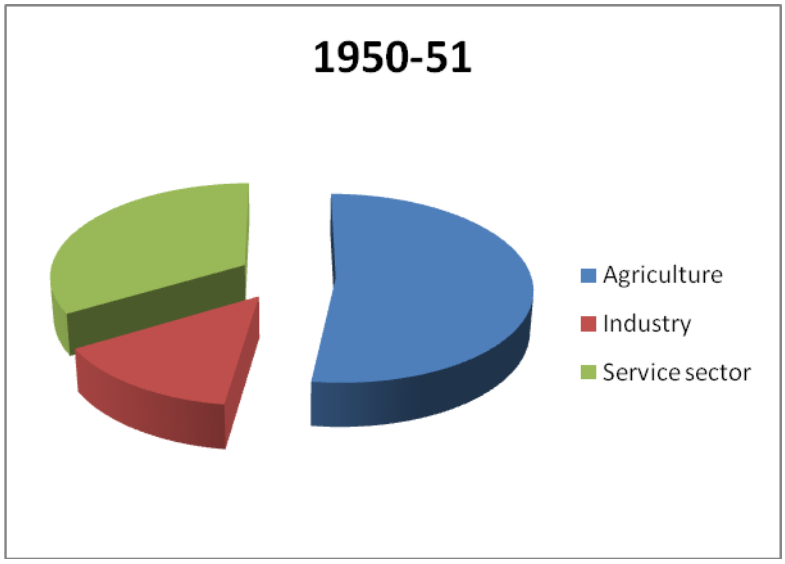
Services sector is the largest sector of India. Gross Value Added (GVA) at current prices for Services sector is estimated at 73.79 lakh crore INR in 2016-17. Services sector accounts for 53.66% of total India's GVA of 137.51 lakh crore Indian rupees.

Industrial sector contributes 29.02% with GVA of Rs. 39.90 lakh crore. While, Primary Sector of the economy i.e. Agriculture and allied sector contributes 17.32% and its GVA is around Rs. 23.82 lakh crore at the current prices in the FY 2016-17.

Let's have a look on the all three sectors of the Indian economy in the FY 1950-51, 1991-92 and 2016-17 at the current price.

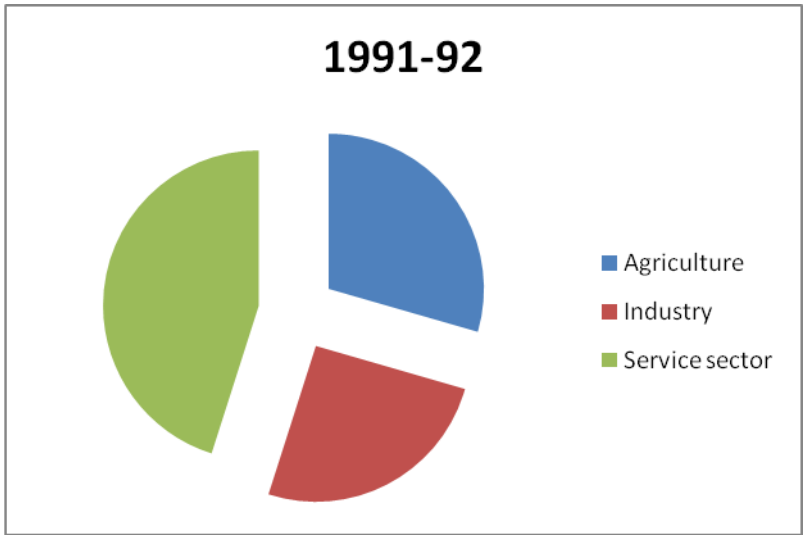
| Year | Agriculture | Industry | Service sector |
|---|---|---|---|
| 1950-51 | 51.81% | 14.16% | 33.25% |
| 1991-92 | 29.39% | 25.4% | 44.96% |
| 2016-17 | 17.32% | 29.02% | 53.66% |

Source:http://statisticstimes.com/economy/sectorwise-gdp-contribution-of-india.php




Sect oral contribution of GDP

Source:http://statisticstimes.com/economy/sectorwise-gdp-contribution-of-india.php

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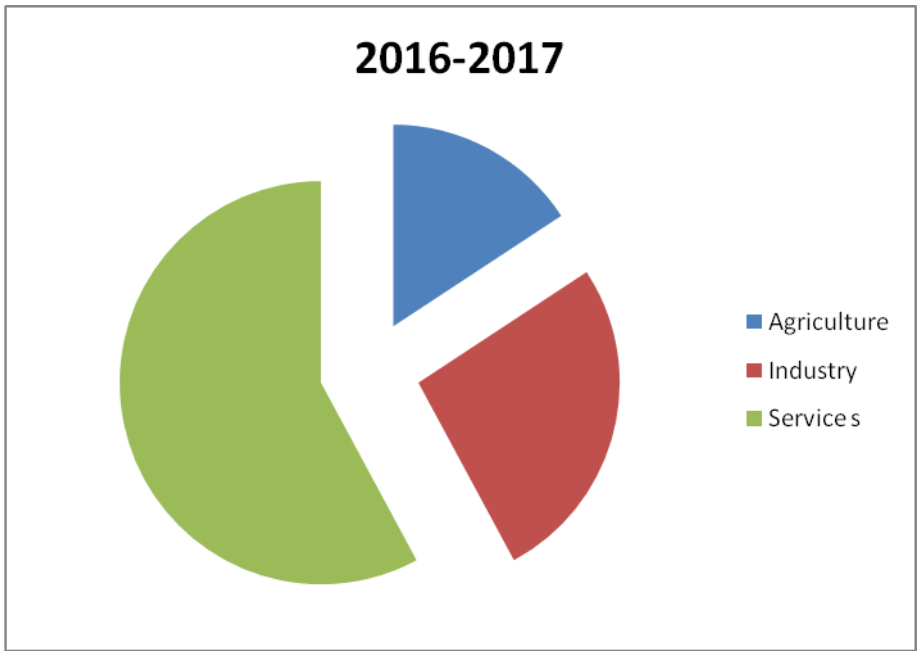



Sect oral contribution of GDP

Source:http://statisticstimes.com/economy/sectorwise-gdp-contribution-of-india.php

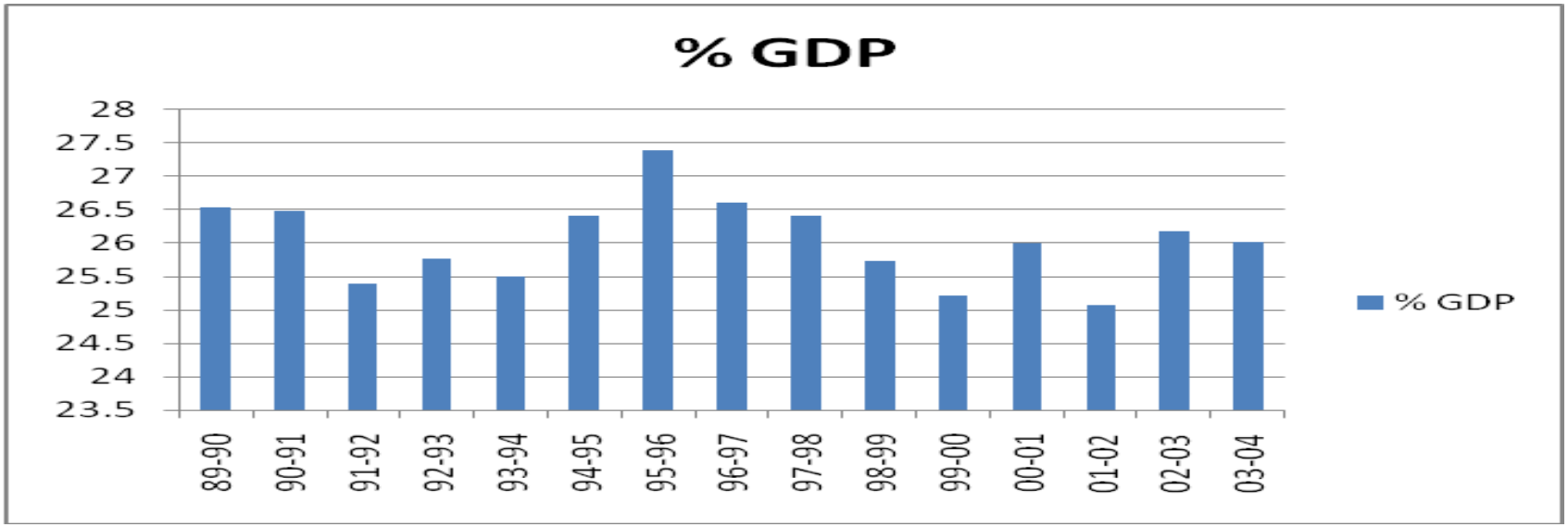
The above table shows that the service sector is the backbone of the Indian economy; contributing the most in Indian GDP followed by the industrial sector. The contribution of Industrial sector was growing continuously from 1950-51 to 1989-90. Then it keeps on fluctuating. Its contribution over a period is as under.

## The contribution of Industrial sector to GDP

| Year | % GDP |
|---|---|
| 89-90 | 26.53 |
| 90-91 | 26.49 |
| 91-92 | 25.40 |
| 92-93 | 25.77 |
| 93-94 | 25.50 |
| 94-95 | 26.41 |
| 95-96 | 27.40 |
| 96-97 | 26.60 |
| 97-98 | 26.41 |
| 98-99 | 25.74 |

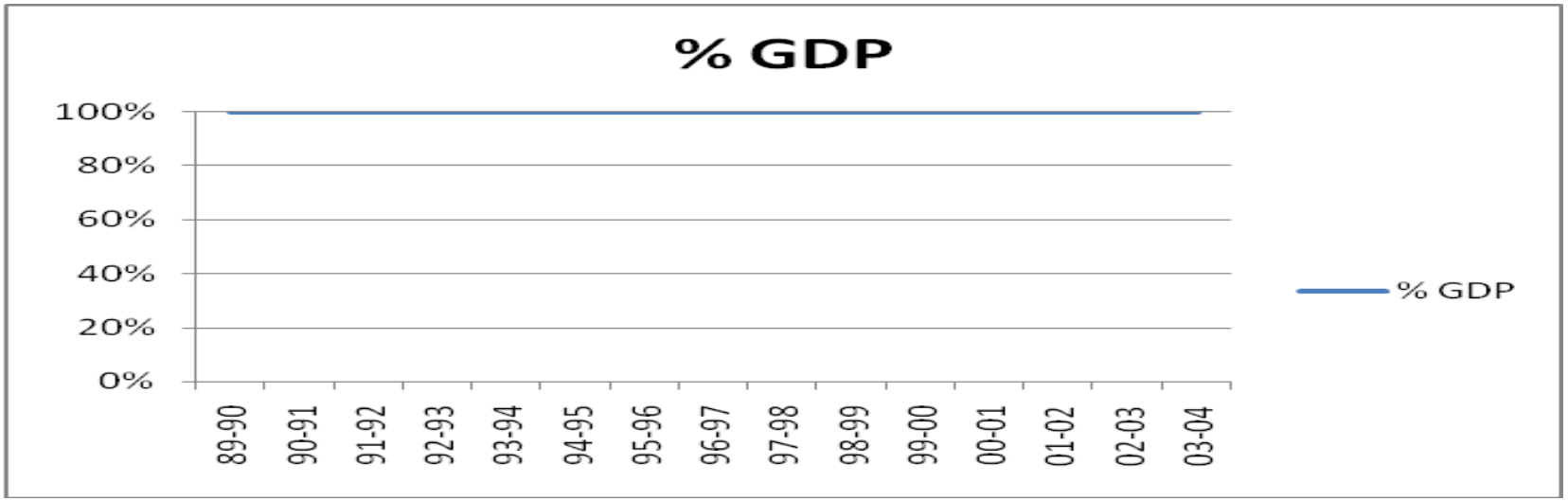
| | |
|---|---|
| 99-00 | 25.22 |
| 00-01 | 26.00 |
| 01-02 | 25.08 |
| 02-03 | 26.17 |
| 03-04 | 26.01 |

Source: http://statisticstimes.com/economy/sectorwise-gdp-contribution-of-india.php




Contribution of Industrial sector to GDP for the year 1989 to 2003.

Source: http://statisticstimes.com/economy/sectorwise-gdp-contribution-of-india.php




Contribution of Industrial sector to GDP for the year 1989 to 2003.

Source: http://statisticstimes.com/economy/sectorwise-gdp-contribution-of-india.php

It went up to 29.03 in the year 2007-08 and was 29.02 in the year 2016-17.Let us importance of each sector in Indian economy and problems faced by each sector in brief.

## Service Sector:

Major economies in the world today are service sector oriented. Service sector includes several industries such as Insurance, Tourism, Banking, Retail, Education, Social Service, Hotel, Railways, Storage, Communication, Real estate, Public administration etc. The list of industry in this sector is very big. It is also called as Tertiary sector. British rule which lasted for about 190 years made Indian economy poor and industrially backward through deliberate policies adopted by them. During that period they did deindustrialization of India. India's contribution in global trade was substantial before the beginning of British period. In fact Britisher's came for the purpose of trade only. India was producing several world famous commodities such as Muslin, Calicoes etc. In short rebuilding economy to its earlier glory was a challenge in front of the government of that time. After India's independence in the year 1947, systematic development of Indian economy started. When economy is backward or in the initial stages of its development if you see the composition of national income not only of India but of any economy in the world, in the initial period of development contribution of service sector is less which was also true for India. It was 33% when the process of economic planning or development through five years planning was started in the year 1950-51. At that time contribution of agriculture was highest.

The Services sector plays an important role in proving employment to unemployed people. It is second in terms of GDP contribution and

second in terms of providing employment. In the year 2004-2005 24.62%[1] of the labour force was employed in service sector. This percentage increased to 33%[2] in the year 15-16 with 115 million people working in service sector. It means it is second sector as for as employment generation is concerned. “More employment is generated in finance insurance and business services”.[1]

The real growth and development of service sector started in post liberalization period. Government of India took several policy measures which were responsible for this growth. Several policy measures related to infrastructure development were formed by the government. Policy related to road, railways, rail road co operation, shipping and port development, civil aviation, telecom etc were not only made and passed by the parliament but were effectively implanted. Most of the above sectors were open to private players by making a dynamic shift in the industrial policy. Private participation supported by foreign investment boosted the pace of development and brought competition. Because of competition scarce resources were used properly at the same time better allocation of resources took place. New policy not only brought development in the economy and service sector but also enhance productivity of other sector of the economy. Today we have several international airports, ports with huge capacity and national highway net work. Today we have a capacity to construct 30 Kms length roads per day. There is a plane available between Mumbai and New Delhi every 15 minutes of one or other company. Continuous efforts are not only made to expand the sector but also brig efficiency.

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[1] https://www.jagranjosh.com/general-knowledge/composition-contribution-of-service-sector-in-india-1446187472-1

2Source: https://www.ima-india.com/templates/imaindia/report_pdf/The%20India%20Employment%20Report.pdf

Telecommunication revolution was brought during Late Prime minister Rajiv Gandhi's era. He formulated new telecom policy which brought huge change in this sector. Tele communication supported by internet change the dynamics of Indian economy. It helped to percolate the development to the bottom of the pyramid.

Prime Minister Rajiv Gandhi was also keen on bring computerisation. Due to fear of unemployment the policy was opposed by workers union. However his government and subsequent government were successful in implementing policy due to which progress got accelerated. Y2K problem created opportunity for the growth of IT sector. Today India is one of the major economies in information technology related industry. Computerization can be very effective to control rampant corruption by reducing human interface in the several activities such as giving subsidies or any kind of cash help during the natural calamities such as present Covid 19 or recent cyclone. It is also importance contributor to tax revenue and foreign exchange earnings. IT sector created lots of employment opportunity to highly educated youth of our economy.

To conclude service sector is one of the growth driver of Indian economy. It is major contributor of national income and second largest employment generator.

## Agricultural Sector:

Agriculture is important in India because its contribution to national income, source of livelihood to large number of peoples, source of food

supply commercial importance, providing market for industrial goods, and its role in industrial development.

India is even today is agricultural economy as it provides employment to large number of labour. In year 2004-2005, 56.67%[1] of labour force was employed in agriculture. In spite of development of entire economy being continued and contribution of agriculture to national income declined, 46%[2] of labour force is still employed in agriculture. The absolute number of people employed is 211[2] millions. On the eve of independence India was not sufficient in the production of food grain. We were heavily depending on import of food grain. However continuous agriculture development, made India self sufficient in agriculture. Agriculture is also playing important role in foreign trade. Several agricultural commodities such as tea, sugar, oil seeds, tobacco, spices, cotton textile, Jute, coffee, vanaspati oil etc were the main items of agriculture export. India was also exporting manufacture goods with agricultural content. Both taken together were 70% of total India's export in the year 1950. As export of industrial goods and services started the percentage of export coming from agriculture started declining. It was 12.3% in the year 2011-2012.

It is also important as it supply raw material to industry and also contributes to capital formation. There are several agriculture related industry such as Jute, Textile, Food grain milling, Fruit and vegetable processing, sugar, Vegetable oil, Rubber, paper etc.

Green revolution, irrigations facilities provided during each five year plan by construction of small, medium, large dams, high yielding varieties of seed, use of chemical fertilizers, corporate farming, commercial crop production, warehousing, transportation, minimum

support pricing, easy and timely credit, market availability, modern methods of cultivations etc. are some of the reasons for progress or development agriculture.

However agriculture is also suffering because of several reasons. One of the important problems of present agriculture is farmer's distress leading to farmer's suicide. Farming has not financially viable due to high cost of inputs and climatic conditions. If climate is good or bad, farmers suffer. When climate is goods, production is more due to which farmers are not getting good price and he is suffering.

When monsoon or climate is not favourable production is less and so farmers are suffering. Productivity of agriculture is low in comparison to other developed country.

| | | | Quintals per hector | |
|---|---|---|---|---|
| Crop | Potential yield of India | Actual yield of India | World highest yield | Name of the country with highest yield |
| Rice | 40 to 58 | 32.6 | 94.2 | Egypt |
| Wheat | 60-68 | 28.4 | 76.7 | UK |
| Maize | 60-80 | 19.6 | 97.4 | Canada |
| Sugar cane | | 701 | 1254 | Peru |
| Groundnut | 30-30 | 14.9 | 37.1 | USA |

Source: Agricultural statistics at a glance 2012

The above table shows that agricultural productivity is miserably low. By taking several steps policy and otherwise productivity can be raised which will resolve the problems of this prominent sector which will reduce pressure on the other sectors of the economy.

The reasons for low productivity are as follows.

1) Decline in investment:

Public and private investment in agriculture is a matter of concern. Public investment as percentage of total investment is falling post 1990. Private investment is growing however it is confined to north India that too few selected areas such as Punjab, Haryana, West U.P. and almost completely absent in other part of India. Without public and private investment productivity cannot increase.

2) Limited use of Agricultural Technology:

Agriculture needs a technology which will integrate production and post harvest integration. Green revolution could only confine to selected state such as Punjab, Haryana and restricted to selected crop such as Wheat, Bajra, and Rice. Limited technology was confined to use of HYV seeds, chemical fertilizers etc. Use of machinery was possible only far large land holding. Majority of farmers are small and marginal farmers with less than five hectors of land.

3) Non availability of timely credit at reasonable interest rate:

According to National commission on farmers "Credit reform is the primary path way to enhance small farmer's productivity and ending farmer's suicide". Farmers are not getting credit at the beginning of cultivation. They borrow money from money lenders at exorbitant interest rate. Even bank lending is also at higher interest rate in comparison to international rate of interest charge to farmers. Most of the farmers are not covered by crop insurance.

4) Population pressure:

We failed to check the rapid growth of population especially in rural area. Non agricultural employment was also not created. There was already disguised unemployment in agriculture. It increased further.

5) Uneconomic/Small land holding:

Land reform was on the priority of the government. Land reform in the form of tenancy legislation and ceiling on land holding, protection to tenant was to be implemented up to 1970. Government fail to implement land reform and hence redistribution of land in favour of

marginal farmers did not take place. Government shifted her focus on technology change but that also did not take place.

6) Uncertain monsoon and inadequate irrigation:

Irrigation is still a matter of concern. Hence farmers are heavily depending on monsoon for cultivation. Most of the farming is dry land farming. It is at the vagaries of nature.

7) Subsistence nature of agriculture:

Subsistence farming means cultivation for family consumption. Large numbers of farmers are subsistence farmers and hence they are not producing marketable surplus. Since there is no source of other income to them, they are suffering from poverty.

8) Decline in soil fertility:

Since farmers concentrated on cash crop, such as sugarcane degradation of soil took place. Deforestation is also responsible for soil erosion and decay.

9) Lack of support service: Support services such as Market, cold storage, market information about prices of agricultural products, logistic support are not available to farmers. Hence farmers have no choice than to sale their produce at very low price. The middle men make money and farmer suffer.

10) Unbalance agricultural development:

Few progressive regions are producing large marketable surplus. Hence production and food supply is rising but the benefit is received by few regions making agricultural growth unbalance.

11) Inadequate irrigation facility: Major input to agriculture is water. In the first fifty years of independence 231,400 crores were spend on irrigation. Irrigated land increase from 23 million hector to 87 million hector in the year 2010. Still 50%land is yet to be brought under irrigation. Irrigation can increased the productivity of agriculture,

## Industrial Sector:

Pndit Jawarlal Nrharu Prime Minister of India said, “It is only when India has acquired the ability to design, fabricate and erect its own plant without foreign assistance that it will have become a truly advance and industrialised country”. The statement of our first prime minister is self explanatory to narrate the importance of industries in the national development.

Britishers ruined industries of India. On the eve of independence we were industrially backward. Contribution of industry to national income was lowest and it was 14.16%. Industrializing economy was a big challenge in front of the government.

Industrial development without proper policy is not possible. Government of India organised industrial conference in December 1948 to discuss path of industrialization. It was unfolded through first industrial policy of 1948. Subsequently several policies were made.

The industrial policy of 1956 was made in the back ground of adoption of Indian constitution. It was consider being the back bone of industrial policies of India as the basic structure of the policies thereafter was kept same till 1991. Another policy was made in 1980. Revolutionary policy was made in the year 1991. Whether it was made by choice or made because of compulsion can be a matter of contention. Everybody will accept that it bought drastic changes in India's industrial stature in the world. World and business houses in the world small and big now cannot overlook India or cannot take India for granted.

All Industrial policies recognised the importance of small industry and hence these industries still play an importance role in the industrial and economic development of India. These industries are important for job creation, national income growth, export etc. Small industries can provide job to unskilled and less educated people which was the need of the hour in the initial post independence period. Similarly small industries can be started with less capital or hardly any capital was required to start them. They do not required modern technology, can be started in any remote area and are using local raw materials. These were constraints in the initial post independence period for bringing rapid growth. Small industries can help to decentralised economy, prevent migration and avoid congestion. These are present problems of India and therefore small scale industries are even relevant today.

Immediately after independence since 1950 planning process started. Second five year plan was made in 1955-1956 which was devoted for industrial development. India's industrial progress was systematically made through five years planning. It can be classified in different phases. Phase I is from 1951 to 1965, phase II is from1965 to 1980, phase III is from 1980 to 1990 and phase IV covers period from 1991 onwards. In every five years plane money was allocated for industrial

development. Public sector made lot of progress and contributed substantially for growth, employment generation. Big jump in the progress was seen after the new industrial policy of 1991. The process of globalization also started in 1991. This is also one of the reasons for selecting the period of research from 1991. It is also stated as post liberalization period.

Positive relationship can be seen between per capita income of a country and share of industrial output. Industrial development is crucial for several reasons. Following are few reasons.

1) Productivity of labour in manufacturing industry is highest. It will help for raising national income faster.

2) Industrialization can help to reduce the pressure of population on agriculture.

3) Industrialization accelerates the process of development of other sectors of the economy.

4) Contribution to national income:

As the process of industrialization started, its contribution to national income went on increasing. In the year 2016-20017 it was 29.02. There is still scope to increase it. Make in India if successfully implemented can increase it further. Industries also increase the purchasing power of the people and can increase demand for goods and services and promote development of entire economy. More income in the hands of the people also will increase saving in the economy which will increase investment in the economy. It will accelerate the process of industrialization and further generate income and national income.

5) No infrastructure without industry:

For infrastructural development cement, steel, electricity, petroleum etc are very much essential. Policy of the government was to develop these industries. Second five tears plan was devoted for the development of such industries.

6) Capital goods Industry:

For economic progress capital goods industry is pre requisite. Second five year plan gave due importance to capital goods industries. Steel, cement, fertilizers, pharmaceuticals, chemical industries were started by government of India. Industrial development can create more demand for capital industries products.

7) Industry helps agricultural growth:

Development of all sectors is interrelated. Industry provides fertilizers, chemicals, machinery such as tractors, harvesting equipments etc to agricultural sector. Industries can also help agriculture by developing agro based industries. Agro industries will create more demand for agriculture goods and motivates farmers to produce more agricultural output. More oil seeds, groundnuts, cotton etc can be produced. It will bring agro development.

8) Foreign exchange earnings:

Foreign exchange earnings for India cannot be adequate from export earning of services and agriculture. Manufacturing industry has lot of potential for export earnings. Manufacturing industry, gems and

Jewellery, Readymade garments, Engineering goods, Chemicals and applied products are earning good amount of foreign exchange to India. Industries can also attract foreign exchange by way of FDI. Many prominent airports national and international like Mumbai, Delhi, and Bangalore are constructed with the help of FDI. As per new industrial policy of 1991, FDI to the extent of even 100 is allowed in automatic route in selected area. If more foreign exchange is coming by way of FDI, FII and export earning then the unfavourable balance of payment problem can be solved.

9) Balance Development:

Industry has huge capacity to convert rural area into urban area. If one company is started in backward area, it will convert that place to town. Other ancillary industries can also start in that locality. Industrialization of backward area will take place. Industrial development can maintain the balance in the development of all three sectors of the economy.'

10) Nations Security:

Industries are essential for national defence. Industry produces military equipments such as arms, ammunition, aircrafts etc. Military equipments are crucial for protecting boundaries of every nation.

11) Creation of employment:

Industries create employment opportunity to all category of working population. So the problem of employment and underemployment can be solved. It will also reduce the problem of under employment and disguised unemployment in agriculture. Big industries can create

environment for developing cottage and village industry and can create job opportunity in that field also.

11) Rapid growth of economy:

Industry provides base for rapid economic development of the country as productivity is higher in industry in comparison of all other sector.

12) More tax revenue to government:

More industries mean more tax revenue to government by way of corporate tax, excise, GST and all other forms of tax. Number of taxes in India is less because off successful implementation of GST but the tax revenue amount is growing only.

13) Exploitation and optimum use of scarce natural resources of the economy:

Several natural resources of the economy such as minerals, coal, and iron ore cannot be use without the establishment of steel, power industries. It means industrialization will is prerequisite for the proper and effective use of scarce resources. Ideal saving in the bank cannot be converted into investment without industrialization.

14) Economic stability:

If economy is heavily depending on one sector cannot bring stability to economy. Dependence of economy on vagaries of the nature will fall with industrialization. Industries can play the balancing act.

15) Atmanirbhar Bharat/ Attainment of self sufficiency:

Industry has huge potential to produce which ever goods we require. When Britisher left country India was hardly able to produce anything. If require we have ability to produce fighter jet. Today it not possible to pressurise India for action which government in power wants to take to protect our interest. We could do nuclear test because of self sufficiency. Today India is capable to take decision independently having international repercussion. Surgical strike can be an example. Many such examples can be given.

Contribution of industries is recognised by everybody. However industries are also facing several problems. Let us see some major problems faced by industries.

## Problems faced by the industries are as under:

1) Exposure to external competition:

Annual growth rate of major sector of industry:

| *Year (Weight)* | *Mining (11.76)* | *Manufacturing (77.11)* | *Electricity (11.43)* | *General (100.00)* |
|---|---|---|---|---|
| 1981-82 | 17.7 | 7.9 | 10.2 | 9.3 |
| 1982-83 | 12.4 | 1.3 | 5.7 | 3.2 |
| 1983-84 | 11.8 | 5.7 | 7.6 | 6.7 |
| 1984-85 | 8.8 | 8.0 | 12.0 | 8.6 |
| 1985-86 | 4.1 | 9.7 | 8.5 | 8.7 |
| 1986-87 | 6.2 | 9.4 | 10.3 | 9.2 |
| 1989-90 | 6.3 | 8.6 | 10.8 | 8.6 |
| 1990-91 | 4.5 | 8.9 | 7.8 | 8.3 |
| 1991-92 | 0.6 | – 0.8 | 8.5 | 0.6 |
| 1992-93 | 0.5 | 2.2 | 5.0 | 2.3 |
| 1993-94 | 3.5 | 6.1 | 7.4 | 6.0 |

Source:https://www.yourarticlelibrary.com/wp-content/uploads/2015/07/image31.png

Annual growth rate of major sector of industry:

| Year (Weight) | (10.47) | Base : 1993-94 = 100 (79.36) | (10.17) | (100.00) |
|---|---|---|---|---|
| 1994-95 | 9.8 | 9.1 | 8.5 | 9.1 |
| 1995-96 | 9.7 | 14.1 | 8.1 | 13.0 |
| 1996-97 | -1.9 | 7.3 | 4.0 | 6.1 |
| 1997-98 | 6.9 | 6.7 | 6.6 | 6.7 |
| 1998-99 | -0.8 | 4.4 | 6.5 | 4.1 |
| 999-2000 | 1.0 | 7.1 | 7.3 | 6.7 |
| 2000-01 | 2.8 | 5.3 | 4.0 | 5.0 |
| 2001-02 | 1.2 | 2.9 | 3.1 | 2.7 |
| 2002-03 | 5.8 | 6.0 | 3.2 | 5.7 |
| 2003-04 | 5.2 | 7.4 | 5.1 | 7.0 |
| 2004-05 | 4.4 | 9.2 | 5.2 | 8.4 |
| 2005-06 | 1.0 | 9.1 | 5.2 | 8.2 |
| 2006-07 | 5.4 | 12.5 | 7.2 | 11.6 |
| 2007-08 | 5.1 | 9.0 | 6.4 | 8.5 |
| 2008-09 | 2.6 | 2.8 | 2.8 | 2.4 |
| April-Dec. | | | | |
| 1996-97 | -1.0 | 9.8 | 3.8 | 8.0 |
| 2000-01 | 3.6 | 6.3 | 4.9 | 6.0 |
| 2001-02 | 0.7 | 2.6 | 2.5 | 2.5 |
| 2002-03 | 5.7 | 5.4 | 4.0 | 5.3 |
| 2004-05 | 5.1 | 9.2 | 6.4 | 8.6 |
| 2005-06 | 0.4 | 8.9 | 4.8 | 7.8 |
| 2006-07 | 3.8 | 11.5 | 7.3 | 10.6 |
| 2007-08 | 5.2 | 9.6 | 6.6 | 9.1 |
| 2008-09 | 3.2 | 3.7 | 2.7 | 3.6 |
| 09-10 (April-Nov.) | 8.4 | 8.2 | 5.8 | 7.7 |

Source:https://www.yourarticlelibrary.com/wp-content/uploads/2015/07/image31.png

The above table shows that industrial growth rate of Indian industries in different planning period. You can see that the growth rate had decline from 1990-1991 due to liberalization, Indian companies were require to compete with the global players and they could not stand in competition with them resulting into lower growth rate. Prior to 1991 Indian industries were protected from external competition as India was a close economy. Due to reduction in the import duty, foreign goods became cheaper and Indian companies find it difficulties to face price competition.

2) Slow down in investment:

Rate of capital formation in India was slower. Due to foreign exchange crises of 1989-1990 government was force to reduce fiscal deficit as per requirement of IMF. This resulted into further slow capital formation. Government was force to cut down public spending. Power production declined. Public and private investment declined.

3) Infrastructure constraints:

Due to poor infrastructure industrial growth rate was slow. Poor quality of road and road bottleneck, insufficient loading and unloading facility at port, frequent power cuts added to companies cost of production. Less profitability did not motivated investor to invest more money in the economy resulted into slow growth.

4) Difficulties in obtaining money for investment: India is not lucky with regards to capital availability. Tremendous scarcity of capital is one of the main reasons for industrial backwardness. Indian money and capital markets was not developed. It is difficult to raise money for business in such situation. Stock market scam took place. People lost confidence in the stock market. Raising money through IPO became difficult to business. Business could not expand and hence slow growth.

5) Sluggish export growth:

Export was always a concern for India due to poor quality of finished goods. Similarly Indian goods could not competition on price front with imported and foreign goods. Slowdown in the rest of the world in 1982, 1997-2001, 2007 made situation worse.

6) Anomalies in tariff:

Anomalies in tariff lead to more import of machinery, basic material, intermediate goods etc. Domestic companies were subjected to more taxes.

7) Contraction in consumer demand:

Rural purchasing power was less due slow agriculture growth and farm distress. Indian industry was facing lower demand due to lower ability of the consumer to buy goods in urban and rural areas. Growing inequality and low employment was also responsible for less demand for industrial goods.

8) Political uncertainty:

Janata Government of 1979-1989. Janta Dal Government 1989-1991. Minority Congress party Government 1991-1996. Minority B.J.P Government 1999-2004. These periods were politically not stable period. During such period tough decisions in the interest of nation cannot be taken.

9) Poor performance of Agriculture:

Due to several factors stated earlier agriculture growth was slow. Agriculture supply inputs to industries. If industry does not get regular supply of raw material industrial development is difficult.

10) Skilled and efficient manpower:

In the beginning of industrialization skilled and education man power was in short supply. Educational facilities are expanded today but employability is still a concern. Without competent and efficient manpower development of industry is difficult. Incompetent man power is likely to waste scarce resources of the economy. This cannot be afforded by developing country like India. Mobility of labour, it is a social factor also responsible for poor performance.

11) Poor performance of public sector:

Performance of PSU after 1975 started declining. Many public sector units started incurring huge losses. Losses of the public sector were compensated from the budget. Post 1990 losses of public sectors were so huge that government decided to privatised them or close them down. Several prominent public sector units like Hindustan machine tools were close down. List of such public sector units is very big. Some economist argued that profit should not be the only criteria to judge performance of the public sectors as they are required to full fill social obligation. For example railway, post cannot increase passengers fare, postal charges to compensate the growing cost of production. Reasons of poor performance of public sector are many. Some of the reasons are as follows.

a) Political interference:

They are not free to take commercial decisions without the permissions of the ministries secretary. Appointment of top executives many times was not made on merits but on the basis of political considerations. Location of plant was also a political decision.

b) Increase in the cost of project due to non completion in time:

All undergoing Metro projects are running behind the schedule. The cost of the projects will increase. The entire project will become financially unviable. Mumbai Metro is live example.

c) Over capitalization:

Many public sector projects have unfavourable input output ratios. This is the observation of study team. Examples given by the team are Heavy Engineering Corporation, HAL Nashik etc.

d) Price policy:

Price policy is not based on profit due to social consideration.

e) Over staffing:

The man power planning is very poor. They are over staff. Appointment is also made to meet political objectives. Incentive for hard work is missing. It leads to plight of efficient staff.

f) Capacity utilization:

Installed capacity in public and state enterprises is not fully utilized. Some PSU had capacity utilization of 50%. Some are able to use 75% of installed capacity. It shows capacity utilization is very low.

g) Efficient management:

Efficiency of management is low due to lack of prompt operational decision making and autonomy, inflexibility, political intervention, delegation of authority, incentive for hard work.

h) Failed to keep pace with changing environment:

Public sector failed to see future. They failed to fine tune their organisation as per changing business dynamics. They failed to make necessary changes in technology, products, quality of products. They also failed to launch new products as per market requirement.

i) Failed to compete:

Public sector companies failed to compete with private sector. Similarly companies could not withstand with foreign companies. Specially Pharmacy, chemical factories in PSU are closed today as they could not remain cost competitive and lost market to companies in China.

Several initiatives were taken by the government to improve the performance of public sector. One important initiative was BIFR. Some public sectors improve their performance for some time but large no of them were either privatised or closed down by the government.

12) Unnecessary Government control on public and private sector companies:

Undue control by bureaucracy led to corruption and red tapism. These controls became big obstacles in the smooth functioning of companies.

Inspector raj is also troubling performance of the companies of private and public sector both.

13) Gap between targets and achievement:

Every five years plan set target with respect of industry growth. However the set target was never realized by the government slowing down the pace of industrialization.

Now it is imperative to check whether the economic variables impacting GDP growth also impact the profitability of industries or variables impacting profitability of industry are industry specific.

1.2. Macro Economic Variables:

Economic growth is highly complex phenomenon. Grow and profitability of industries influences economic growth, but it is also influenced by several macro economic variables as well. These variables are as under.

a) Saving:

Saving is that part of income which is not consumed. Saving is real resources that are not consumed in the current period and hence available for the purpose of investment. People are inclined to save for future consumption, to take care of future uncertainty etc, Saving is influenced by several factures such as current, future and past income, interest, composition of population on the basis of age and several other factors. Role of financial system in generation of saving is

important. Financial system channelized savings of the people for productive purpose. When saving is used productively profit is generated. It means income or wealth is created. It will further generate saving and process will continue. According to Classical Economics, saving is a function of interest however according to Keynes Saving is a function of Income. Savings leads to capital formation. Capital is vital for economic growth. In all modern growth models saving are principal parameter and determinant of economic growth. Saving is measured as percentage of GDP. "During 1980s and mid 90s China Republic of Korea and some South East Asian countries, notably Malaysia, Thailand, and Indonesia had gross investment as high as 30 percent or more. This enabled them to register rapid economic growth as result of which there was considerable expansion in their business activity". [2]

The gross saving and net saving for Indian economy from 1967 till 2016 is as follows.

Economic theory suggests that there is a positive relationship between saving and economic growth. All Asian countries have high rate of saving. These are saving driven economies. India's saving rate as percentage of GDP went on increasing as economic growth progressed. Rakesh Mohan Dy. Governor of RBI in his article"Growth record of Indian economy 1950-2008 a story of sustain saving and investment" confirmed the economic theory with respect to India. In his article he writes "In analysing the growth record of Indian economy, various scholarly attempts has been made to identify turning point from traditional low growth to high growth since 1980s. The secular uptrend in domestic growth is clearly associated with consistent trend of

[2] 1 Economic Environment of Business by S.K.Misra, V.K. Puri, Dedition 2010 pp21

increasing saving and investment over the decade. Gross domestic saving has been increased continuously from 9.6%in 1950 to 35% by 2011-2012. A significant feature of this trend in saving and investment rate in India is that Indian economic growth has been financed by domestic saving". It clearly shows the importance of saving in Indian economy.

The matter of concern is that the rate of saving started declining from 2012-2013. Reasons are not yet known. One of the reasons could be adaptation of western life style and growing consumerism.

## The gross saving and net saving for Indian economy from 1967 till 2016

| Year | Rate of gross domestic saving | Rate of net domestic saving |
|---|---|---|
| 1967-68 | 12.1 | 7.6 |
| 1968-69 | 12.0 | 7.5 |
| 1969-70 | 14.1 | 9.4 |
| 1970-71 | 14.3 | 9.0 |
| 1971-72 | 15.1 | 9.6 |
| 1972-73 | 14.1 | 8.6 |
| 1973-74 | 16.8 | 11.4 |

| | | |
|---|---|---|
| 1974-75 | 16.7 | 10.8 |
| 1975-76 | 17.4 | 10.9 |
| 1976-77 | 18.8 | 12.4 |
| 1977-78 | 19.2 | 13.2 |
| 1978-79 | 21.0 | 15.0 |
| 1979-80 | 19.9 | 13.1 |
| 1980-81 | 17.8 | 11.0 |
| 1981-82 | 17.5 | 10.4 |
| 1982-83 | 17.8 | 10.4 |
| 1983-84 | 17.1 | 10.1 |
| 1984-85 | 17.8 | 10.5 |
| 1985-86 | 18.4 | 10.7 |
| 1986-87 | 18.1 | 10.3 |
| 1987-88 | 20.0 | 12.1 |
| 1988-89 | 20.0 | 12.2 |
| 1989-90 | 21.3 | 13.5 |
| 1990-91 | 22.9 | 15.3 |
| 1991-92 | 21.3 | 13.0 |

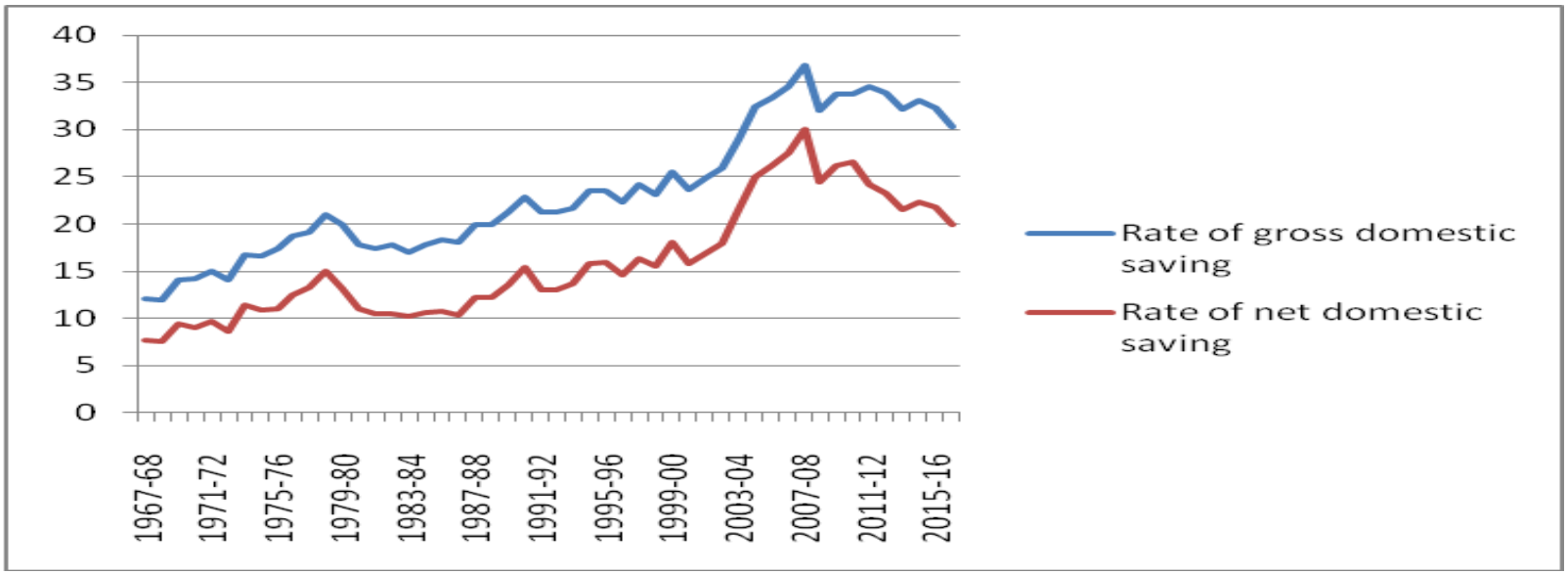
| | | |
|---|---|---|
| 1992-93 | 21.3 | 12.9 |
| 1993-94 | 21.7 | 13.6 |
| 1994-95 | 23.6 | 15.8 |
| 1995-96 | 23.6 | 15.9 |
| 1996-97 | 22.4 | 14.6 |
| 1997-98 | 24.2 | 16.3 |
| 1998-99 | 23.2 | 15.5 |
| 1999-00 | 25.5 | 18.0 |
| 2000-01 | 23.7 | 15.7 |
| 2001-02 | 24.8 | 16.8 |
| 2002-03 | 25.9 | 17.9 |
| 2003-04 | 29.0 | 21.5 |
| 2004-05 | 32.4 | 25.0 |
| 2005-06 | 33.4 | 26.2 |
| 2006-07 | 34.6 | 27.5 |
| 2007-08 | 36.8 | 30.0 |
| 2008-09 | 32.0 | 24.4 |
| 2009-10 | 33.7 | 26.2 |

| | | |
|---|---|---|
| 2010-11 | 33.7 | 26.5 |
| 2011-12 | 34.6 | 24.1 |
| 2012-13 | 33.9 | 23.2 |
| 2013-14 | 32.1 | 21.5 |
| 2014-15 | 33.1 | 22.3 |
| 2015-16 | 32.3 | 21.7 |
| 2016-17 | 30.3 | 19.9 |

Source:

https://www.rbi.org.in/Scripts/AnnualPublications.aspx?head=Handbook+of+Statistics+on+Indian+Economy

For the year 2016 and 2018




Source: https://www.rbi.org.in/Scripts/AnnualPublications.aspx?head=Handbook+of+Statistics+on+Indian+Economy

b) Foreign Direct Investment:

Traditionally FDI is seen as way to fill the gap between domestically available savings, foreign exchange, government revenue, foreign aid etc. and desired level of required investment to achieve economic growth. FDI also fill the gaps in technology, entrepreneurship and management skills. Though importance of FDI was recognised by the government since Industrial policy of 1948, FDI did not flow in the economy. May be due to crises of 1991 or conscious shift in the policy by the government the FDI started coming in the economy post 1991. Today India is considered to be attractive destination for investment by foreign investors.

When person or business organisation in one country invests money in assets of company in another country owned by another, it is called as Foreign Direct Investment. The following tables shows FDI in Billion $ invested in India Business from liberalization period.

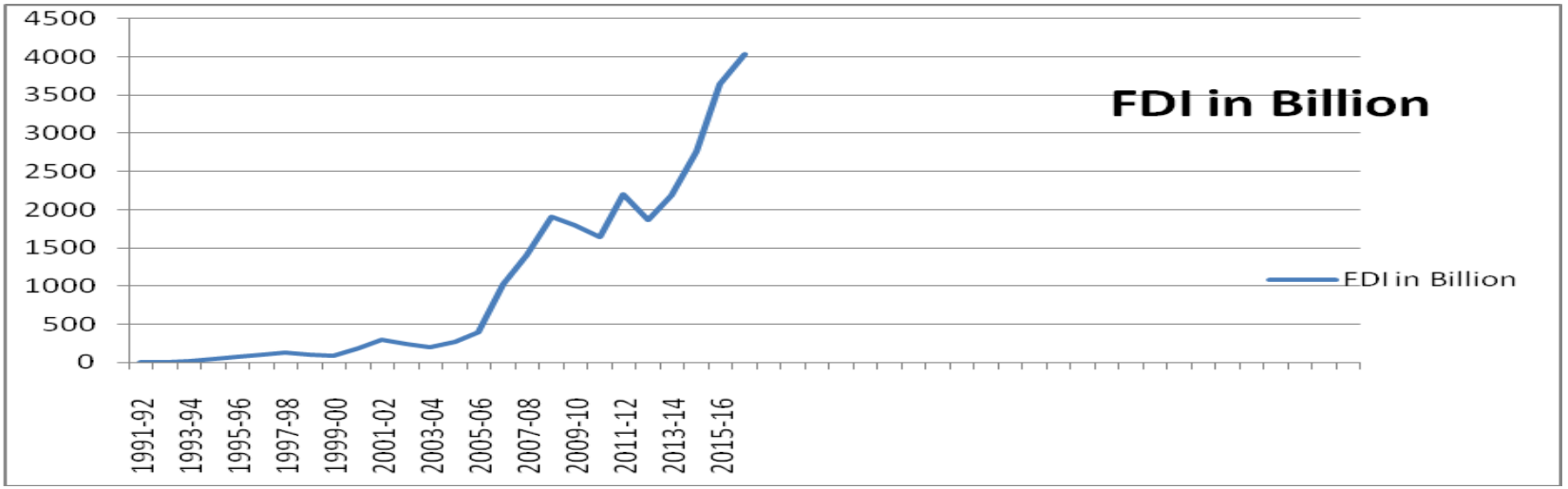
Foreign Direct Investment:

| Year | FDI in Billion |
|---|---|
| 1991-92 | 3.16 |
| 1992-93 | 9.65 |
| 1993-94 | 18.38 |

| | |
|---|---|
| 1994-95 | 41.26 |
| 1995-96 | 71.72 |
| 1996-97 | 100.15 |
| 1997-98 | 132.20 |
| 1998-99 | 103.58 |
| 1999-00 | 93.38 |
| 2000-01 | 184.04 |
| 2001-02 | 292.69 |
| 2002-03 | 246.81 |
| 2003-04 | 198.30 |
| 2004-05 | 272.34 |
| 2005-06 | 397.30 |
| 2006-07 | 1030.37 |
| 2007-08 | 1398.84 |
| 2008-09 | 1914.19 |
| 2009-10 | 1796.42 |
| 2010-11 | 1642.55 |
| 2011-12 | 2200.00 |

| | |
|---|---|
| 2012-13 | 1868.69 |
| 2013-14 | 2185.95 |
| 2014-15 | 2764.00 |
| 2015-16 | 3641.46 |
| 2016-17 | 4040.57 |

Source: FDI in Billion Rs. 2000 to 2017 Source Hand BOOK RBI 2017 1990 to 1999-2000 data from Hand book RBI 2010




Source: FDI in Billion Rs. 2000 to 2017 Source Hand BOOK RBI 2017 1990 to 1999-2000 data from Hand book RBI 2010

More FDI coming in India is good for business and economic development. Though importance of FDI was recognised from 1948 industrial policy, much FDI did not come in. Foreign capital was allowed in all those companies where Indian owner will have control over the management of the company. At that time industries with international reputation were not present hence much foreign capital did not come in. This continuous to be the state of FDI till revolutionary Industrial policy was announced in the year 1991. Post 1991 FDI started coming in, the sizable FDI started coming in from 2006-2007. This is clear if we see the above table. FDI in the year 2006-2007 was 1030.37 billion which increased to 4040.57 billion in the year 2016-2017

c) Consumer Price Index: Rate of inflation is one of the important macroeconomic variables impacting economic growths. Stability in the prices or moderate inflation gives confidence to investors to invest in the economy. Two widely used price indexes are WPI which is used to measure the general rate of inflation and CPI which is used to measure the cost of living. Stable prices are providing good environment not only for domestic investors but also for foreign investors. Considering the importance of stable prices, the present monetary policy is inflation targeting. Four plus or minus two is the rate of inflation which RBI is mandated to maintain.

Both the index is used to measure inflation. Consumer price index measures retail inflation. In India at present CPI is used for policy formulations to control inflation. In India it is clear from CPI data that higher inflation was experienced in India for several years.

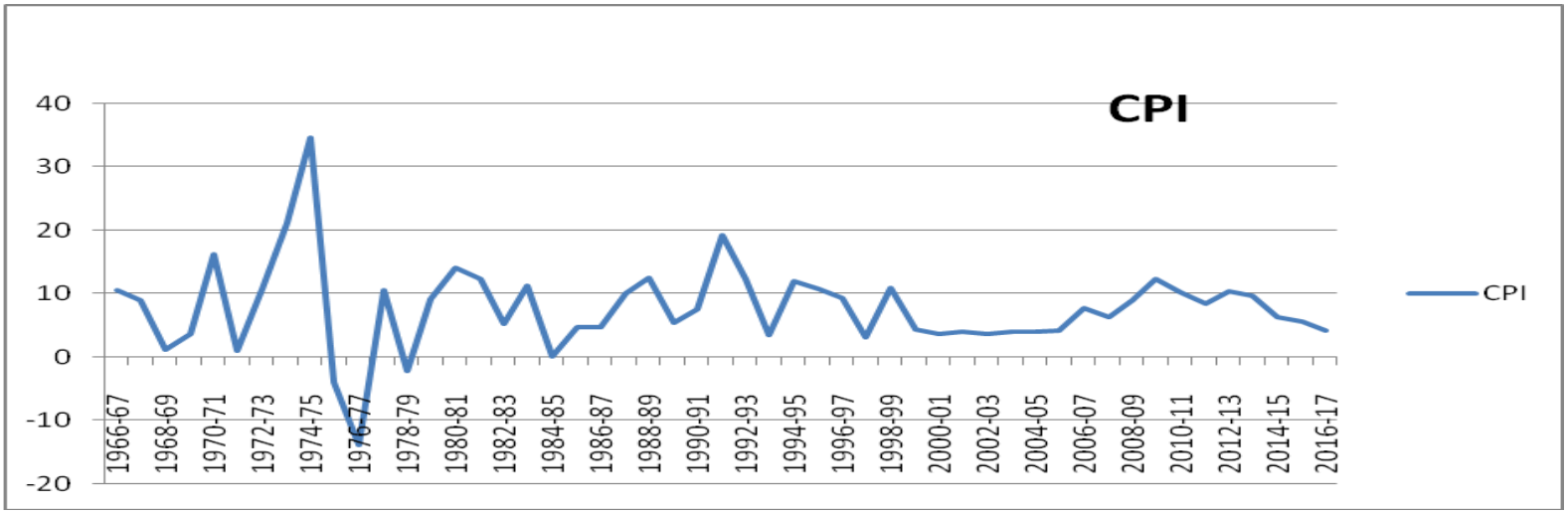
Consumer Price Index

| Year | CPI |
|---|---|
| 1966-67 | 10.61 |
| 1967-68 | 8.90 |
| 1968-69 | 1.26 |
| 1969-70 | 3.73 |
| 1970-71 | 16.17 |
| 1971-72 | 1.03 |
| 1972-73 | 10.71 |
| 1973-74 | 21.20 |
| 1974-75 | 34.60 |
| 1975-76 | -3.95 |
| 1976-77 | -13.82 |
| 1977-78 | 10.58 |
| 1978-79 | -2.16 |
| 1979-80 | 9.15 |
| 1980-81 | 14.16 |
| 1981-82 | 12.41 |

| | |
|---|---|
| 1982-83 | 5.18 |
| 1983-84 | 11.35 |
| 1984-85 | 0.19 |
| 1985-86 | 4.80 |
| 1986-87 | 4.76 |
| 1987-88 | 9.97 |
| 1988-89 | 12.56 |
| 1989-90 | 5.37 |
| 1990-91 | 7.64 |
| 1991-92 | 19.30 |
| 1992-93 | 12.32 |
| 1993-94 | 3.53 |
| 1994-95 | 11.94 |
| 1995-96 | 10.75 |
| 1996-97 | 9.27 |
| 1997-98 | 3.13 |
| 1998-99 | 10.98 |
| 1999-00 | 4.44 |
| 2000-01 | 3.74 |

| | |
|---|---|
| 2001-02 | 4.10 |
| 2002-03 | 3.73 |
| 2003-04 | 4.00 |
| 2004-05 | 4.00 |
| 2005-06 | 4.23 |
| 2006-07 | 7.80 |
| 2007-08 | 6.40 |
| 2008-09 | 9.02 |
| 2009-10 | 12.41 |
| 2010-11 | 10.28 |
| 2011-12 | 8.39 |
| 2012-13 | 10.44 |
| 2013-14 | 9.68 |
| 2014-15 | 6.29 |
| 2015-16 | 5.65 |
| 2016-17 | 4.12 |

Source: CPI Inflation year on year 1970 to 1999-200: Hand book RBI 2001 and 1965 to 1969 Eco survey 1968-1969




Source: CPI Inflation year on year 1970 to 1999-200:  Hand book RBI 2001 and 1965 to 1969 Eco survey 1968-1969

If we see the above data it can be seen that CPI year on year growth was in double digit during the years 1974-1975, 1991-1993, 1994-1996, 2009-2011. During these periods inflation rate was above target of moderate inflation laid down by RBI. For last three years due to change in the RBI act and focussing monetary policy on inflation targeting, inflation is under control.

d) Crude oil prices: India is depending on import of crude oil to meet 90% of our petroleum requirement as we do not have domestic availability of crude oil. Crude oil prices in the international market are fluctuating sometimes widely putting pressure on foreign exchange reserve. But the international prices of crude oil are not in the hands of government. In short, we do not have any control on them and are to be accepted as they are and fine tune domestic policy to avoid any adverse impact on economy's growth. Crude oil prices are in dollar term. Dollar prices can be converted in Rupee term through exchange rate prevailing in the economy at that point of time. Every individual is concern about global crude prices as they impact one and all in the economy.

Following are impact of crude oil prices in the international market on Indian economy.

Higher prices mean negative impact on fiscal deficit:

When crude oil prices are rising in the international market, government may require borrowing more money in the market as tax revenue is not adequate to pay the growing prices. More borrowing by government from the market means growing gap between income and expenditure of the government. If this gap is growing mean deficit of the government is growing. In short fiscal deficit is more. More fiscal deficit is a matter of concern because of FRBM act. More deficits will

increase the average prices of goods and services in the market causing the problem of inflation.

Impact on rupee:

When the price of crude oil is growing in the international market, outflow of foreign currency from India will increase. If there is corresponding increase in the inflow of foreign currency rupee will depreciate. Depreciating rupee makes import costlier. Crude oil being essential commodity it is impossible to curtail the import of crude oil. Down ward pressure on rupee will continue.

Impact on current account deficit:

When crude oil price in the international market rises, India will have to pay more dollars to outside world. It means debit transaction value will increase. It means import value will be greater than export value. This will increase current account deficit.

Impact on stocks:

Several companies profitability depends upon crude oil prices such as airlines, shipping as the oil price is a major component of cost of production. More oil prices mean lesser profitability. Lesser profitability dampens the sentiments of the investor. Demand for such companies stock in the market falls. Share prices of such companies in the market will fall resulting in less market capitalization of the company.

Impact on inflation:

Growing crude oil prices increase the prices of all goods and services in the market to increase. In globalized economy transport cost is one of the major components of cost as commodity is produced in one corner of the country and is sold globally. When transport cost increase total cost of production rise. To recover the growing cost of production companies have to raise the prices of goods and services they produce.

When prices of all goods and services are growing it is nothing but the problem of inflation. High inflation is very dangerous to economy.

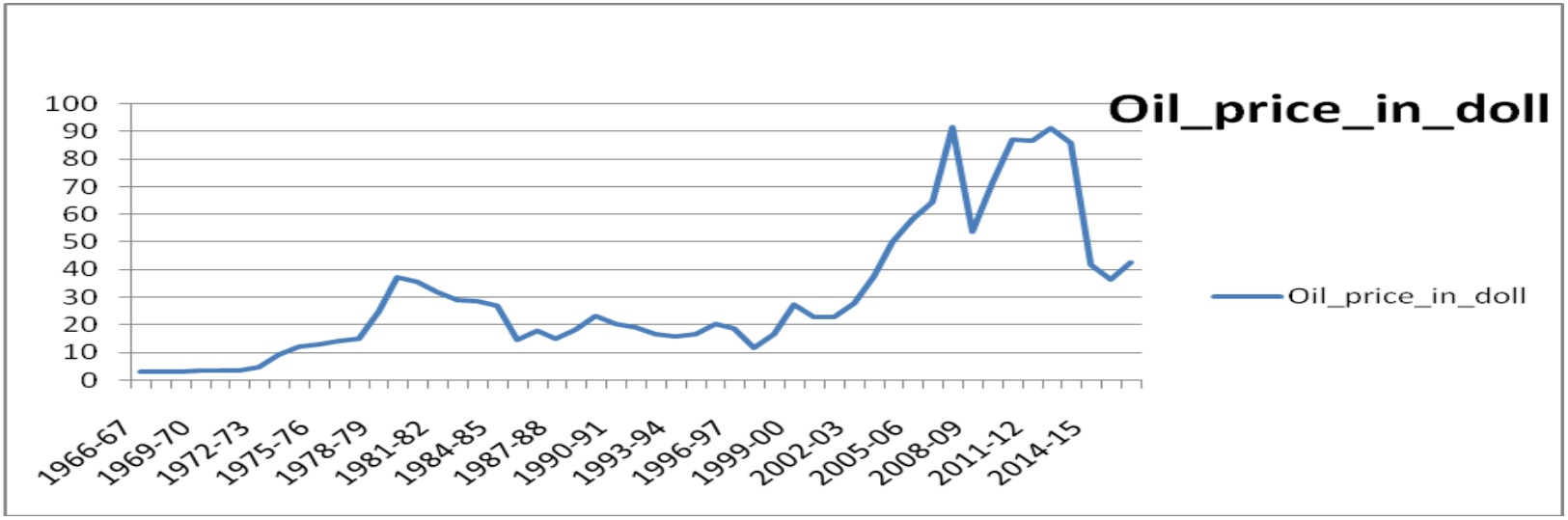
## Crude oil prices

| Year | Oil_price_in_dollar |
|---|---|
| 1966-67 | 3.12 |
| 1967-68 | 3.18 |
| 1968-69 | 3.32 |
| 1969-70 | 3.39 |
| 1970-71 | 3.6 |
| 1971-72 | 3.6 |
| 1972-73 | 4.75 |
| 1973-74 | 9.35 |
| 1974-75 | 12.21 |
| 1975-76 | 13.1 |
| 1976-77 | 14.4 |
| 1977-78 | 14.95 |
| 1978-79 | 25.1 |
| 1979-80 | 37.42 |
| 1980-81 | 35.75 |
| 1981-82 | 31.83 |

| | |
|---|---|
| 1982-83 | 29.08 |
| 1983-84 | 28.75 |
| 1984-85 | 26.92 |
| 1985-86 | 14.44 |
| 1986-87 | 17.75 |
| 1987-88 | 14.87 |
| 1988-89 | 18.33 |
| 1989-90 | 23.19 |
| 1990-91 | 20.2 |
| 1991-92 | 19.25 |
| 1992-93 | 16.75 |
| 1993-94 | 15.66 |
| 1994-95 | 16.75 |
| 1995-96 | 20.46 |
| 1996-97 | 18.64 |
| 1997-98 | 11.91 |
| 1998-99 | 16.56 |
| 1999-00 | 27.39 |
| 2000-01 | 23 |

| | |
|---|---|
| 2001-02 | 22.81 |
| 2002-03 | 27.69 |
| 2003-04 | 37.66 |
| 2004-05 | 50.04 |
| 2005-06 | 58.3 |
| 2006-07 | 64.2 |
| 2007-08 | 91.48 |
| 2008-09 | 53.48 |
| 2009-10 | 71.21 |
| 2010-11 | 87.04 |
| 2011-12 | 86.46 |
| 2012-13 | 91.17 |
| 2013-14 | 85.6 |
| 2014-15 | 41.85 |
| 2015-16 | 36.34 |
| 2016-17 | 42.74 |

Source: Crude oil price in $ current price from 1946 to 2017 https://inflationdata.com/Inflation/Inflation_Rate/Historical_Oil_Prices_Table.asp




Source: Crude oil price in $ current price from 1946 to 2017 https://inflationdata.com/Inflation/Inflation_Rate/Historical_Oil_Prices_Table.asp

We can see from the above table that crude oil prices were high during 1981 to 1985 and 2004 to 2013. It is the general observation that when oil prices in the international market are high inflation is experience in the economy. High inflation situation is normally not preferred by business because of growing uncertainties. Oil refineries in India suffered in 2012-2013 as government did not allowed them to raise the prices of petrol and Diesel in local market.

Crude prices are playing an important role in deciding monetary policy. You will always find that references are made to crude prices in the assessment of economy and also in outlook of the economy in the monetary statement of RBI in every policy.

e) Trade Deficit: It is the difference between merchandise export and imports. Normally all emerging economies have more tread deficit and it is a challenge to government to keep it at manageable level. Higher tread deficit can hamper economic growth. Trade deficit is one of the important macroeconomic variables. It represents strength of the economy. Positive trade balance is a sign of countries strength.

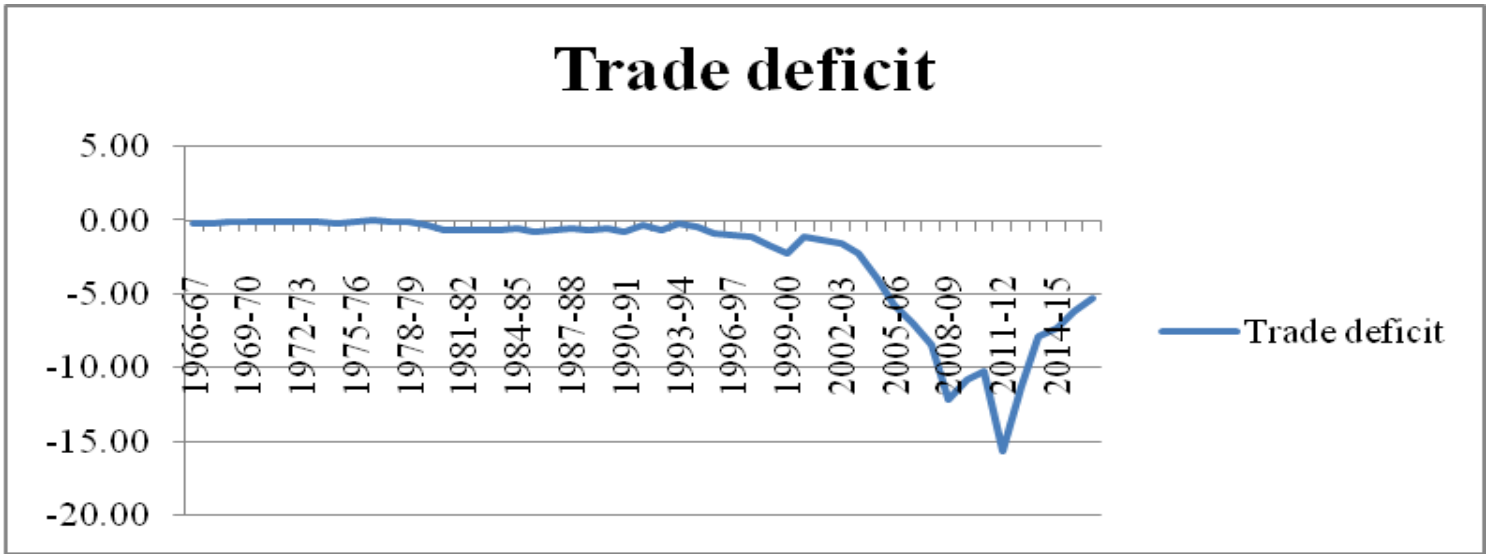
# Trade Deficit

| Year | Trade deficit |
|---|---|
| 1966-67 | -0.18 |
| 1967-68 | -0.14 |
| 1968-69 | -0.06 |
| 1969-70 | -0.03 |
| 1970-71 | -0.05 |
| 1971-72 | -0.07 |
| 1972-73 | -0.04 |
| 1973-74 | -0.06 |
| 1974-75 | -0.14 |
| 1975-76 | -0.08 |
| 1976-77 | 0.04 |
| 1977-78 | -0.08 |
| 1978-79 | -0.13 |
| 1979-80 | -0.34 |
| 1980-81 | -0.67 |
| 1981-82 | -0.63 |

| | |
|---|---|
| 1982-83 | -0.58 |
| 1983-84 | -0.59 |
| 1984-85 | -0.51 |
| 1985-86 | -0.79 |
| 1986-87 | -0.65 |
| 1987-88 | -0.54 |
| 1988-89 | -0.60 |
| 1989-90 | -0.54 |
| 1990-91 | -0.71 |
| 1991-92 | -0.25 |
| 1992-93 | -0.61 |
| 1993-94 | -0.20 |
| 1994-95 | -0.41 |
| 1995-96 | -0.86 |
| 1996-97 | -0.98 |
| 1997-98 | -1.13 |
| 1998-99 | -1.70 |
| 1999-00 | -2.26 |
| 2000-01 | -1.07 |

| | |
|---|---|
| 2001-02 | -1.35 |
| 2002-03 | -1.51 |
| 2003-04 | -2.19 |
| 2004-05 | -3.88 |
| 2005-06 | -5.76 |
| 2006-07 | -6.94 |
| 2007-08 | -8.39 |
| 2008-09 | -12.08 |
| 2009-10 | -10.82 |
| 2010-11 | -10.23 |
| 2011-12 | -15.61 |
| 2012-13 | -11.25 |
| 2013-14 | -7.82 |
| 2014-15 | -7.32 |
| 2015-16 | -6.19 |
| 2016-17 | -5.21 |

Source: Trade deficit as percentage of GDP at current prices Calculated GDP current price data from Statistical Hand book 2016 and Trade Bal. data from Eco survey 1960 to 1980




Source: Statistical Hand book 2016 and Trade Bal. data from Eco survey 1960 to 1980

If you see the above data it is observed that trade deficit was high during 2007 to 2013. It is on account of high crude oil prices and sluggish merchandise export. It is also seen from the data that it was falling since 1967 to 2011-12

f) Current Account Deficit:

It is the difference between import of goods and services and export of goods and services. Normally all developing countries like India have current account deficit. Growing current account deficit is a serious concern of the government as it may adversely impact economic growth. It may lead to depreciation of the country's currency. To keep current account deficit under control foreign tread policy is crucial. Countries are trying to promote exports and curtail imports.

Current account deficit is a balance in the balance of payment. Balance of payment of India is record of all economic transaction between residents of India and residents of the rest of the world. Balance of payment is always in balance at is based on the principles of double entry book keeping system.

There are two major accounts in balance of payment. First is Current account and second is capital account. Current account includes all merchandise export and import transactions. Export of merchandise is credit transaction where as import of merchandise is a debit transaction. Balance of merchandise export and import is called as trade balance. Trade balance of India is negative for majority period. It is negative for all developing economies like India. Negative trade balance means export of goods is less than imports of goods.

When export and import of services are added along with remittances and aids paid and received, we get current account balance. Export of services, remittances received and aids received are credit transactions. Import of services, remittances paid and aid given to rest of the world are debit transaction. When all the above credit and debit transactions are added together we get current account balance. Current account balance is important macroeconomic indicator representing international standing or position of the country.

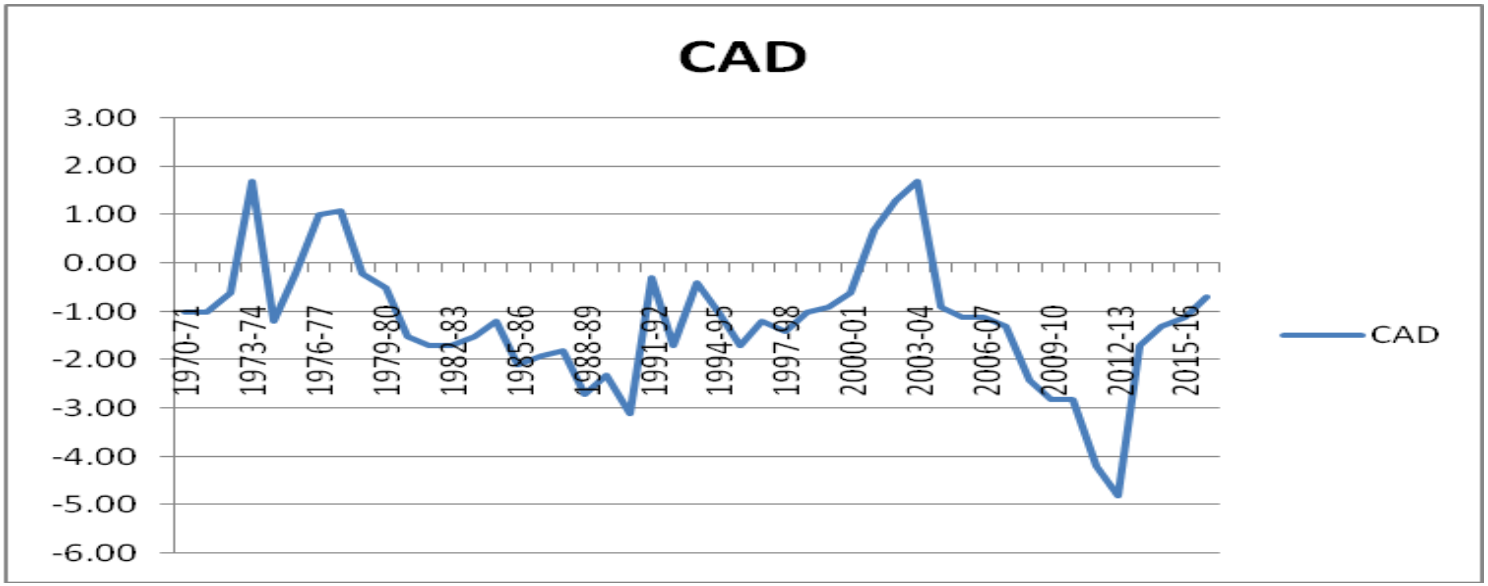
Another important account in the balance of payment is capital account. It incorporates transactions of inflow and outflow of capital. For example American company is making long term investment in Indian company is inflow of capital transaction. It is credit transaction. Tata Motors purchased Jaguar, Car brand from United Kingdom is an example of outflow of capital which is a debit entry. Long term loans raised by Indian residents from outside India are credit entry and loan given by Indian banker to some company outside India is a debit entry. Current account also includes accommodative transactions. Accommodative transactions are all those transactions which are made to balance the balance of payment. For example current account balance is minus 1000 units of a currency. Capital account balance is plus 800 units of a currency. In this case you are required to make a capital account accommodative transaction of loan of 200 units of currency or you will reduce foreign exchange reserve of the country by 200 units of currency so as to balance the balance of payment. There are several examples of accommodative transactions.

CAD as % of GDP

| Year | CAD |
|---|---|
| 1970-71 | -1.00 |
| 1971-72 | -1.00 |
| 1972-73 | -0.60 |
| 1973-74 | 1.70 |
| 1974-75 | -1.20 |
| 1975-76 | -0.20 |
| 1976-77 | 1.00 |
| 1977-78 | 1.10 |
| 1978-79 | -0.20 |
| 1979-80 | -0.50 |
| 1980-81 | -1.50 |
| 1981-82 | -1.70 |
| 1982-83 | -1.70 |
| 1983-84 | -1.50 |
| 1984-85 | -1.20 |
| 1985-86 | -2.10 |
| 1986-87 | -1.90 |
| 1987-88 | -1.80 |
| 1988-89 | -2.70 |
| 1989-90 | -2.30 |
| 1990-91 | -3.10 |
| 1991-92 | -0.30 |
| 1992-93 | -1.70 |
| 1993-94 | -0.40 |
| 1994-95 | -1 |

| | |
|---|---|
| 1995-96 | -1.7 |
| 1996-97 | -1.2 |
| 1997-98 | -1.4 |
| 1998-99 | -1 |
| 1999-00 | -0.9 |
| 2000-01 | -0.6 |
| 2001-02 | 0.7 |
| 2002-03 | 1.3 |
| 2003-04 | 1.7 |
| 2004-05 | -0.9 |
| 2005-06 | -1.1 |
| 2006-07 | -1.1 |
| 2007-08 | -1.3 |
| 2008-09 | -2.4 |
| 2009-10 | -2.8 |
| 2010-11 | -2.8 |
| 2011-12 | -4.2 |
| 2012-13 | -4.8 |
| 2013-14 | -1.7 |
| 2014-15 | -1.3 |
| 2015-16 | -1.1 |
| 2016-17 | -0.7 |

Source: CAD as % of GDP Hand book RBI 01, 05,09,13,17




Source: CAD as % of GDP Hand book RBI 01,05,09,13,17

When current account deficit is negative it means balance of payment is unfavourable to the country. If current account deficit is growing it means there is serious disequilibrium the international trade. Current account deficit of India is negative for most of the time. In the years (1980 to 1983), (1986-1987), (1989 to 1991), (2011 to 2013) current account deficit was high. Import substitution and export promotion will help to reduce current account deficit.

g) Exchange Rate:

It means value of our currency interns of foreign currency like Dollar, Pound, and Euro etc. At present exchange rate is determined by market forces of demand and supply as most of the economies including India have moved from fixed exchange rate regime to flexible market determined exchange rate. In fixed exchange rate regime, monetary authority of a country arbitrarily determined the value of domestic currency in terms of foreign currency. It prevailed during the period of gold standard. During gold standard each country was required to declare the value of their currency in terms of gold. It means currency was pegged to gold. This was the base to find the rate of exchange between two currencies. The gold standard broke down after the First World War. Gold standard was out of practice till 1945. This is the end of Second World War. To rebuild Europe IMF was formed in the year 1945. Fixed exchange rate system was revived again by making some change in its form. After 1945 all countries who were members of IMF were asked to declare the value of their currency in terms of reserve currency. It is US dollar. US dollar was reserve currency because USA gave promise to entire world to convert their dollar to gold at a value decided and declared by them in 1945. This system worked well till

1973. After the collapse of this system present system of flexible exchange got evolved over a period of time. Growing current account deficit may lead to depreciation of rupee. It may help exporters to increase their export as Indian goods become cheaper in the foreign markets and curtail imports as foreign goods are becoming more costly in the domestic market reducing their demand.

It is difficult to tell which exchange rate is good. Both have merits and demerits.

Argument in favor of fixed exchange system:

1) Fixed exchange rate system brings stability in the in the foreign exchange market. There is no uncertainty in the market.

2) Smooth movement of foreign capital: Smooth movement of foreign capital is taking place as investor is getting assured returns on his investment as foreign exchange rate risk doesn't exist.

3) Competitive depreciation of currency:

As country keeps the exchange rate fixed competitive currency depreciation is not possible.

Argument in favor of Floating exchange system:

1) Monetary policy autonomy: It is argued that country's ability to expand or contract its money supply is unlimited as exchange rate parity is to be maintained. Monetary expansion can lead to inflation which will puts downward pressure on a fixed exchange rate.

2) Trade balance adjustment: If a country developed trade deficit that could not be corrected by domestic policy. Flexible exchange rate will correct it automatically by making import costlier.

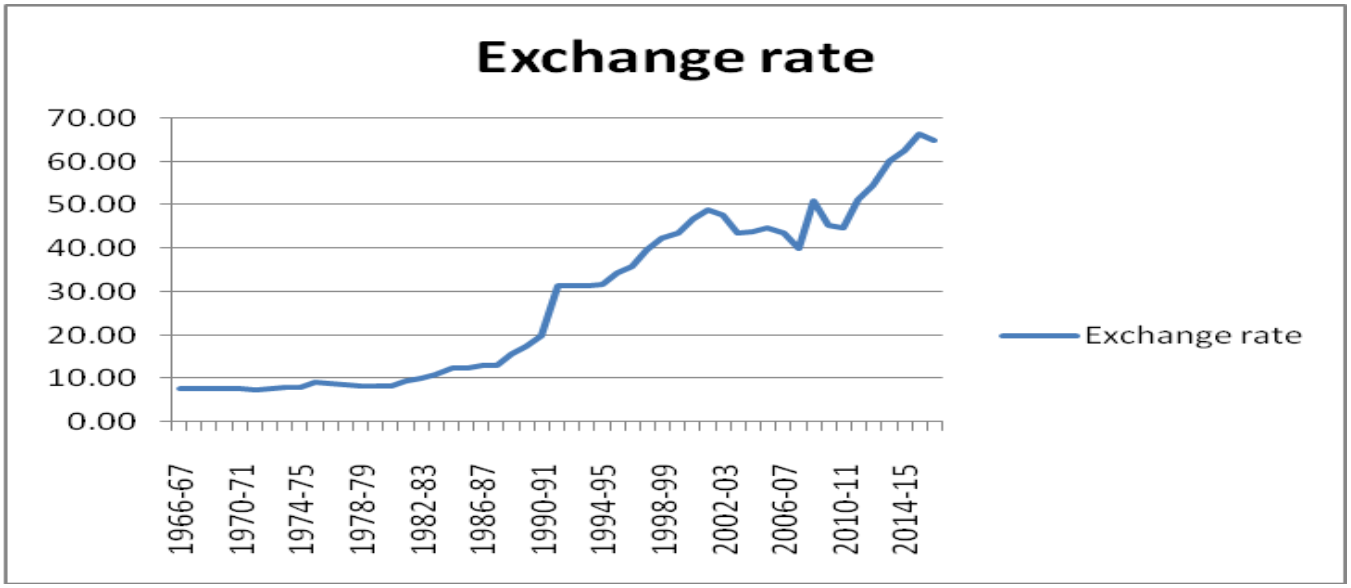
# Exchange rate

| Year | Exchange rate |
|---|---|
| 1966-67 | 7.50 |
| 1967-68 | 7.50 |
| 1968-69 | 7.50 |
| 1969-70 | 7.50 |
| 1970-71 | 7.50 |
| 1971-72 | 7.28 |
| 1972-73 | 7.66 |
| 1973-74 | 7.84 |
| 1974-75 | 7.79 |
| 1975-76 | 8.97 |
| 1976-77 | 8.80 |
| 1977-78 | 8.43 |
| 1978-79 | 8.15 |
| 1979-80 | 8.19 |
| 1980-81 | 8.19 |
| 1981-82 | 9.35 |

| | |
|---|---|
| 1982-83 | 9.97 |
| 1983-84 | 10.71 |
| 1984-85 | 12.43 |
| 1985-86 | 12.31 |
| 1986-87 | 12.89 |
| 1987-88 | 13.03 |
| 1988-89 | 15.66 |
| 1989-90 | 17.32 |
| 1990-91 | 19.64 |
| 1991-92 | 31.23 |
| 1992-93 | 31.24 |
| 1993-94 | 31.37 |
| 1994-95 | 31.50 |
| 1995-96 | 34.35 |
| 1996-97 | 35.92 |
| 1997-98 | 39.50 |
| 1998-99 | 42.44 |
| 1999-00 | 43.61 |
| 2000-01 | 46.64 |

| | |
|---|---|
| 2001-02 | 48.80 |
| 2002-03 | 47.51 |
| 2003-04 | 43.45 |
| 2004-05 | 43.76 |
| 2005-06 | 44.61 |
| 2006-07 | 43.60 |
| 2007-08 | 39.99 |
| 2008-09 | 50.95 |
| 2009-10 | 45.14 |
| 2010-11 | 44.65 |
| 2011-12 | 51.16 |
| 2012-13 | 54.39 |
| 2013-14 | 60.10 |
| 2014-15 | 62.59 |
| 2015-16 | 66.33 |
| 2016-17 | 64.84 |

Source: Handbook of Statistics on Indian Economy 2016-17 RBI (78-79 to 16-17) Exchange rate 1970-1971 to 1977-78 HANDBOOK OF STATISTICS ON INDIAN ECONOMY 2002 Copy. Data 66-69-70 is from news on net.




Source: Handbook of Statistics on Indian Economy 2016-17 RBI (78-79 to 16-17) Exchange rate 1970-1971 to 1977-78 HANDBOOK OF STATISTICS ON INDIAN ECONOMY 2002 Copy. Data 66-69-70 is from news on net.

If we see the above table exchange rate was stable for first approximately ten years from 1966 to 1974. There after it went on rising. However India was following fixed exchange rate system. Hence rupee value was determined arbitrarily. From 1990 India started facing the problem of balance of payment crises. The sharp fall in the rupee value took place from 1990. India was forced to depreciate rupee to overcome serious imbalance in the trade and current account balance. Crude oil prices, unfavourable terms of trade are some of the reasons. India moved from fixed exchange rate to flexible exchange rate from 1994. Road map of rupee convertibility was prepared by Tarapore committee. At present the rupee is getting depreciating continuously.

h) Interest:

Interest is the price of capital. Higher is the interest rate higher is the cost of capital to companies. Business people always prefer lower interest rate as capital is available to them at lower price enabling them to have their project financially viable. However lower interest de motivate savers to save as it is a reward for saving. It is very much imperative to maintain a balance so that savings are made by households at the same time business remain viable.

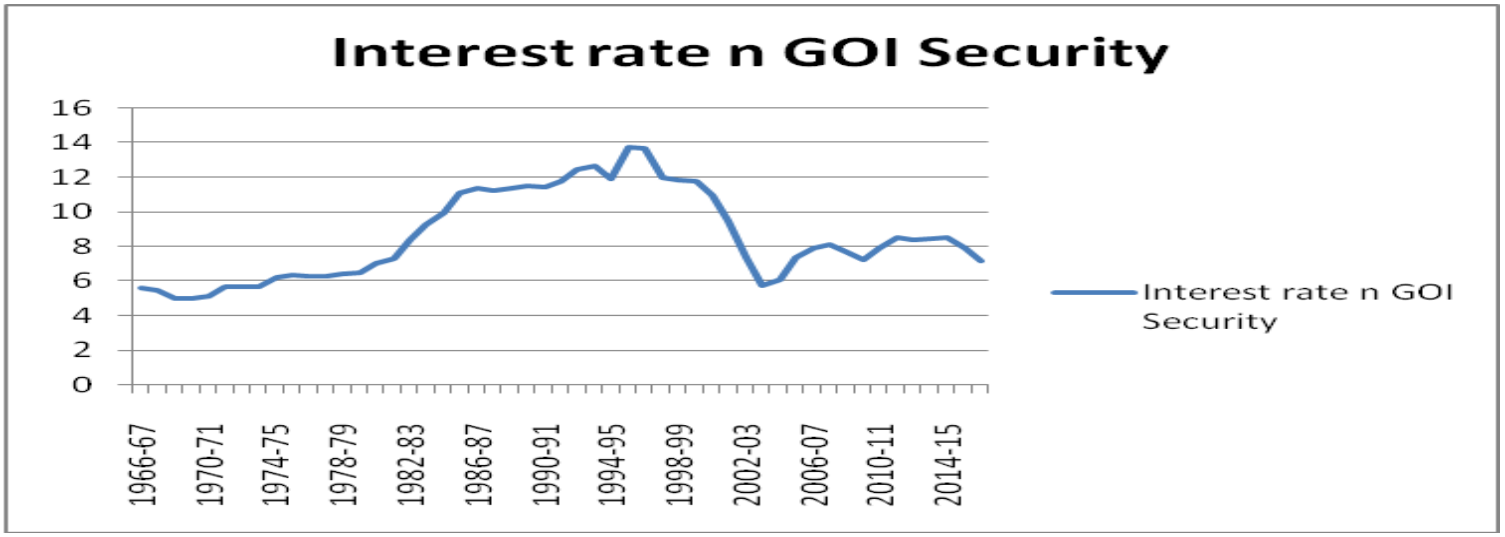
Interest rate n GOI Security

| Year | Interest rate n GOI Security |
|---|---|
| 1966-67 | 5.57 |
| 1967-68 | 5.45 |
| 1968-69 | 4.99 |
| 1969-70 | 5.00 |
| 1970-71 | 5.15 |
| 1971-72 | 5.65 |
| 1972-73 | 5.65 |
| 1973-74 | 5.65 |
| 1974-75 | 6.21 |
| 1975-76 | 6.34 |
| 1976-77 | 6.29 |
| 1977-78 | 6.31 |
| 1978-79 | 6.39 |
| 1979-80 | 6.48 |
| 1980-81 | 7.03 |
| 1981-82 | 7.29 |

| | |
|---|---|
| 1982-83 | 8.36 |
| 1983-84 | 9.29 |
| 1984-85 | 9.98 |
| 1985-86 | 11.08 |
| 1986-87 | 11.38 |
| 1987-88 | 11.25 |
| 1988-89 | 11.4 |
| 1989-90 | 11.49 |
| 1990-91 | 11.41 |
| 1991-92 | 11.78 |
| 1992-93 | 12.46 |
| 1993-94 | 12.63 |
| 1994-95 | 11.9 |
| 1995-96 | 13.75 |
| 1996-97 | 13.69 |
| 1997-98 | 12.01 |
| 1998-99 | 11.86 |
| 1999-00 | 11.77 |
| 2000-01 | 10.95 |

| | |
|---|---|
| 2001-02 | 9.44 |
| 2002-03 | 7.34 |
| 2003-04 | 5.71 |
| 2004-05 | 6.11 |
| 2005-06 | 7.34 |
| 2006-07 | 7.89 |
| 2007-08 | 8.12 |
| 2008-09 | 7.69 |
| 2009-10 | 7.23 |
| 2010-11 | 7.92 |
| 2011-12 | 8.52 |
| 2012-13 | 8.36 |
| 2013-14 | 8.45 |
| 2014-15 | 8.51 |
| 2015-16 | 7.89 |
| 2016-17 | 7.16 |

Source: HANDBOOK OF STATISTICS ON INDIAN ECONOMY 2017 1980-81 to 85-86 Hand books 2008




Source: HANDBOOK OF STATISTICS ON INDIAN ECONOMY 2017 1980-81 to 85-86 Hand book 2008

Interest on government of India security is acting as a bench mark which decides the interest rate in the market. Government of India security is risk free security or bond as payment of interest and capital repayment is guaranteed by the government. The market interest rate will depend upon risk free return plus risk premium.

The data shows that interest was stable between the periods 1966 to 1980. It was high in the range of 10% to 13% between the periods 1985 to 2001. For past 10 years it is harrowing between 7% and 8%.

i) Fiscal deficit:

Post great depression new economics developed by Keynes advocated the fiscal deficit. All economies have adopted deficit budget policy as it is more developmental in nature. Fiscal expansion has ability to establish fiscal balance. Every government in the world was increasing deficits in the budget. Fiscal deficit represents resource gap of the economy. Fiscal deficit = Total expenditure of the government – Revenue receipt – recoveries of loans – other receipts. Fiscal deficit were growing continuously across all economies in the world.

Due growing non developmental expenditure of the government fiscal situation deteriorated during 1980s. If deficit in the budget is not controlled economy may fall in debt trap as payment of interest burden on the government was growing. India faced unprecedented financial crises in terms of paucity of foreign exchange on account of Gulf war due to which crude oil prices were rising. Indian economy was almost in deep trouble. IMF rescued us. Crises forced us to re look at our economic policies, especially fiscal policy and foreign trade policy. IMF started monitoring for extending loans to all countries. Fiscal policy reform was started in the year 1991 from budget presented in the parliament by then Finance Minister Dr. Manmohan Singh under the

leadership of  Narsingh Rao who was Prime Minister. According to export reversal of fiscal expansion was necessary to maintained the fiscal and macroeconomic balance of the economy. To maintained the fiscal balance controlling fiscal deficit was essential.

Keeping fiscal deficit is essential for fiscal prudence. As a result fiscal deficit was reduced from 7.85% in the year 1990-1991 to 5.56% in the year 1991-1992. Several developed economies made legislation to compel the government in power to keep it under control. India also passed such legislation called FRBM in 2003. Upper limit on fiscal deficit according to FRBM is 3%.  In the year 2007-2008 fiscal deficit was further reduced due to FRBM to 2.5.  In the subsequent year India was very close to the target. In spite of implementation of fiscal deficit target Government of India got adequate tax revenue and growth of manufacturing continued and we were able to grow at good rate. Inflation was also under control. Due to subprime crises of 2008 some slippage in fiscal deficit was seen, but Government of India said that they are very serious about implementing FRBM provisions to maintain fiscal prudence.

Fiscal deficit as % of GDP

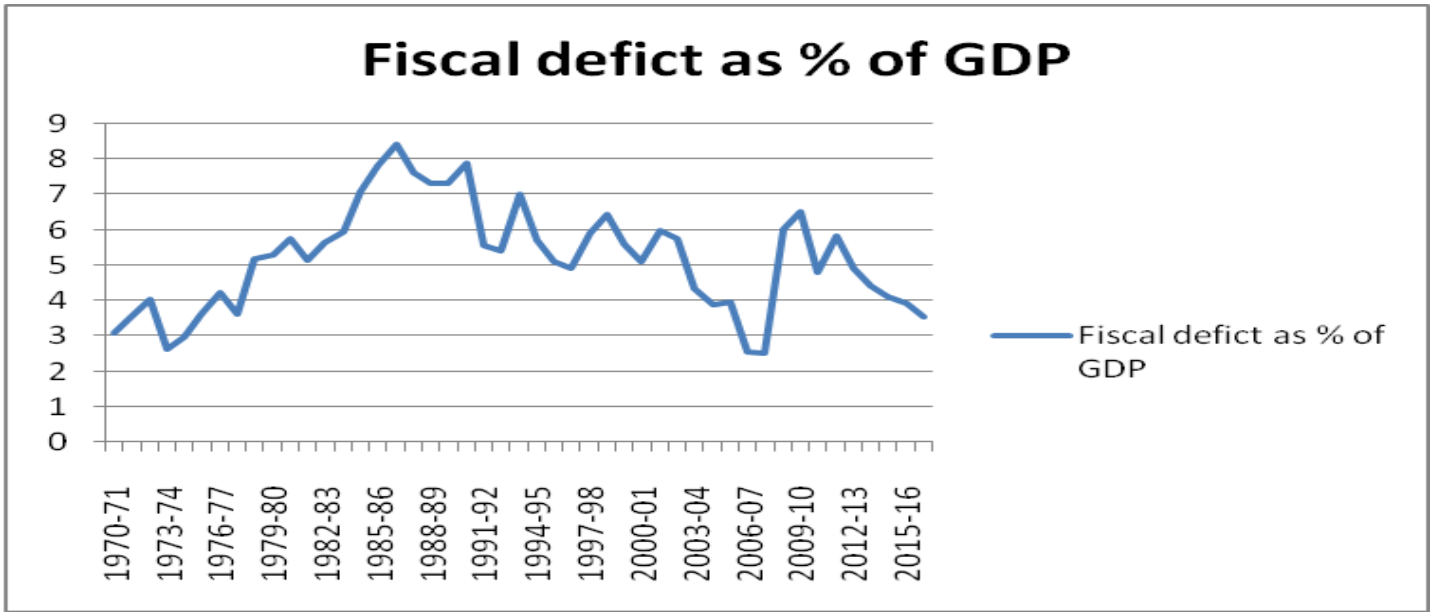
| Year | Fiscal deficit as % of GDP |
|---|---|
| 1970-71 | 3.07 |
| 1971-72 | 3.51 |
| 1972-73 | 4.02 |
| 1973-74 | 2.63 |
| 1974-75 | 2.96 |
| 1975-76 | 3.62 |
| 1976-77 | 4.22 |
| 1977-78 | 3.61 |
| 1978-79 | 5.16 |
| 1979-80 | 5.27 |
| 1980-81 | 5.75 |
| 1981-82 | 5.11 |
| 1982-83 | 5.63 |
| 1983-84 | 5.93 |
| 1984-85 | 7.05 |
| 1985-86 | 7.8 |
| 1986-87 | 8.4 |

| | |
|---|---|
| 1987-88 | 7.61 |
| 1988-89 | 7.3 |
| 1989-90 | 7.31 |
| 1990-91 | 7.85 |
| 1991-92 | 5.56 |
| 1992-93 | 5.38 |
| 1993-94 | 7.01 |
| 1994-95 | 5.71 |
| 1995-96 | 5.10 |
| 1996-97 | 4.90 |
| 1997-98 | 5.87 |
| 1998-99 | 6.43 |
| 1999-00 | 5.59 |
| 2000-01 | 5.10 |
| 2001-02 | 5.98 |
| 2002-03 | 5.72 |
| 2003-04 | 4.34 |
| 2004-05 | 3.88 |
| 2005-06 | 3.96 |

| | |
|---|---|
| 2006-07 | 2.54 |
| 2007-08 | 2.50 |
| 2008-09 | 6.00 |
| 2009-10 | 6.50 |
| 2010-11 | 4.80 |
| 2011-12 | 5.80 |
| 2012-13 | 4.90 |
| 2013-14 | 4.40 |
| 2014-15 | 4.10 |
| 2015-16 | 3.90 |
| 2016-17 | 3.52 |

Source: Various issues of economic survey of India,

3rd Edition, Macro Economics, by D. N. Dwivedi, Mc Grow Hills




Source: Various issues of economic survey of India,

3rd Edition, Macro Economics, by D. N. Dwivedi, Mc Grow Hills

If we the above data fiscal deficit was reasonable up to 1978 though small rise was seen for some years. From 1978 to 1990 it was showing upward trend. It shows that government was also inclined to spend more and did not keep it under control. One important reason for growing deficit was growing burden of interest payment due to heavy borrowing and growth of non development expenditure. From 1991 due to crises and IMF precondition for loan government became conscious of the problem. Realised the adverse impact of growing fiscal deficit and decided to reduce it in a phase manner. In the year 1993-1994 it increased to 7.1 but there after efforts were made to control it. Some marginal slippage was seen in between. In the year 2003 FRBM was passed by the parliament. It was reduced to 2.5 in the year 2007-2008. In the subsequent years it increased due to subprime crises. If we see the data 2008 to 2010 deficit increase to 6%. There after efforts were made to keep it under control. During crises government was required to help industries to overcome a situation of falling demand for their products in the market. Excise concession was given to auto industry which was in trouble at that time. Such facilities were also given to other industries also who were suffering. However government was firm on maintaining fiscal prudence by adhering to FRBM provisions. Now debate is going on whether adhering to FRBM provisions are really desirable or compromising them for achieving growth is desirable.

j) Call money rate:

Call money rate is a rate at which money for a short period of time is borrowed and lent in the call money market which is a part of money market. Banks are borrower as well as lenders. A bank who needs cash is a borrower and a bank that is having excess of cash is a lender. Borrowing and lending is done without collateral. Marketing is working on trust. Money lent is always on demand means borrower

may required to give it back to lender if lender ask for it. Normally money is borrowed and lent over night. 1 to 14 days is maturity period of call loan. Number of days is specified on loan. Any amount could be lent borrowed in call money market.

The purpose of call money market is as follows:

1) To overcome short term mismatch:

Short term mismatch arise because of the differences in maturity period. For example depositor has deposited money with a bank which is on demand which bank has lent for x days. However a depositor is asking money in less than x days. Here is mismatch seen. Bank will borrow from call money market to bridge the mismatch.

2) For making payment of increased Cash reserve ratio:

RBI in her monetary policy is empowered to change Cash reserve ratio to achieved objectives of monetary policy. Cash reserve ratio is to be maintained on net demand and time liability of the bank. Today Cash reserve ratio is required to be maintained on daily basis. Earlier it was to be maintained on reporting Friday.

3) To discount Commercial Bills:

To discount commercial bills money is borrowed in the call money market. In India bill market is not yet developed hence demand for call money for such purposes is less.

Participants are PSU, cooperative, private banks, LIC, UTI Primary dealers etc. Primary dealers are those entities who can buy and sell government bonds in the market issued by RBI. Interest paid on call loan is called call rate. Call rate shows daily scarcity or excess availability of fund. If call rate is high, there is scarcity of call money and if is less there is more liquidity in the market. It means rate is

influenced by market forces of demand and supply. When the deal is made money is immediately transferred to borrower.

In India call money market is located in business centres such as Mumbai, Chennai, and Kolkata. Indian call money market is small with less numbers of participants. There is no ceiling on call money rate. Call money rate are seasonally fluctuating. Demand and supply of liquidity affects the call money rate. Call money rate is purely market driven and can be used as bench mark to know the liquidity position in the economy as well as for policy decision by RBI while formulating monetary policy.

Call money market is which call money rate is stable is supposed to be efficient. Reserve Bank of India is a regulator of call money market and does not borrow or lent money. If call money market is overheated Reserve Bank of India will undertake repo and reverse repo transactions. Two committees such as Sukhamoy Chakravarthy in 1985 and Vaghul committee in 1987 were appointed by Government of India to review call money market and suggest measures. There recommendations such as starting Discount and Finance House of India, allowing GIC, IDBI and NABARD to operate as lender etc.

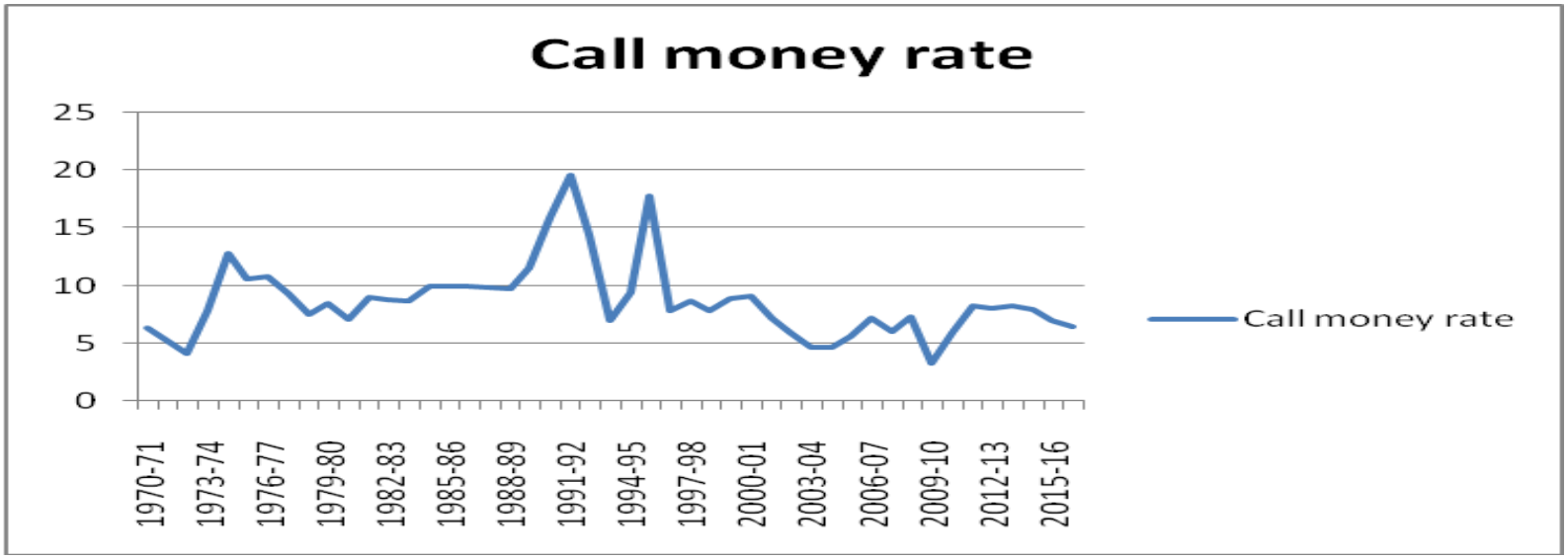
# Call money rate

| Year | Call money rate |
|---|---|
| 1970-71 | 6.38 |
| 1971-72 | 5.16 |
| 1972-73 | 4.15 |
| 1973-74 | 7.83 |
| 1974-75 | 12.82 |
| 1975-76 | 10.55 |
| 1976-77 | 10.84 |
| 1977-78 | 9.28 |
| 1978-79 | 7.57 |
| 1979-80 | 8.47 |
| 1980-81 | 7.12 |
| 1981-82 | 8.96 |
| 1982-83 | 8.78 |
| 1983-84 | 8.63 |
| 1984-85 | 9.95 |
| 1985-86 | 10 |
| 1986-87 | 9.99 |

| | |
|---|---|
| 1987-88 | 9.88 |
| 1988-89 | 9.77 |
| 1989-90 | 11.49 |
| 1990-91 | 15.85 |
| 1991-92 | 19.57 |
| 1992-93 | 14.42 |
| 1993-94 | 6.99 |
| 1994-95 | 9.4 |
| 1995-96 | 17.73 |
| 1996-97 | 7.84 |
| 1997-98 | 8.69 |
| 1998-99 | 7.83 |
| 1999-00 | 8.87 |
| 2000-01 | 9.15 |
| 2001-02 | 7.16 |
| 2002-03 | 5.89 |
| 2003-04 | 4.62 |
| 2004-05 | 4.65 |
| 2005-06 | 5.6 |
| 2006-07 | 7.22 |

| | |
|---|---|
| 2007-08 | 6.07 |
| 2008-09 | 7.26 |
| 2009-10 | 3.29 |
| 2010-11 | 5.89 |
| 2011-12 | 8.22 |
| 2012-13 | 8.09 |
| 2013-14 | 8.28 |
| 2014-15 | 7.97 |
| 2015-16 | 6.98 |
| 2016-17 | 6.42 |

Source https://data.gov.in/resources/money-rates-india-2000-01-2016-17




Source https://data.gov.in/resources/money-rates-india-2000-01-2016-17

If we the above data and graph we can vary easily see that there was surge in call rate from 1973 to 1978, 1989 to 1996. The data shows that there is volatility present in the call money rate which shows mismatch between funds availability and requirement. When call money rate is higher demand for money in the market is more than supply and vice versa.

**1. B. Objectives of the study:**

Various studies have established that financial performance of different industries is depending on effective working capital management and management of other finance ratios such as debt equity, inventory turnover ratio, liquidity ratio, current ratios etc. Similarly, various studies have also established the importance of several macroeconomic variables such as inflation rate, capital formation, interest rate, stock market index etc. on economic growth. However economic growth and industrial growth are going hand in hand. Economic growth is measured in terms of GDP growth. Progress of industries can be measured through several financial variables. When industries are performing well, economy will grow at the same time economic growth will also foster industrial growth. The existing research have not studied the impact of macro variables on performance of industries express in terms of profitability ROE, ROA, SGR etc. Therefore, it is very much essential to study the impact of important macroeconomic variables on profitability and growth of industries. In the present study the time period is post liberalization since 1991 to 2016. The objectives of this study are to study interdependence of both. This interdependence is studied through specified objectives. These objectives are as follows. In the present study the time period is post liberalization since 1991 to 2016.

1) To study the significance of current ratio, debt equity ratio, gross profit margin ratio on SGR of selected industries. The selected

industries are Steel, Electricity, Cement, Auto and consolidation of all four Industries of India post liberalization i.e. post 1990-91

2) To study the significance of current ratio, debt equity ratio on gross profit margin ratio of selected industries. The selected industries are Steel, Electricity, Cement, Auto and consolidation of all four Industries of India post liberalization i.e. post 1990-91

3) To study the significance macro economic variables on GDP growth of India post liberalization i.e. post 1990-91.

4) To study the significance of current ratio, debt equity ratio, gross profit margin ratio, SGR of selected industries on fiscal deficit of union budget post liberalization i.e. post 1990-91. The selected industries are Steel, Electricity, Cement, Auto and consolidation of all four Industries of India

5) To study the significance of current ratio, debt equity ratio, gross profit margin ratio, SGR of selected industries on call money rate post liberalization i.e. post 1990-91. The selected industries are Steel, Electricity, Cement, Auto and consolidation of all four Industries of India

6) To study the significance of GDP growth of India post liberalization i.e. post 1990-91 on SGR of selected industries. The selected industries are Steel, Electricity, Cement, Auto and consolidation of all four Industries of India

7) To study the significance of fiscal deficit and call money rate on gross profit margin ratio of selected industries of India post liberalization i.e. post 1990-91. The selected industries are Steel, Electricity, Cement, Auto and consolidation of all four Industries of India. In order to study these objectives several hypotheses are formed.

# Chapter II

## Review of Literature

### 2. A: Review of Literature:

Every research must be meaningful, should add to the knowledge of universe and at the same time it must be useful to society. Research is a continuous and ongoing process. It is very much essential to study what researchers had done already in this area so that it can be linked to present research by finding research gap and develop the conceptual framework for doing this research. Literature review gives an insight to researcher. It increases the horizon of researcher. It helps him to think from different directions and perspective. It helps researcher to formulate his idea or problems which he is planning to study. It is an important step in every research. It is systematic and comprehensive examinations of publications relevant for every research. Every research study is based on past knowledge. It cannot be made in isolation. Taking into consideration all these factors researcher has tried to take review of research publications from different sources. In the subsequent paragraphs impact of financial variables on profitability of industries and impact of macroeconomic variables of growth of a nation is made. Economic growth is a continuous and ongoing process.

2.1. (1): Olufemi I and others (2009) showed that profitability of company depends upon effective working capital management. The period of study is 1996 to 2005. The study was made for 50 companies of Nigeria, listed on their stock exchange. Time series and cross section data was used. They found significant inverse relationship between net operating profitability and average collection period. The relationship was negative for

1) Inventory turnover days

2) Average payment period

3) Cash conversion cycle.

The results are same whether the company is small or big. Companies in Nigeria are keeping large cash with them. If they manage business with lesser cash they can add value to shareholders by raising the profitability so that more dividends can be paid. In short working capital management is crucial for companies.

2.1(2): David M, Mathuva (1010) studied the working capital management of thirty companies of Nirobi. These companies are listed on Nirobi stock exchange. The period of study is 1993 to 2008. Researcher found highly significant negative relationship between time required to collect money from their customer and profitability. In simple words profitable companies cash collection cycle is of lesser duration. They also observed highly significant direct relationship between periods required to convert inventories in to sales. It means higher is the inventory higher is the profit. Adequate inventory reduce the cost of possible interruption in the production process and loss to business as products are not available to offer to customer. This leads to less supply cost and get protection against price fluctuations. The study also observed the longer the duration of payment to creditors higher is the profitability. In other words, the longer a firm takes to pay its creditors the more profitable it is.

2.1(3) Simona Gabriela Masca, and others Babes-BolyaiUniversity, (2015) observed that reduction in government expenditure was a real engine of EU growth. Cuts in expenditures on wages and salaries in the public sector and rise of the public investment were especially expansionary. On public revenue side reducing the fiscal pressure on labour and taxing consumption were good for growth. Lower the public debt higher is the growth. All these finding are contrary to establish Keynes economic theory. As per Keynesian Economics expansionary fiscal policy with increasing government expenditure can bring economy out of recession.

2.1(4) Mario Fornia, Marc Hallinc, Lippid, Lucrezia Reichlinb, (2002) Technical Report 0206, have shown that Economic variables are good predictors of inflation. They also predict real economic activity. Results shows that

a) The multivariate methods are much better than the univariate ones in forecasting inflation.

b) Economic variables do help forecasting inflation at all horizons.

c) Economic variables also forecast industrial production at first and third months.

2.1(5) Florenz C. Tugas, CISA, CPARamon V, (2012) said that wealth creation is one of the objectives of every company in the world. Through the analysis it is possible to set bench marks to measure, performance of the companies. In the paper he studied only three listed firms in the education subsector. These are as follows.

1) Centro Escolar University (CEU)

2) Far Eastern University (FEU), and

3) i People, Inc. (Malayan Colleges).

This research paper aims to analyze the financial statements of these three firms. The period of analysis 2009, 2010, and 2011.The ratios used are liquidity ratios, activity ratios, leverage ratios, profitability ratios, and market value ratios. Researcher's conclusion is, first rank is FEU (44 points). It is most financially healthy. Second is Malayan (40 points), and the third is CEU (36 points).

2.1(6) Rohit Bansal, Assistant Professor, Rajiv Gandhi Institute of Petroleum, (2014) studied finance ratios of banks. Finance ratios have ability to show financial performance of any business. They can also predict the future performance of the companies. According to researchers finding Federal Bank is most stable Bank in comparison to other banks under study for a period of 2011 to 2014 on the basis of

assets turn over ration. The asset turnover ratio represents the effective use of total assets to generate revenue. Other ratios are also in favour of the Federal Bank.

2.1(7) Dr.A.Ramya, Dr.S.Kavitha, Sankara College of Science and Commerce, (2017), used ratio analysis as a tool to study the efficiency and performance of a company and its management. Ratio analysis helps managers to manage to economize their finance. The study observed that Maruti have better strategic position in management of finance ratios in comparison to its competitor. It has secured top position in 1) Liquidity analysis, 2) In profitability analysis in relation to sales and in relation to investment, 3) Efficiency analysis, 4) In leverage analysis, 5) In market valuation. Tata on other hand secured second rank in all the respective analysis.

2.1(8) Gatumu Peter Nyagah, (2015), studied working capital management of 64 companies listed in Nairobi securities exchanges. The period of study is 2011 to 2014. Researcher observed that there exist inverse and insignificant relationship between share returns and average collection period. Working capital management is management of current liabilities and assets. The management is important because company is able to pay all its short term obligations in time so that there is no default on payment. The researcher also studied the relationship between share returns and average payment period. Share returns and cash conversion cycle.The relationship is positive but insignificant. It can therefore be concluded that working capital management has an effect on share returns, but the effect is not significant as only a small portion of changes in share returns is a result of changes in working capital management variables. Studied concluded that company should focus on alternate ways of increasing share returns. This implies that share returns are significantly affected by other factors apart from working capital management.

2.1(9) Muia Vincent Makau and others Security Exchange, Kenya Muia Vincent Makau and others Stephen School of business, Technical

University of Mombasa, (2017)studied management of working capital is crucial for manufacturing company. Working capital is having impact on liquidity and profitability of the company. They observedthat manufacturing companies requires more working capital. There for working capital management will have significant impact on performance of the company. In this research researcher observed inverse correlation between return on asset and average collection period and leverage. The period of study was 2011 to 2015.

2.1(10) HalimahtonBorhan, and others Faculty of Business Management, UniversitiTeknologi, Malaysia, (2014), studied finance ratios and its impact on financial performance of the company. They studied one chemical company. Such studies are useful at the time of taking decision such as merger and amalgamation. Such studies were also undertaken in India post 1991. Such studies helped Indian companies to find foreign partner and become global. The study have shown that 1) Current ratio (CR), 2) Quick ratio (QR), 3) Debt ratio (DR) and 4) Net profit margin (NPM) have a positive relationship. Debt equity ratio (DTER) and operating profit margin (OPM) have aninverse relationship with the company's financial performance. CR, DR and NPM show the highest significant impact on the company's performance.

2.1(11) Stanley Fischer Department of Economics, Massachusetts Institute of Technology, (1993) studied the role of macroeconomic factors in economic growth. Stable macroeconomic environment is good for economic growth. It means government should keep the macroeconomic policies in place such as monetary policy, fiscal policy etc. In the research paper he has shown that growth is inversely related to macro economic factors such as inflation, large budget deficits, and distorted foreign exchange markets. Supplementary evidence suggests that the causation runs from macroeconomic policy to growth. High inflation in the economy reduces growth due to less investment and productivity growth. More budget deficits will also reduce capital accumulation growth and productivity growth. It means government

must keep budget deficit low, and also observed that high inflation is not consistent with sustained growth. Examination of exceptional cases shows that while low inflation and small deficits are not necessary for high growth even over long periods

2.1(12) F. Samiloglu and K. Demirgunes, (2008) studied working capital managementTurkish manufacturing firms. The period of study was 1998 to 2007. Researcher observed that for the mentioned sample and period, accounts receivables period, inventory period and leverage significantly and negatively affect profitability. They also observed that firm growth (in sales) significantly and positively related to profitability. They also concluded that cash conversion cycle, size and fixed financial assets have no statistically significant effects on firm profitability They further observed that fixed financial assets and cash conversion cycle does not have significant relationship with profitability.

2.1(13) Bernadette M. RufKrishnamurty and others, (2001), studied relationship between corporate Social Performance and financial performance. All modern business must meet the demand of all state holders of the company. These stake holders are internal, external and environmental groups. Different research has produced conflicting results in relationship to this subject. In the research paper Relationship between Change in Corporate Social Performance and Financial Performance, it is observed that shareholders financially benefit when management meets the demands of multiple stakeholders. Specifically, change in corporate social performance was directly related to growth in sales for the current and the next year. It means that there are short-term benefits from improving corporate social performance. Return on sales was significantly positively related to change in CSP for the third financial period. It indicates that long-term financial benefits may exist when corporate social performance is improved.

2.1(14) Laura Serghiescua ,Viorela-Ligia Văidean, (2014), studied Determinant factors of the capital structure of a firm. Capital structure of a company depends upon several factors. Here capital structure includes long term and short term capital. Capital structure depends upon internal factors which are company specific and external factors which are common for all companies. Five factors are considered for study and researcher observed that profitability and liquidity ratios are negatively affecting the total debt ratio of Romanian companies. The tangibility of assets is also having a negative impact on leverage. This finding is strengthening the findings of previous empirical studies. There is positive relationship between the sizes of a company and its asset with leverage.

2.1(15) Dr Rakesh Mohan, Deputy Governor of the Reserve Bank of India, at the Conference organised by the Institute of Economic Growth, New Delhi, (2008),in the Keynote address stated, the emerging markets including India did not much suffered during global crises because growth of these economies are determined by internal factors such as domestic saving and investment, reformed in the financial sector etc. In short Indian economy was resilient to 2008 crises because of internal economic strengths which he mentioned.

2.1(16) Ross Levine, University of California, Berkeleyin the article (1997), “Financial Development and Economic Growth”, stated that Some economist feels that financial system plays crucial role while some do not recognise it. However according to him there is strong positive link between the functioning of the financial system and long-run economic growth. There are adequate studies to support his views. The studies were made at firm-level, industry-level, individual country level, and broad cross country comparisons. However, it difficult to conclude that the financial system automatically responds to industrialization and economic activity. Researcher believes that one cannot have a sufficient understanding of long run economic growth without understanding functioning and the evolution of financial system. No doubt development and architecture of financial system

also depends upon non financial development, policies, communication, technology etc.

2.1(17) Foo Nin Ho Hui-Ming Deanna Wang Scott J. Vitell, (2012) observed that corporate social performance appear to be linked to national culture, geographic region, and level of economic development. . European companies overall perform much better than North American companies where as Asian companies tend to lag behind their European and North American counterparts, but still ahead of developing countries with regard to average corporate social performance score. Asian companies tend to lag their European and North American counterparts, but still ahead of developing countries. This seems to be consistent with other researchers who have found that European countries have higher awareness corporate social performance and perform better on corporate social performance than those from other continents. This seems to be consistent with other researchers. There may be a few of reasons for such a difference. They are as follows.

1) National culture expresses a nation's value system which also influences people's attitudes and way of thinking. These attitudes and way of thinking determine how individuals respond to issues as corporate responsibility and performance.

2) European countries are more regulated while the United States follow self-regulation.

2.1(18) Mari Tanaka and others, (2018), studied linkage between expectations and outcome. Researcher made four observations.

1) Firms GDP forecasts are positively associated with their input choices, such as investment and employment, as well as output.

2) Forecast accuracy is strongly related to profitability. A higher forecast error (of either sign) significantly predicts lower profits.

3) Researcher find that measured productivity is negatively associated with excessively optimistic forecasts while no effect was found for excessively pessimistic forecasts. For all of these results, researcher found the strongest effects for firms whose performance is more sensitive to the state of the business cycle.

4) Finally, they find that larger and more cyclically sensitive firms have the most accurate forecasts, presumably because their returns from accuracy are largest. They also see that more productive, older, and bank owned firms tend to be more accurate, which suggesting that

a) Experience

b) Management ability

c) Governance

Play an important role in forecast accuracy. It means animal spirit is playing an important role in the performance of a firm.

2.1(19) Jordan Ali Matar1 and Bilal Mohammad Eneizan, (2018), studied the financial performance of the manufacturing companies in Jordan. The period of study is 2005 to 15. They collected data from financial statements of the firms.

Researcher observed that the variables liquidity, profitability, and revenues are directly related with the return on assets (ROA). The variables of leverage and firm size are negatively related. The regression results show that there exist significant relationship between financial performance and all variables. The findings are very important for policy maker, such as banks, investors, and other stakeholders.

2.1(20) Kyungbok Kim and Sang-Myung Lee, (2018), concluded that both financial return for companies and economic development is positively related to sustainable investment. They studied Asia pacific and North America region. Besides, they found evidence that

sustainable investment impacts economic development. They studied sustainability, corporate performance and economic development.

2.1(21)K.Prabhakaran& P. Karthika, (2018) studied the impact of oil prices, macroeconomic variables on bank profitability. They studied Bank Muscat, Sultanate of Oman. The objective of the bank is to earn profit. The major business of the nation is production and export of crude oil. Profitability of the bank depends upon crude oil prices in the international market. This research concluded that the banking profitability is affected by several numerous internal and external variables. Internal factors confined to each bank. The analysis is made by using data of the Bank Muscat from 2010 to 2016. The result concludes that the change in oil price influence the profitability of the Bank Muscat. The direction and effect of inflation and interest rate on the performance of bank cannot be ascertained. Empirical findings show that the bank specific factors and macroeconomic factors significantly affect profitability of the bank.

2.1(22) Kamel Si Mohammed, AbderrezzakBenhabiband others, (2015) have observed that there are short run dynamic cross section relationships between,

1) oil prices and macroeconomic variables such as growth rate and consumer price index,

2) Oil prices and money market rate

3) Market capitalization and oil prices.

In the long run, consumer price index and market stock exhibit a co integration relationship with oil prices. Co integration relationships were not established between oil price variations, monetary policy and growth rate.

2.1(23) Laurent Ferrara Clément Marsilliy, (2012), evaluates the predictive power of some major financial variables to anticipate GDP growth in euro area countries during a specific period. The variables

are stock prices, oil prices. The researcher used MIDAS-based modelling approach. Results show that, overall, stock prices help to improve the accuracy of GDP forecasts than standard opinion survey variable. The oil prices and term spread appear to be less informative. In short stock prices are able to forecast GDP growth better.

2.1(24)AkindeeleJamiu and others (2015) studied working capital management of twenty-five Nigerian companies. The period of study was 2005-2011.Multiple regression analysis was made. They observed the negative relationship between working capital management and firm's profitability.

2.1(25) Robert O Edmister studied ratio analysis and business failure. His paper "Test of financial ratio analysis for small business failure prediction" was published in "Journal of financial quantitative analysis" in the year 1972. Nineteen financial ratios were studied. Five prevailing methods were used for analysis. Ratios predict the small business failure. The problem in this research paper under study is to classify business as successful business or not successful business. The data for the research is provided by "small business administration and Robert Morris Association". All loans in the study are at least three years old. This paper high lights the importance of financial ratios in the effective management of business.

2(26) Marc Deloof from university of Antwerp studied working capital Management and its impact on profitability of companies in Belgian. The firms studied are non financial firm. The period of study was 1992 to 1996. Working capital management is crucial for profitability of firms. Effective working capital management means creating more value for the shareholders. The sample size is large. The number of firms studied is 1069.

The result shows that by reducing the accounts receivable days and inventory profitability can be enhanced. It results into companies **are**

able to pay their dues in time. In other words if firm is less profitable they are required to wait for longer period to pay their bills. If bills are paid in time to vendors it can help the companies by way of getting inputs of a better quality. If the bills of the vendors are paid in time, vendors are giving discount to companies which also help companies to increase their profitability. It is a common practice in Belgian to offer discounts when bills are paid at an early date. Samples in the research are taken from the data provided by "National Bank of Belgian" The profitability measures used in the paper are gross operating income as well as net operating income. Working capital management is measured by cash conversion cycle. Pearson coefficient is used to study the relationship. Regression analysis is used for study.

2(27)Ratio analysis history is systematically studied by James O Horrigan. He published it in "American Accounting Association" in the year 1968. The origin of the ratios goes back to year 300 B. C. However ratio analysis as a tool for financial analysis is of a very recent origin.

More use of ratio analysis started as firm's management started by professional managers. Earlier all firms were manage by the promoters or owners. Funds to run the business were later provided by banks or financial institutions. Hence financial institutions also started using finance ratios at the time of lending money. Credibility of the borrowers was judge by the lenders on the basis of these ratios. This started as early as 1870. However it did not practice widely until 1890. As more data about cash flows was available use of ratios for analysis was made from 1890 onwards. After the first world war large no of ratios were conceived. The most famous is 2:1 current ratio. When inter firm analysis started relative ratios were formulated. In 1913 federal income tax code was made. To calculate the tax liability of the organisation the financial statement became essential and its content quality went on increasing.

Every organisations interest in ratios increased post 1920 and hence its study in the finance subjects. Even more ratios were developed. Ratio index was formed. Ratio index is the weighted average of different ratios. Ratios became the indicators of the performance of a company. In early 1945 their study continued. Ratios were also used to examine economic activity. Later ratios were used to predict firm's failure. Ratio will continue to play important role in financial and economic analysis of small as well as large firm.

1(28)Frederickd s Choi and others in their paper "Analyzing foreign financial statements: use and misuse" studied how the ratios are often misuse at the time of making investment decision. Companies are raising funds in large volume for investment from anywhere in the world based on funds availability. Different countries have different ways of reporting their financial results. Therefore conclusions about financial of one company in one country may not be applicable in the other country as other country follow different form of reporting. The objective of the paper is to create awareness among investor is USA about risk involved in investing money in stocks of companies outside America listed in American stock exchange. The author studied Korian and Japanis companies to show differences in the ratio are because of differences in the accounting practices. Companies in Asia are depending more on debt due to tax concession as they are not required to pay tax on interest they pay to lender being cost of running a business. In Koria banks are giving subsided funding as it is difficult to raise money from capital market as capital market is not that developed. Because of environmental factors and tax laws ratios in Koria, Japan and USA are bound to be different. Hence it is required to be more careful at the time of investing money in such company though they might be listed on stock exchanges in USA.

1(29) R. H. Berry published research paper in “Accounting and Business research” having title “Regression analysis v ratios” This paper tries to answer basic questions about financial statement and ratio analysis. The questions answered are can we generalised the finding of one industry to other industries and even for different periods of time. The companies studied are from UK. Fifty company’s data was studied. The data was taken from “Extel financials Ltd”. Regression analysis was made. Researcher concluded that though ratio analysis is used as a tool for analysis and though it is supported by literature should be use carefully as it may not always provide correct answers to the problems.

1(30) Edward I Aitman published his research paper titled “Financial ratios, discriminate analysis and the prediction of corporate bankruptcy in “Journal of finance” in the year 1968. Traditionally ratio analysis was used to study and understand the performance of the company. It is even today consider as an important tool to judge the financial performance of a company. Recently people also started using statistical technique to fore cast and study the financial performance of the company. Does it mean that ratio analysis have become irrelevant.

This paper first studies the ratio analysis technique followed by the study of limitation of the said technique. The researcher introduces and study statistical technique. Data of 66 firms is used to establish the relationship.

Reliability of statistical technique is also studied. Firms are classified as bankrupt and non bankrupt firm. Different ratios are considered to be independent variable. The conclusion is that statistical technique model is able to predict the bankruptcy in advance i.e. before five years of actually company becoming bankrupt. The research is certainly

helpful to bankers at the time of extending credit, investors for investing money and to other stake holders of the company.

1(31) In the research paper “Financial statement analysis: A data development analysis approach” is published by E.H.Feroz. It is published in “The journal of operational research society” It was published in the year 2003. The papers states that ratios are traditional tool of financial analysis of a company. Many a time’s two ratios are giving conflicting outcome, the tool is under criticism. The tool is also criticised for bias. Selected ratios are used by either company or financial institutions for achievement of their hidden objective. The researcher has shown that data development analysis is a better tool to study performance of a company than the traditional tool of ratios. The researcher studied oil and gas industry. The researcher used several liquidity ratios along with performance ratios and solvency ratios. Data development analysis is making incremental analysis over traditional ratio analysis. The data of twenty years is studied. The researcher is of the view that in days to come more software will be developed for data evaluation method and may become popular among the analyst.

1(32) Research article “Economic growth, Innovations, Institutions and great Enrichment” is published by Aki Tomozawa, Li Zhao, Genevieve, David Ahlstrom journal Asia pacific journals of Management. The paper was published in 20019. Several factors responsible for economic take off during the period of early 1800 were identified. The area of study was Europe, North America. Asia was also covered letter. General understanding is that economic growth depends upon capital accumulation, better culture, trade, foreign investment. Other factors are good qualitative geography, colonialism established by developed country. Rich country exploited poor country. Good fortune of rich countries was also responsible for their progress.

No doubt above factors contribute to economic progress but the credit of big jump in the progress (expressed by way of 3000% to 10,000% increase in the income of the people and reduction in poverty by three quarter. The progress can also be seen by way of enrichment which can be seen by way of increase in middle class and many poor having access to many goods and services. Such as safe drinking water and food, A.Cs, telephone calls to anywhere in the world, medical facilities.) cannot be given.

This paper observed that wealth generation and progress made by the economies are primarily because of what they did in their economies or what they will continue to do at home rather than the above mentioned factors. What they did in their home country includes following factors.

a) Encouragement to innovation.

b) Spread of innovation.

c) Effective managerial technique.

d) New venture creation.

e) Market development.

f) Competitiveness.

g) Poverty reduction etc.

This research recognise the importance of conventional factors responsible for progress but goes one step ahead and indentified above other factors and give more credit to them for huge jump in progress.

1(33) The research paper “Linking Entrepreneurship and Economic growth” is published by Sander Wennekers and Roy Thurik. The paper was published in the year 2014. It was published in Small Business Economics Vol.13.

The paper takes historical overview of economic progress made by studying macro economics post second world war. The paper takes bird eye view of several factors contributed to growth as well as several difficulties economies faced in the process of bring economic growth such as oil crises of 1973, stagflation and high unemployment of 1980s etc. Economic growth for every country is important because it can provide jobs to unemployed people.

Researcher is taking note of development of small business in Europe. According to report employment provided by small business in Europe is more than that of employment provided by large business for a period 19888 to 1999. Employment provided by fortune 500 companies declined from 20% to eight and half %. Paper focuses upon reasons for it.

The paper in the end concluded that entrepreneurship matter. According to researcher it plays an important role in the process of economic growth and development. Due to information science and technology along with globalization there is a structural change in the economies. It requires substantial change in the reallocation of resources. This has created the demand for entrepreneurship. More start-ups have come and will also come in future. Some will succeed some will failed but they will keep process of growth moving.

1(34) Electricity is very crucial man made resource required for economic growth measure by studying the growth of per capita Gross Domestic Product. Research paper "Electricity consumption and economic growth in India" studies casual relationship if any that exist between per capita consumption of electricity and per capita Gross Domestic Product. The paper was published in the year 2000. Time series data is studied between the year 1950 and 1996. Granger Causality was used to study relationship.

India is second largest populated country in the world. Demand for power was growing continuously. Production of power was also growing. Economic growth for about fifty years in the second half of twentieth century was taking place at a rate of less than five percent per annum.

This article examines the Granger Causality between electricity consumption and economic growth using time series data for the above stated time span. The results show that there exists Granger Causality relationship. It means growth of per capita gross domestic product is the outcome of more electricity consumption per head.

The paper highlights the importance of electricity industry in the process of economic growth of a nation. It is possible that as income increases people might substitute electricity to alternate conventional sources of energy such as fire wood coal etc. In agriculture also farmers might have move to electric pumps from diesel pumps.

Government is focusing on increasing the production and supply of power. Government is also aware of the problems of power sector such as transmission loss and trying to resolve it.

1(35) The economic growth post liberalization is attributed to changed policies by the Government of India. The entire approach of organising economy changed from socialist orientation to market driven economy. Economy and business was liberated from licence and permit raj and removing unwanted restriction of business like MRTP. This is the understanding of many scholars in India. However the research article "politics of economic growth in India" written by Atul kohali is giving different perspective. The author is accepting that the economy was growing at a rate of 6% on an averaged from 1990 to 2005 but express his views that the growth is not because of new policies but because of different reasons. Author says that high growth is the result of an interventionist state working closely with business group aiming at

growth promotion. He is of the view that it is wrong to assume that pro business government is pro market government. It is very much important to make distinction between pro market government and pro business government. Pro market government allow market to take important decisions of resource allocation where as pro business government supports established producers. Growth supporting states ensured high growth by developing industry and commerce through state intervention. Similarly state ensures that there will be more domestic demand and in the absence of it they promoted export. It means there were some changes in the government policies. Economic growth took place because of increase in productivity and increase in investment public and private which started from 1980. In support of his argument he provides data. More growth since 1980 is due to building strong foundation of the economy, technology, management, entrepreneurship. It can also be attributed to adequate taxes, logistics and robust domestic demand.

**2. B: Research Gap:**

After making literature review the research gap can be easily identified. The ample studies are seen with respect to finance ratios of some companies. The period of analysis was also short. Finance ratios of industries ae not studied. Similarly, there is no some major policy shift happened before or after the studies were made. No reference was made in any of the study related to some major policy shift or event taken place. It can also be seen that impact of significant macroeconomic variables on the financial performance of industries are not studied. Taking into consideration the above fact the present study is concentrating on the study of GDP growth select finance ratios and economic variables on financial health of selected industrial sector w.r.t. post liberalization period.

# Chapter III

## Research methodology, Design, Hypothesis, and Data

### 3. A: Research Method:

Once the research problem is spelt and objectives are specified, next step is to decide the way it will be executed. In other words, it tells methods of achieving these objectives in the best possible manner.

Research design is defined as the identification or specification of methods and procedures for collecting the information needed. In other words, it is overall operational pattern or framework of the project. It specifies what information is to be collected. What can be its sources? Which procedure can be adopted? A good research design will ensure that the information obtained is relevant to research question. It will also ensure that it was collected by objective and economical procedure.

Research design is the framework that is created to seek answer to research question. Whereas the research method is the technique to collect the information required.

There are several research methods. They are classified as qualitative and quantitative. Some of them are as follows.

1) Exploratory research

2) Descriptive research

3) Experimental research

Exploratory research is the simplestas well as unstructured research method. This method is used when the research problem is highly complex and requires further clarity. In this method basic objective is to explore and obtained the clarity.This isflexible method. It makes qualitative investigation.

Descriptive research is more detailed explanation of problem under study. The title of the method is suggesting it. It is less accurate than experimental research design.

Experiment research is generally used to study causality. In this method researcher identifies multiple variables and study their effect on dependent variable.

In this research study a combination of exploratory and experimental research technique is used. The problem under studied is economic growth and financial performance of selected industries being more complex, requires some exploration so that more clarity can be obtained for further accurate research. Economic development and industrial performance go hand in hand. There must be some causal relationship between GDP growth and performance of industries. At the same time some causal relationship may exist between different finance ratios and performance and growth of industries. Therefore, a combination of exploratory research and experimental research technique is used.

To conduct research reliable data is very crucial. Primary data is considered to most reliable as it is collected by researcher himself and is collected exclusively for his own research. Secondary data if collected from reliable sources is considered to reliable. In this research data is collected from reliable sources as stated below.

In this research secondary data is used. This data is collected by government agencies as well as reputed private organization such as CMIE. The data collected by CMIE is reliable and authentic. It is regularly used by research scholar for research. It is mandatory for educational institutions to keep such data base in their library. Many times, it is also used by the government for government policy formulation. The data used is given in the appendix.

To calculate finance ratios such as debt equity ratio, gross profit margin ratio, current ratio and sustainable growth rate, balance sheet,

income expenditure statement and cash flow statement data of industries under study is used compiled by CMIE, Prowess. The data since 1991-92 to 2016 is used as time period under study is post liberalization. Data related to macroeconomic variable is collected form published data published by Central statistical organization, Annual publications such as Hand Book of Statistics on Indian Economy by Reserve Bank of India.

Selected ratios for research are calculated as per the formula in standard text book "Financial Management, Text, problem and Cases", fifth edition, written by M.Y. Khan and P. K. Jain published by McGraw- Hill Companies publication. These formulas are as under.

**Current Ratio:** It is a measure of liquidity. It is a ratio of total current assets to total current liability.[1]

**Debt Equity Ratio:** The relationship between the borrowed fund and owner's capital is a popular measure of long-term financial solvency of the firm. This is shown by debt equity ratio. It is a ratio of long-term debt to Shareholder's equity.[2]

**Profitability ratios related to sales:** Each company should earn enough profit on each rupee of sale. If profit is not earned their will difficulty in meeting operating expenses and no returns will be available to owners.

**Gross Profit Margin Ratio:** It is a ratio of gross profit to sales multiplied by 100[3]

**Growth Ratios:** These ratios suggest the rate at which firm is expected to grow.

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[1]Financial Management Text, Problems and cases The McGraw-Hill companies, Fifth Edition pp 6.5

[2]Financial Management Text, Problems and cases The McGraw-Hill companies, Fifth Edition pp 612

[3]Financial Management Text, Problems and cases The McGraw-Hill companies, Fifth Edition pp 6.19

Sustainable Growth Rate (SGR): It measures the maximum rate of growth using internal and external resources of financing.

SGR = (ROE*b) / 1 – (ROE*b)[4]

In order to study these objectives several hypotheses are formed.

**3. B: Hypotheses are as under.**

Ho1: There is no significant relationship between SGR and Debt equity ratio, Gross profit margin ratio, Liquidity ratio for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization

Ha1.1: There is significant relationship between SGR and Debt equity ratio, Gross profit margin ratio of Electricity industry.

Ha1.2: There is significant relationship between consolidated SGR of four industriesand consolidated Debtequity ratio for four industries

H02: There is no significant relationship between Gross profit margin ratios and Debt equity ratio, Liquidity ratio for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization

Ha2.1 There is a significant relationship between Gross profit Margin Ratio and liquidity ratio for steel Industry.

Ha2.2: There is significant relationship between consolidated Gross profit margin ratio and Debt Equity Ratio of Cement Industry

Ha2.3: There is significant relationship between consolidated Gross profit margin ratio and Debt Equity Ratio of Auto Industry.

H03: There is no significant relationship between GDP growth and macroeconomic variables post liberalization.

[4]Financial Management Text, Problems and cases The McGraw-Hill companies, Fifth Edition pp 6.36

Ha3.1: There exist a significant relationship between GDP growth and Fiscal deficit, Call money rate.

H04: There is no significant relationship between fiscal deficit and Debt equity ratio, Gross profit margin ratio and Liquidity ratio, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha4.1: There exists a significant relationship between Fiscal deficit and Debt Equity ratio and SGR for steel industry.

Ha4.2: There exists a significant relationship between Fiscal deficit and Debt Equity ratio, SGR, Gross profit margin ratio, liquidity ratio for Electricity industry.

Ha4.3: There exists a significant relationship between Fiscal deficit and Debt Equity ratio, SGR, Gross profit margin ratio, liquidity ratio for Cement industry.

Ha4.4: There exists a significant relationship between Fiscal deficit and consolidated Debt Equity ratio, SGR, liquidity ratio for all industry.

H05: There is a no significant relationship between call money rate and Debt equity ratio, Gross profit margin ratio and Liquidity ratio, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha5.1: There is a significant relationship between call money rate and debt equity ratio, Liquidity ratio for Cement industries post liberalization.

H06: There is no significant relationship between SGRfor Steel, Auto, Electricity, Cement and consolidated data of all four industries and GDP growth

Ha6.1: There exist a significant relationship between SGR of auto industry and GDP growth.

H07: There is no significant relationship between gross profit margin ratio of Steel, Cement, Electricity, Auto, and aggregate gross profit margin of all four Industries and fiscal deficit and call money rate.

Ha7.1: There exist a significant relationship between call money rate and gross profit margin ratio of Electricity Industry.

Ha7.2: There exist a significant relationship between call money rate and gross profit margin ratio of Cement Industry.

**3.2. Calculation of Gross profit margin ratio:** The gross profit margin is equal to sales minus cost of sales. The sales data is taken from income and expenditure statement. The cost of sales is arrived at by addition purchase of raw materials, stores, and spares and purchased of finished goods less change in the stock. This data is taken from income and expenditure statement of the steel industry.

### 3.2.1. Gross profit margin of steel:

| | | Cost of sale | | | | |
|---|---|---|---|---|---|---|
| Year | Sales | Raw materials, stores & spares | Purchase of finished goods I | Change in stock | Gross profit margin | Gross profit ratio |
| 1990-91 | 155336.2 | 72336.07 | 72336.07 | 2924.25 | 13588.26 | 8.747648 |
| 1991-92 | 190358.1 | 90149.16 | 90149.16 | 8765.68 | 18825.42 | 9.889479 |
| 1992-93 | 122005.4 | 61536.83 | 61536.83 | 3958.27 | 2889.99 | 2.36874 |
| 1993-94 | 135643.1 | 62814.68 | 62814.68 | -1985 | 8028.7 | 5.918991 |
| 1994-95 | 182987.6 | 86582.28 | 86582.28 | 4744.87 | 14567.93 | 7.961156 |
| 1995-96 | 234284.2 | 109076 | 109076 | 3740.72 | 19872.92 | 8.482397 |
| 1996-97 | 261670.4 | 119064.2 | 119064.2 | 3977.05 | 27519.01 | 10.51667 |
| 1997-98 | 417850.4 | 186306.9 | 186306.9 | 12043.75 | 57280.28 | 13.70832 |
| 1998-99 | 418141.9 | 185328.2 | 185328.2 | -8311.02 | 39174.39 | 9.368684 |
| 1999-00 | 465149.9 | 196235.3 | 196235.3 | -20788.6 | 51890.74 | 11.1557 |
| 2000-01 | 515388.1 | 219449.3 | 219449.3 | 1199.98 | 77689.42 | 15.07396 |
| 2001-02 | 532695 | 244717.8 | 244717.8 | -5187.12 | 38072.23 | 7.147097 |
| 2002-03 | 684882.4 | 297187 | 297187 | -4431.63 | 86076.72 | 12.5681 |
| 2003-04 | 866491.9 | 380523.4 | 380523.4 | -746.84 | 104698.3 | 12.083 |
| 2004-05 | 1215149 | 558967.4 | 558967.4 | 19727.45 | 116941.6 | 9.623641 |
| 2005-06 | 1260246 | 599232.4 | 599232.4 | 19976.93 | 81758.33 | 6.487488 |
| 2006-07 | 1618899 | 780908.4 | 780908.4 | 24378.78 | 81460.44 | 5.031844 |
| 2007-08 | 1946322 | 931853.7 | 931853.7 | 28521.97 | 111137 | 5.710104 |
| 2008-09 | 2280866 | 1204678 | 1204678 | 25721.86 | -102767 | -4.50561 |
| 2009-10 | 2167364 | 1154938 | 1154938 | 3019.59 | -139494 | -6.43609 |
| 2010-11 | 2578306 | 1434673 | 1434673 | 78429.5 | -212609 | -8.24609 |
| 2011-12 | 3137997 | 1764651 | 1764651 | 18487.98 | -372816 | -11.8807 |
| 2012-13 | 3009728 | 1723742 | 1723742 | 51675.27 | -386080 | -12.8277 |
| 2013-14 | 3685342 | 1997855 | 1997855 | -9470.47 | -319838 | -8.67865 |
| 2014-15 | 3814417 | 2095213 | 2095213 | 63451.1 | -312559 | -8.19415 |
| 2015-16 | 3256295 | 1803599 | 1803599 | -45852.6 | -396755 | -12.1843 |
| 2016-17 | 3712888 | 2043443 | 2043443 | 51001.84 | -322996 | -8.69932 |
| 2017-18 | 2477072 | 1294314 | 1294314 | -45820.7 | -157376 | -6.3533 |

Source: CMIE

### 3.2.2. Gross profit margin ratio of Electricity:

| | | Cost of sales | | | | |
|---|---|---|---|---|---|---|
| Year | Sales | Raw material | Purchased of finished good | change in stock | Gross profit | Gross profit margin ratio |
| 1990-91 | 87327.6 | 27782.1 | 18454.3 | 95.6 | 41186.8 | 47.16355 |
| 1991-92 | 114143.3 | 37817 | 21138 | 121.1 | 55309.4 | 48.45611 |
| 1992-93 | 148442.1 | 49685 | 24986.7 | 144.1 | 73914.5 | 49.79349 |
| 1993-94 | 180600.3 | 61471.2 | 31047.3 | 274.9 | 88356.7 | 48.92389 |
| 1994-95 | 221051.7 | 70473.1 | 33051 | 44.6 | 117572.2 | 53.18765 |
| 1995-96 | 270168.3 | 82149.27 | 34247 | 706.6 | 154478.7 | 57.17867 |
| 1996-97 | 344833.1 | 111010.3 | 57672.4 | 892.8 | 177043.2 | 51.34171 |
| 1997-98 | 388327.1 | 127185.1 | 60696.6 | 520.4 | 200965.8 | 51.75168 |
| 1998-99 | 424978.2 | 135383.4 | 52445.4 | 4501.5 | 241650.9 | 56.86195 |
| 1999-00 | 482938.1 | 155440.7 | 51930.8 | 916.6 | 276483.2 | 57.25024 |
| 2000-01 | 481115.5 | 175820.5 | 25089.6 | 2199.9 | 282405.3 | 58.69802 |
| 2001-02 | 707266.4 | 209119.6 | 181816.2 | -199.5 | 316131.1 | 44.69759 |
| 2002-03 | 1148271 | 300031.9 | 390435.6 | -10942.8 | 446860.7 | 38.91596 |
| 2003-04 | 1265935 | 352923.6 | 368458.6 | -910.63 | 543642.6 | 42.94394 |
| 2004-05 | 1444056 | 428589.5 | 442607.7 | 393.2 | 573251.9 | 39.69735 |
| 2005-06 | 1951020 | 523442 | 774089.7 | 1571.93 | 655060.6 | 33.57528 |
| 2006-07 | 2302751 | 616304.1 | 932272.7 | 446.2 | 754620.6 | 32.77039 |
| 2007-08 | 2657783 | 708248.5 | 1067767 | 2761.37 | 884528.5 | 33.28069 |
| 2008-09 | 3320524 | 950456.4 | 1394694 | -81.93 | 975291.7 | 29.37162 |
| 2009-10 | 3780624 | 992484.9 | 1607215 | 327.44 | 1181252 | 31.2449 |
| 2010-11 | 4121511 | 1138104 | 1651868 | 1171.1 | 1332711 | 32.33548 |
| 2011-12 | 5137074 | 1379368 | 2210179 | 727.6 | 1548255 | 30.13885 |
| 2012-13 | 5943374 | 1554968 | 2490436 | 159.1 | 1898129 | 31.9369 |
| 2013-14 | 6732713 | 1766097 | 2705654 | 4029.2 | 2264991 | 33.64158 |
| 2014-15 | 7144282 | 1792823 | 2930786 | -1677 | 2418996 | 33.85919 |
| 2015-16 | 7719401 | 1939997 | 2981328 | -519.1 | 2797558 | 36.24061 |
| 2016-17 | 7708444 | 1961545 | 2854757 | -868.1 | 2891273 | 37.50787 |
| 2017-18 | 2008317 | 692042 | 232814.2 | 609.9 | 1084071 | 53.97907 |

Source: CMIE

### 3.2.3. Gross profit margin Cement Industry:

| | | Cost of sale | | | | |
|---|---|---|---|---|---|---|
| Year | Sales | Raw material | Purchased of finished good | change in stock | Gross profit | Gross profit margin ratio |
| 1990-91 | 51821.42 | 8505.58 | 630.9 | 417.88 | 43102.82 | 83.17568 |
| 1991-92 | 63103.91 | 9595.01 | 1002.52 | 1098.97 | 53605.35 | 84.94775 |
| 1992-93 | 63728.01 | 9456.89 | 1197.92 | 600.34 | 53673.54 | 84.22284 |
| 1993-94 | 72749.53 | 10687.93 | 2122.3 | -470.03 | 59469.27 | 81.74523 |
| 1994-95 | 92377.97 | 12427.57 | 2857.23 | -167.58 | 76925.59 | 83.27266 |
| 1995-96 | 109709.7 | 14595.73 | 1495.77 | 1229.03 | 94847.21 | 86.45291 |
| 1996-97 | 123682.5 | 17496.19 | 1755.57 | 1245.61 | 105676.3 | 85.44163 |
| 1997-98 | 126474.1 | 16979.06 | 1903.53 | 920.81 | 108512.3 | 85.79805 |
| 1998-99 | 131825.8 | 17112.42 | 1918.29 | -786.23 | 112008.8 | 84.96732 |
| 1999-00 | 148934.8 | 22391.62 | 2300.7 | 1602.47 | 125844.9 | 84.49667 |
| 2000-01 | 165958.4 | 24001.12 | 2674 | 15.94 | 139299.3 | 83.93623 |
| 2001-02 | 180930.9 | 27845.7 | 2413.23 | -416.4 | 150255.5 | 83.04583 |
| 2002-03 | 176650 | 26330.57 | 2354.8 | -600.37 | 147364.3 | 83.4216 |
| 2003-04 | 230105 | 34548.27 | 3737.97 | 329.77 | 192148.5 | 83.50472 |
| 2004-05 | 270141.8 | 40222.25 | 6543.18 | 1111.29 | 224487.6 | 83.09993 |
| 2005-06 | 356334.8 | 53333.87 | 5717.6 | 884.5 | 298167.8 | 83.67631 |
| 2006-07 | 607287.1 | 97667.22 | 8098.4 | 1968.87 | 503490.3 | 82.90812 |
| 2007-08 | 596330.5 | 86967.43 | 3961.73 | 5448.31 | 510849.6 | 85.66552 |
| 2008-09 | 790351.4 | 137459.6 | 7464.57 | 3662.71 | 649089.9 | 82.12675 |
| 2009-10 | 711911.3 | 125679.1 | 5145.01 | 4554.22 | 585641.4 | 82.26326 |
| 2010-11 | 792551.9 | 133567.2 | 7353.3 | 7440.36 | 659071.8 | 83.15819 |
| 2011-12 | 1057440 | 165347.3 | 17554.94 | -473.52 | 874064.2 | 82.65852 |
| 2012-13 | 1239732 | 197254 | 17761.6 | 11730.15 | 1036446 | 83.60246 |
| 2013-14 | 1173964 | 187465.5 | 19838.2 | -3507.87 | 963152.4 | 82.04276 |
| 2014-15 | 1506044 | 251509.7 | 27015.3 | 8374.26 | 1235893 | 82.06223 |
| 2015-16 | 1534265 | 250519.8 | 28326.23 | -5172.85 | 1250246 | 81.48827 |
| 2016-17 | 1548248 | 253109.8 | 24746.2 | -7138.4 | 1263254 | 81.59246 |
| 2017-18 | 1582141 | 261491.2 | 26396.1 | -3920.3 | 1290334 | 81.55616 |

Source: CMIE

### 3.2.4. Gross profit margin ratio Auto Industry:

| | | Cost of sale | | | | |
|---|---|---|---|---|---|---|
| Year | Sales | Raw material | Purchased of finished good | change in stock | Gross profit | Gross profit margin ratio |
| 1990-91 | 92804.4 | 52188.2 | 1860.4 | 1917.7 | 40673.5 | 43.82712 |
| 1991-92 | 102356.7 | 57913.77 | 2095.77 | 1574.57 | 43921.7 | 42.91044 |
| 1992-93 | 104168.1 | 61131.47 | 2506.1 | 3005.03 | 43535.56 | 41.79356 |
| 1993-94 | 148920.9 | 82480.27 | 2883 | -2923.6 | 60634.04 | 40.7156 |
| 1994-95 | 202375.7 | 114480.9 | 4508.63 | -121.63 | 83264.59 | 41.14357 |
| 1995-96 | 288860.8 | 166826.4 | 6091.9 | 3334.28 | 119276.8 | 41.29213 |
| 1996-97 | 345322.3 | 198327.9 | 8454.3 | 4195.01 | 142735.1 | 41.33387 |
| 1997-98 | 324340.2 | 178590.8 | 6451.7 | 1865.3 | 141163 | 43.52312 |
| 1998-99 | 331115.7 | 181549.4 | 6471.8 | -2767.07 | 140327.5 | 42.38019 |
| 1999-00 | 421462.7 | 239141.3 | 7501.9 | 2967.97 | 177787.5 | 42.18344 |
| 2000-01 | 415251.3 | 250357.5 | 8340.5 | 1205.47 | 157758.7 | 37.99115 |
| 2001-02 | 461850.1 | 267540.7 | 9546.87 | 1022.57 | 185785.2 | 40.22629 |
| 2002-03 | 538703.2 | 306337.3 | 13673 | 2101.9 | 220794.8 | 40.98635 |
| 2003-04 | 698793 | 397334.9 | 20287.08 | -2094.96 | 279076 | 39.93687 |
| 2004-05 | 878792.2 | 524483.1 | 27263.72 | 6142.95 | 333188.3 | 37.91435 |
| 2005-06 | 1006323 | 604371.5 | 34463.75 | 11897.91 | 379385.4 | 37.70017 |
| 2006-07 | 1249827 | 763418.8 | 39177.84 | 3635.9 | 450866.1 | 36.07428 |
| 2007-08 | 1269677 | 784974.8 | 41645.75 | 10917.99 | 453974.6 | 35.75512 |
| 2008-09 | 1357809 | 877930.5 | 54910.73 | -3242.45 | 421724.9 | 31.05923 |
| 2009-10 | 1785168 | 1134367 | 81502.4 | 4769.49 | 574068.1 | 32.15765 |
| 2010-11 | 2344107 | 1493143 | 140992 | 14445 | 724417.3 | 30.90376 |
| 2011-12 | 2368984 | 1565981 | 120072.3 | 24362.47 | 707292.3 | 29.85636 |
| 2012-13 | 2572185 | 1662667 | 137171.9 | 2596.87 | 774943.1 | 30.12781 |
| 2013-14 | 2757265 | 1653839 | 144230.1 | -10455.4 | 948740.9 | 34.40876 |
| 2014-15 | 3816393 | 2285607 | 254807.9 | 15984.8 | 1291964 | 33.853 |
| 2015-16 | 4319968 | 2587940 | 275354.4 | 40239.46 | 1496913 | 34.65101 |
| 2016-17 | 4764779 | 2833949 | 293589.4 | 13358.3 | 1650599 | 34.64167 |
| 2017-18 | 3402971 | 2039142 | 306291.9 | -24714.8 | 1032822 | 30.3506 |

Source: CMIE

### 3.2.5. Consolidated Gross profit margin ratio:

| | | Cost of sale | | | | |
|---|---|---|---|---|---|---|
| Year | Sales | Raw material | Purchased of finished good | change in stock | Gross profit | Gross profit margin ratio |
| 1990-91 | 387289.6 | 160812 | 93281.67 | 5355.43 | 138551.4 | 35.77462 |
| 1991-92 | 469961.9 | 195474.9 | 114385.5 | 11560.32 | 171661.9 | 36.52676 |
| 1992-93 | 438343.6 | 181810.2 | 90227.55 | 7707.74 | 174013.6 | 39.69799 |
| 1993-94 | 537913.8 | 217454.1 | 98867.28 | -5103.73 | 216488.7 | 40.24599 |
| 1994-95 | 698793 | 283963.8 | 126999.1 | 4500.26 | 292330.3 | 41.83361 |
| 1995-96 | 903023.1 | 372647.5 | 150910.7 | 9010.63 | 388475.6 | 43.01945 |
| 1996-97 | 1075508 | 445898.6 | 186946.5 | 10310.47 | 452973.6 | 42.11717 |
| 1997-98 | 1256992 | 509061.9 | 255358.7 | 15350.26 | 507921.4 | 40.40769 |
| 1998-99 | 1306062 | 519373.4 | 246163.7 | -7362.82 | 533161.6 | 40.82209 |
| 1999-00 | 1518485 | 613208.9 | 257968.7 | -15301.5 | 632006.3 | 41.62084 |
| 2000-01 | 1577713 | 669628.5 | 255553.4 | 4621.29 | 657152.7 | 41.65222 |
| 2001-02 | 1882742 | 749223.8 | 438494.1 | -4780.45 | 690244 | 36.66163 |
| 2002-03 | 2548507 | 929886.8 | 703650.4 | -13872.9 | 901096.5 | 35.35782 |
| 2003-04 | 3061325 | 1165330 | 773007 | -3422.66 | 1119565 | 36.57127 |
| 2004-05 | 3808139 | 1552262 | 1035382 | 27374.89 | 1247869 | 32.76849 |
| 2005-06 | 4573924 | 1780380 | 1413503 | 34331.27 | 1414372 | 30.92251 |
| 2006-07 | 5778764 | 2258299 | 1760457 | 30429.75 | 1790437 | 30.98305 |
| 2007-08 | 6470113 | 2512044 | 2045228 | 47649.64 | 1960490 | 30.3007 |
| 2008-09 | 7749550 | 3170524 | 2661747 | 26060.19 | 1943339 | 25.0768 |
| 2009-10 | 8445067 | 3407469 | 2848801 | 12670.74 | 2201468 | 26.06809 |
| 2010-11 | 9836476 | 4199486 | 3234886 | 101486 | 2503590 | 25.4521 |
| 2011-12 | 11701495 | 4875347 | 4112457 | 43104.53 | 2756795 | 23.55934 |
| 2012-13 | 12765019 | 5138631 | 4369111 | 66161.39 | 3323438 | 26.03551 |
| 2013-14 | 14349284 | 5605257 | 4867577 | -19404.5 | 3857046 | 26.87971 |
| 2014-15 | 16281136 | 6425153 | 5307823 | 86133.16 | 4634294 | 28.46419 |
| 2015-16 | 16829929 | 6582056 | 5088607 | -11305.1 | 5147961 | 30.58813 |
| 2016-17 | 17734359 | 7092046 | 5216536 | 56353.64 | 5482130 | 30.91248 |
| 2017-18 | 9470502 | 4286989 | 1859816 | -73845.9 | 3249851 | 34.31551 |

Source: CMIE

### 3.3. Calculation of liquidity ratio and debt equity ratio:

The liquidity ratio is calculated as ratio of current assets to current liability. The current assets and liabilities are taken from balance sheet. It is addition of 1) Cash & bank balance 2) Inventories 3) Trade & bills receivables 4) Other short-term receivables 5) Short term loans & advances 6) Short term investments 7) Assets held for sale and transferShort term liabilities includes 1) Short term borrowings 2) Trade payables 3) Acceptances 4) Current maturities of long term debt & lease 5) Deposits & advances from customers etc 6) Interest accrued but not due 7) Share application money – refundable 8) Other current liabilities 9) Short term provisions.

**Debt Equity Ratio:**

The debt equity is calculated as long-term debt to shareholders fund means equity. The data is taken from balance sheet. Long term debt includes 1) Long term borrowings including current portion 2) From banks 3) From financial institutions 4) From central & state govt 5) Syndicated across banks & institutions 6) Debentures and bonds 7) foreign currency borrowing 8)Loans from promoters, directors & shareholders Loans from promoters, directors & shareholders 9) Inter-corporate loans 10) Deferred credit 11) Interest accrued and due 12) Long term maturities of fin lease obligations 13) Fixed deposits 14) Other borrowings 15) Deferred tax liability 16) Other long term liabilities 17) Long term provisions.

### 3.3.1. Debt equity and liquidity ratio of steel Industry:

| Steel Industry | | | | | | |
|---|---|---|---|---|---|---|
| Year | Total current liability | Total current Asset | Liquidity ratio | Long term Debt | Equity | Debt Equity ratio |
| 1990-91 | 58718.9 | 8753 | 0.149066 | 0 | 70350.9 | 0 |
| 1991-92 | 82808.8 | 13652.2 | 0.164864 | 0 | 98749.6 | 0 |
| 1992-93 | 71921.6 | 11816.3 | 0.164294 | 0 | 46301.5 | 0 |
| 1993-94 | 44448.6 | 12123.7 | 0.272758 | 0 | 82958.8 | 0 |
| 1994-95 | 61340.8 | 15001.7 | 0.244563 | 0 | 102579.1 | 0 |
| 1995-96 | 78079.1 | 13472.9 | 0.172554 | 0 | 148280.9 | 0 |
| 1996-97 | 89299.7 | 11571.5 | 0.129581 | 0 | 150622.1 | 0 |
| 1997-98 | 155557.4 | 23192.8 | 0.149095 | 0 | 254616.6 | 0 |
| 1998-99 | 180496.3 | 28391.7 | 0.157298 | 0 | 229546.5 | 0 |
| 1999-00 | 199817.7 | 11484.2 | 0.057473 | 0 | 195982.1 | 0 |
| 2000-01 | 210667.5 | 16057.6 | 0.076222 | 1335.3 | 169342.9 | 0.007885 |
| 2001-02 | 206021.3 | 14195.4 | 0.068903 | 37083 | 110652.9 | 0.335129 |
| 2002-03 | 219062.1 | 15806.8 | 0.072157 | 40981.2 | 119538.6 | 0.342828 |
| 2003-04 | 254660.2 | 17696.3 | 0.06949 | 42246.7 | 194627.9 | 0.217064 |
| 2004-05 | 297757.6 | 22374.2 | 0.075142 | 81923.2 | 348396.6 | 0.235144 |
| 2005-06 | 351525.6 | 33352 | 0.094878 | 92212.8 | 472362.2 | 0.195216 |
| 2006-07 | 433588.4 | 40924.9 | 0.094387 | 96723.7 | 624557.2 | 0.154868 |
| 2007-08 | 528614.2 | 35669.1 | 0.067477 | 102096.5 | 920587 | 0.110904 |
| 2008-09 | 696522.5 | 35009.8 | 0.050264 | 115229.3 | 1080209 | 0.106673 |
| 2009-10 | 673337.2 | 54342 | 0.080705 | 117238.3 | 1285524 | 0.091199 |
| 2010-11 | 1262331 | 1330516 | 1.054015 | 2547105 | 1650233 | 1.543482 |
| 2011-12 | 1549516 | 1444977 | 0.932534 | 3071479 | 1848373 | 1.66172 |
| 2012-13 | 1583155 | 1487528 | 0.939597 | 3574972 | 1831943 | 1.951464 |
| 2013-14 | 1976921 | 1706256 | 0.863088 | 4605092 | 2098000 | 2.194991 |
| 2014-15 | 2193751 | 1908195 | 0.869832 | 4981059 | 2143405 | 2.3239 |
| 2015-16 | 2316925 | 1502350 | 0.648424 | 5020028 | 1518598 | 3.3057 |
| 2016-17 | 2746056 | 1610753 | 0.58657 | 4983726 | 1455245 | 3.424664 |
| 2017-18 | 1403514 | 1074189 | 0.765357 | 2533396 | 1349100 | 1.877841 |

Source: CMIE

### 3.3.2. Debt equity and liquidity ratio of Electricity:

| Year | Total Current Assets | Total current liability | Liqidity ratio | Total debt | Total equity | Debt equity ratio |
|---|---|---|---|---|---|---|
| 1990-91 | 10512.3 | 41057.1 | 0.256041 | 0 | 121732.5 | 0 |
| 1991-92 | 17718.6 | 70295.2 | 0.25206 | 0 | 148392.1 | 0 |
| 1992-93 | 62796.9 | 94365.1 | 0.665467 | 0 | 248632.6 | 0 |
| 1993-94 | 56038.6 | 91692.8 | 0.611156 | 0 | 293047.8 | 0 |
| 1994-95 | 23288 | 109961.9 | 0.211782 | 0 | 370228.1 | 0 |
| 1995-96 | 20964.9 | 120812.3 | 0.173533 | 1962.4 | 425679.4 | 0.00461 |
| 1996-97 | 31841.7 | 173916.7 | 0.183086 | 0 | 496495.9 | 0 |
| 1997-98 | 29479.6 | 193510.1 | 0.152341 | 0 | 528707.6 | 0 |
| 1998-99 | 23945.5 | 227840.7 | 0.105098 | 0 | 625037.5 | 0 |
| 1999-00 | 26425.2 | 255655.5 | 0.103363 | 0 | 692050.6 | 0 |
| 2000-01 | 16433.6 | 233994.2 | 0.070231 | 0 | 751872.2 | 0 |
| 2001-02 | 89613.4 | 296168.7 | 0.302576 | 29869.8 | 940081.7 | 0.031774 |
| 2002-03 | 261790.2 | 634774.5 | 0.412414 | 72378.4 | 1176087 | 0.061542 |
| 2003-04 | 319544.3 | 736797.1 | 0.433694 | 103207.2 | 1429466 | 0.0722 |
| 2004-05 | 282672.2 | 848437.8 | 0.333168 | 103402.4 | 1604198 | 0.064457 |
| 2005-06 | 322324.4 | 1196002 | 0.269502 | 61554.1 | 1838659 | 0.033478 |
| 2006-07 | 404863.7 | 1531990 | 0.264273 | 65272.4 | 2130868 | 0.030632 |
| 2007-08 | 408705.2 | 1923124 | 0.212522 | 78661.6 | 2534752 | 0.031033 |
| 2008-09 | 574752.8 | 2368085 | 0.242708 | 95143.9 | 2861353 | 0.033251 |
| 2009-10 | 837163.8 | 2947609 | 0.284015 | 223053.8 | 3542675 | 0.062962 |
| 2010-11 | 3024184 | 3396416 | 0.890404 | 5059456 | 3891998 | 1.299964 |
| 2011-12 | 3519483 | 4330531 | 0.812714 | 7174151 | 3887872 | 1.845264 |
| 2012-13 | 3895047 | 4871394 | 0.799575 | 8989129 | 3992914 | 2.25127 |
| 2013-14 | 4323162 | 5312962 | 0.813701 | 10781553 | 4340003 | 2.484227 |
| 2014-15 | 4862099 | 5938864 | 0.818692 | 12039012 | 4502583 | 2.673801 |
| 2015-16 | 5457807 | 7379497 | 0.739591 | 13478034 | 5404654 | 2.493783 |
| 2016-17 | 5717580 | 7595196 | 0.752789 | 13639483 | 5838944 | 2.33595 |
| 2017-18 | 1392387 | 1794183 | 0.776056 | 4346378 | 2920132 | 1.488418 |

Source: CMIE

### 3.3.3. Debt equity and liquidity ratio of Cement:

| Year | Total Current Assets | Total current liability | Liquidity ratio | Total debt | Total equity | Debt equity ratio |
|---|---|---|---|---|---|---|
| 1990-91 | 3094.7 | 11494.7 | 0.269228 | 0 | 8267.6 | 0 |
| 1991-92 | 3765.7 | 15331.6 | 0.245617 | 0 | 11672.5 | 0 |
| 1992-93 | 3947.9 | 15029.3 | 0.26268 | 0 | 13268.1 | 0 |
| 1993-94 | 4810.6 | 16984.7 | 0.283231 | 0 | 21129.9 | 0 |
| 1994-95 | 7158.8 | 21714.4 | 0.32968 | 0 | 37649.6 | 0 |
| 1995-96 | 8691.1 | 25594.8 | 0.339565 | 0 | 48831.1 | 0 |
| 1996-97 | 7938.7 | 28815.8 | 0.275498 | 0 | 50912.8 | 0 |
| 1997-98 | 4566.6 | 28547.9 | 0.159963 | 0 | 44363.2 | 0 |
| 1998-99 | 4306.3 | 32380.2 | 0.132992 | 0 | 41171 | 0 |
| 1999-00 | 1999.3 | 37937.6 | 0.0527 | 0 | 46663.6 | 0 |
| 2000-01 | 2206.5 | 42331.3 | 0.052125 | 1769.9 | 43500.8 | 0.040687 |
| 2001-02 | 1752.6 | 44664.8 | 0.039239 | 17029.5 | 39490.1 | 0.431235 |
| 2002-03 | 1284.7 | 47178.4 | 0.027231 | 17603.8 | 31349.9 | 0.561527 |
| 2003-04 | 1725.4 | 54552.1 | 0.031628 | 26821.3 | 59367.2 | 0.451787 |
| 2004-05 | 1663.8 | 60531.4 | 0.027487 | 25094.8 | 68114.7 | 0.36842 |
| 2005-06 | 3336.4 | 78900.8 | 0.042286 | 30350.5 | 112996.7 | 0.268596 |
| 2006-07 | 7356.9 | 138616 | 0.053074 | 42304.1 | 270607.1 | 0.15633 |
| 2007-08 | 4888.3 | 144107.9 | 0.033921 | 37124.8 | 285718.6 | 0.129935 |
| 2008-09 | 6606.7 | 195032.7 | 0.033875 | 53713.8 | 458001.1 | 0.117279 |
| 2009-10 | 8898 | 188468.5 | 0.047212 | 50835.7 | 442262.3 | 0.114945 |
| 2010-11 | 238632.1 | 309948.8 | 0.769908 | 572254.2 | 555291.1 | 1.030548 |
| 2011-12 | 390878.5 | 391485.7 | 0.998449 | 757180.8 | 656712.2 | 1.152987 |
| 2012-13 | 454399.4 | 435213.6 | 1.044084 | 925989.2 | 761172.7 | 1.21653 |
| 2013-14 | 461703.7 | 436350 | 1.058104 | 928852.7 | 803174.8 | 1.156476 |
| 2014-15 | 710212.8 | 682442.9 | 1.040692 | 1769038 | 1055260 | 1.676399 |
| 2015-16 | 831583.6 | 739983 | 1.123787 | 1757570 | 1089641 | 1.61298 |
| 2016-17 | 878337.3 | 814093.5 | 1.078915 | 1936922 | 1179025 | 1.642817 |
| 2017-18 | 908380.9 | 836622.8 | 1.085771 | 2017903 | 1232800 | 1.636845 |

Source: CMIE

### 3.3.4. Debt Equity and liquidity ratio Auto Industry:

| Year | Total Current Assets | Total current liability | Liquidity ratio | Total long term debt | Total equity | Debt equity ratio |
|---|---|---|---|---|---|---|
| 1990-91 | 4204.8 | 23975.4 | 0.17538 | 0 | 16536.7 | 0 |
| 1991-92 | 5945.9 | 27587 | 0.215533 | 0 | 17269.8 | 0 |
| 1992-93 | 5649.1 | 30786.6 | 0.183492 | 0 | 16925.5 | 0 |
| 1993-94 | 7512.8 | 46415.3 | 0.16186 | 0 | 26042.6 | 0 |
| 1994-95 | 9452.7 | 79449 | 0.118978 | 0 | 49318.1 | 0 |
| 1995-96 | 7537.3 | 95701.1 | 0.078759 | 0 | 74747 | 0 |
| 1996-97 | 7276.6 | 81080.5 | 0.089745 | 0 | 106749.6 | 0 |
| 1997-98 | 8491.3 | 78704.5 | 0.107888 | 0 | 119866.2 | 0 |
| 1998-99 | 9593.2 | 98682.5 | 0.097213 | 0 | 137137.5 | 0 |
| 1999-00 | 6415.1 | 94869.4 | 0.06762 | 0 | 157202.1 | 0 |
| 2000-01 | 4969 | 90221.6 | 0.055076 | 0 | 131014.7 | 0 |
| 2001-02 | 4007.9 | 111163.6 | 0.036054 | 15174.4 | 141062.1 | 0.107572 |
| 2002-03 | 11027.4 | 131970.2 | 0.08356 | 22748.7 | 154882.9 | 0.146877 |
| 2003-04 | 8431.8 | 164302.5 | 0.051319 | 21844.3 | 194857.2 | 0.112104 |
| 2004-05 | 9902.7 | 210269 | 0.047095 | 21995.6 | 223911.7 | 0.098233 |
| 2005-06 | 10505.4 | 234870.5 | 0.044728 | 21373.6 | 281019.2 | 0.076057 |
| 2006-07 | 14752.9 | 287079.7 | 0.05139 | 24530.3 | 346350.7 | 0.070825 |
| 2007-08 | 14767.5 | 344300.8 | 0.042891 | 29020.5 | 348086.1 | 0.083372 |
| 2008-09 | 22766.8 | 416093.3 | 0.054716 | 41557.1 | 446922.3 | 0.092985 |
| 2009-10 | 20165.8 | 579108 | 0.034822 | 50911 | 556656.7 | 0.091459 |
| 2010-11 | 621375.2 | 683615.6 | 0.908954 | 749923 | 699521.1 | 1.072052 |
| 2011-12 | 719805.5 | 711025.5 | 1.012348 | 620431 | 650103.8 | 0.954357 |
| 2012-13 | 776252 | 808701.3 | 0.959875 | 764890.9 | 781406.8 | 0.978864 |
| 2013-14 | 878246.6 | 909369.9 | 0.965775 | 891788.4 | 900701 | 0.990105 |
| 2014-15 | 1118564 | 1136561 | 0.984165 | 1089771 | 1188950 | 0.916583 |
| 2015-16 | 1099101 | 1100477 | 0.99875 | 1184515 | 1528042 | 0.775185 |
| 2016-17 | 1267576 | 1175149 | 1.078651 | 1166154 | 1758545 | 0.663136 |
| 2017-18 | 817973.6 | 888984.4 | 0.920121 | 610416.7 | 1495872 | 0.408067 |

Source: CMIE

### 3.3.5. Consolidated Debt equity and liquidity ratio:

| Year | Total Current Assets | Total current liability | Liquidity ratio | Total long term debt | Total equity | Debt equity ratio |
|---|---|---|---|---|---|---|
| 1990-91 | 26564.8 | 135246.1 | 0.196418 | 0 | 216887.7 | 0 |
| 1991-92 | 41082.4 | 196022.6 | 0.20958 | 0.00 | 2,76,084.00 | 0.00 |
| 1992-93 | 84210.2 | 212102.6 | 0.397026 | 0 | 325127.7 | 0 |
| 1993-94 | 80485.7 | 199541.4 | 0.403353 | 0 | 423179.1 | 0 |
| 1994-95 | 54901.2 | 272466.1 | 0.201497 | 0 | 559774.9 | 0 |
| 1995-96 | 50666.2 | 320187.3 | 0.158239 | 1962.4 | 697538.4 | 0.002813 |
| 1996-97 | 58628.5 | 373112.7 | 0.157133 | 0 | 804780.4 | 0 |
| 1997-98 | 65730.3 | 456319.9 | 0.144044 | 0 | 947553.6 | 0 |
| 1998-99 | 66236.7 | 539399.7 | 0.122797 | 0 | 1032892.5 | 0 |
| 1999-00 | 46323.8 | 588280.2 | 0.078744 | 0 | 1091898.4 | 0 |
| 2000-01 | 39666.7 | 577214.6 | 0.068721 | 3105.2 | 1095730.6 | 0.002834 |
| 2001-02 | 109569.3 | 658018.4 | 0.166514 | 99156.7 | 1231286.8 | 0.080531 |
| 2002-03 | 289909.1 | 1032985 | 0.280652 | 153712.1 | 1481858.5 | 0.103729 |
| 2003-04 | 347397.8 | 1210312 | 0.287032 | 194119.5 | 1878318.5 | 0.103347 |
| 2004-05 | 316612.9 | 1416996 | 0.22344 | 232416 | 2244620.5 | 0.103544 |
| 2005-06 | 369518.2 | 1861299 | 0.198527 | 205491 | 2705036.7 | 0.075966 |
| 2006-07 | 467898.4 | 2391274 | 0.195669 | 228830.5 | 3372382.8 | 0.067854 |
| 2007-08 | 464030.1 | 2940147 | 0.157825 | 246903.4 | 4089143.7 | 0.06038 |
| 2008-09 | 639136.1 | 3675734 | 0.17388 | 305644.1 | 4846485.8 | 0.063065 |
| 2009-10 | 920569.6 | 4388523 | 0.209768 | 442038.8 | 5827118 | 0.075859 |
| 2010-11 | 5214707 | 5652312 | 0.92258 | 8928739 | 6797043.7 | 1.313621 |
| 2011-12 | 6075145 | 6982558 | 0.870046 | 11623241 | 7043060.8 | 1.650311 |
| 2012-13 | 6613227 | 7698464 | 0.859032 | 14254981 | 7367437 | 1.934863 |
| 2013-14 | 7369369 | 8635603 | 0.85337 | 17207286 | 8141878.9 | 2.113429 |
| 2014-15 | 8599070 | 9951618 | 0.864088 | 19878880 | 8890197.9 | 2.236045 |
| 2015-16 | 8890841 | 11536882 | 0.770645 | 21440147 | 9540934.9 | 2.247175 |
| 2016-17 | 9474246 | 12330494 | 0.768359 | 21726285 | 10231759.3 | 2.123416 |
| 2017-18 | 4192930 | 4923304 | 0.85165 | 9508093 | 6997904.3 | 1.358706 |

Source: CMIE

### 3.4. SGR Calculation:

First ROE is calculated by dividing profit after tax by paid up equity capital and reserve fund. Profit after tax data is taken from income and expenditure statement and equity and reserve fund is taken from balance sheet. Second Dividend payout ratio is to be calculated by dividing dividend paid by profit after tax. Dividend data is taken from cash flow statement. It is represented by notation ‘b’. Third Retention ratio is to be calculated by deducting dividend paid out ratio from one. SGR = ROE*b/[1 – (ROE*b)].

### 3.4.1. SGR Steel:

| Year | Profit after tax | Paid up capital and reserve fund | ROE | Dividend payout ratio 'b' | SGR |
|---|---|---|---|---|---|
| 1990-91 | 5132.25 | 73452.7 | 6.98715 | 1 | 7.512026 |
| 1991-92 | -3276.9 | 102611.3 | -3.19351 | 1 | -3.09468 |
| 1992-93 | -4778.75 | 51829.5 | -9.22014 | 1 | -8.44179 |
| 1993-94 | -4031.23 | 90037.2 | -4.47729 | 1 | -4.28542 |
| 1994-95 | 2585.55 | 92779.7 | 2.786763 | 0.302044 | 0.865854 |
| 1995-96 | 9185.06 | 139965.2 | 6.562388 | 0.663105 | 4.657175 |
| 1996-97 | 731.06 | 143234.5 | 0.510394 | -3.37433 | -1.73107 |
| 1997-98 | 1457.91 | 232925.6 | 0.625912 | -1.75072 | -1.1027 |
| 1998-99 | -27899.9 | 213048 | -13.0956 | 1.087846 | -12.5964 |
| 1999-00 | -31913.2 | 181450.8 | -17.5878 | 1.063388 | -15.9052 |
| 2000-01 | -23688.6 | 157496.6 | -15.0407 | 1.079819 | -14.1178 |
| 2001-02 | -43704.4 | 113483 | -38.5119 | 1.048828 | -29.1616 |
| 2002-03 | 9359.06 | 106795.1 | 8.763567 | 0.821403 | 7.889853 |
| 2003-04 | 65739.11 | 169267.3 | 38.83745 | 0.948252 | 60.21279 |
| 2004-05 | 163439.4 | 314861.5 | 51.90835 | 0.931183 | 100.5085 |
| 2005-06 | 108303.2 | 417759.9 | 25.92475 | 0.799256 | 27.97225 |
| 2006-07 | 156360.8 | 596588.1 | 26.20918 | 0.858073 | 30.47722 |
| 2007-08 | 196274.2 | 831788.2 | 23.59665 | 0.871266 | 26.90845 |
| 2008-09 | 145564.8 | 994608.8 | 14.63538 | 0.799718 | 13.7108 |
| 2009-10 | 176066.6 | 1248897 | 14.09777 | 0.829841 | 13.61886 |
| 2010-11 | 173277.8 | 1593269 | 10.87561 | 0.849328 | 10.36413 |
| 2011-12 | 150288.4 | 1806855 | 8.317678 | 0.796411 | 7.225262 |
| 2012-13 | 58915.74 | 1806253 | 3.261766 | 0.533639 | 1.799294 |
| 2013-14 | 76895.29 | 2101089 | 3.659783 | 0.687032 | 2.609903 |
| 2014-15 | 44566.8 | 2190656 | 2.034404 | 0.489694 | 1.016924 |
| 2015-16 | -250978 | 1558678 | -16.102 | 1.060344 | -14.7057 |
| 2016-17 | -121781 | 1482875 | -8.21247 | 1.106455 | -8.39711 |
| 2017-18 | 19158.3 | 1332895 | 1.437345 | 0.011749 | 0.017134 |

Source: CMIE

### 3.4.2. SGR of Electricity Industry:

| Year | Profit after tax | Paid up capital and reserve fund | ROE | Dividend payout ratio 'b' | SGR |
|---|---|---|---|---|---|
| 1990-91 | 10078.1 | 122055.3 | 8.256995 | 0 | 9.000136 |
| 1991-92 | 13047.1 | 148099.5 | 8.809685 | 0 | 9.660769 |
| 1992-93 | 18976 | 227630.1 | 8.336332 | 0 | 9.094477 |
| 1993-94 | 19626.9 | 278174.1 | 7.055617 | 0 | 7.591225 |
| 1994-95 | 23539.3 | 375174.6 | 6.274225 | 0.077589 | 6.142929 |
| 1995-96 | 32006.1 | 417202.3 | 7.671602 | 0.097969 | 7.434493 |
| 1996-97 | 31304.5 | 478974.4 | 6.535736 | 0.181801 | 5.649647 |
| 1997-98 | 39242 | 517980.2 | 7.575965 | 0.174961 | 6.667202 |
| 1998-99 | 58913.8 | 611750.9 | 9.630358 | 0.147105 | 8.948705 |
| 1999-00 | 65710.2 | 672475 | 9.771397 | 0.157869 | 8.966643 |
| 2000-01 | 75175.47 | 736829.1 | 10.20257 | 0.110568 | 9.980134 |
| 2001-02 | 83102.86 | 884259.7 | 9.398015 | 0.16057 | 8.564642 |
| 2002-03 | 56489.4 | 1067823 | 5.290147 | 0.33239 | 3.661056 |
| 2003-04 | 102686.4 | 1326073 | 7.743643 | 0.1308 | 7.216499 |
| 2004-05 | 77803.99 | 1477699 | 5.265211 | 0.509012 | 2.653757 |
| 2005-06 | 69982.7 | 1682765 | 4.158792 | 0.734589 | 1.11611 |
| 2006-07 | 137956.5 | 1952420 | 7.065921 | 0.35918 | 4.742733 |
| 2007-08 | 121687.6 | 2279268 | 5.338889 | 0.477048 | 2.872174 |
| 2008-09 | -26155.9 | 2448871 | -1.06808 | -2.28428 | -3.38899 |
| 2009-10 | 53034.55 | 3033786 | 1.748131 | 1.188733 | -0.32884 |
| 2010-11 | -51012.3 | 3551200 | -1.43648 | -1.31422 | -3.21737 |
| 2011-12 | -237280 | 3530122 | -6.72157 | -0.36485 | -8.40306 |
| 2012-13 | -195102 | 3663698 | -5.32528 | -0.46461 | -7.23515 |
| 2013-14 | -149057 | 4092067 | -3.64257 | -0.78644 | -6.10966 |
| 2014-15 | -119032 | 4187407 | -2.84262 | -1.57863 | -6.82946 |
| 2015-16 | -71668 | 5093864 | -1.40695 | -1.42198 | -3.29531 |
| 2016-17 | -106535 | 5490243 | -1.94044 | -1.26239 | -4.20541 |
| 2017-18 | 225636 | 2926419 | 7.710311 | 0.020225 | 8.171689 |

Source: CMIE

### 3.4.3. SGR Cement:

| Year | Profit after tax | Paid up capital and reserve fund | ROE | Dividend payout ratio 'b' | SGR |
|---|---|---|---|---|---|
| 1990-91 | 2081.84 | 10766.9 | 0 | 0 | 23.97036 |
| 1991-92 | 3170.03 | 14622.7 | 0 | 0 | 27.6794 |
| 1992-93 | 1949.4 | 17306 | 0 | 0 | 12.69422 |
| 1993-94 | 2496.4 | 25343.7 | 0 | 0 | 10.92646 |
| 1994-95 | 5590.91 | 39856.2 | 0.140854 | 0.140854 | 13.70336 |
| 1995-96 | 8037.87 | 52918.4 | 0.200003 | 0.200003 | 13.83207 |
| 1996-97 | 828.34 | 55272 | 2.229157 | 2.229157 | -1.80877 |
| 1997-98 | -1840.11 | 48358.1 | -0.90609 | -0.90609 | -6.76251 |
| 1998-99 | -6063.17 | 44015.7 | -0.22036 | -0.22036 | -14.3913 |
| 1999-00 | -7864.38 | 52658.5 | -0.22234 | -0.22234 | -15.4372 |
| 2000-01 | -4149.73 | 49121.3 | -0.24553 | -0.24553 | -9.52042 |
| 2001-02 | -2173.13 | 44035.8 | -0.99966 | -0.99966 | -8.98183 |
| 2002-03 | -1012.63 | 37324.1 | -1.61461 | -1.61461 | -6.62376 |
| 2003-04 | 3110.07 | 69418.2 | 0.775288 | 0.775288 | 1.016992 |
| 2004-05 | 13544.18 | 79598.3 | 0.233274 | 0.233274 | 15.00381 |
| 2005-06 | 30056.1 | 125219.1 | 0.236158 | 0.236158 | 22.45049 |
| 2006-07 | 90825.23 | 282158.9 | 0.163197 | 0.163197 | 36.86665 |
| 2007-08 | 98126.76 | 292801.3 | 0.154519 | 0.154519 | 39.53754 |
| 2008-09 | 100389.4 | 463897.2 | 0.167717 | 0.167717 | 21.96753 |
| 2009-10 | 89604.41 | 448451 | 0.165156 | 0.165156 | 20.02051 |
| 2010-11 | 55467.7 | 556610 | 0.265564 | 0.265564 | 7.896816 |
| 2011-12 | 75024.17 | 649365.4 | 0.233585 | 0.233585 | 9.714986 |
| 2012-13 | 83663.85 | 745923.4 | 0.219772 | 0.219772 | 9.590418 |
| 2013-14 | 50391.07 | 771930.6 | 0.366912 | 0.366912 | 4.31091 |
| 2014-15 | 49498.62 | 1017432 | 0.406817 | 0.406817 | 2.971622 |
| 2015-16 | 37954.27 | 1048836 | 0.600786 | 0.600786 | 1.465813 |
| 2016-17 | 9356.5 | 1127213 | 1.925314 | 1.925314 | -0.76221 |
| 2017-18 | 20585 | 1217253 | 0.5588 | 0.5588 | 0.751723 |

Source: CMIE

### 3.4.4. SGR Auto Industry:

| Year | Profit after tax | Paid up capital and reserve fund | ROE | Dividend payout ratio 'b' | SGR |
|---|---|---|---|---|---|
| 1990-91 | 3140.5 | 18226.8 | 17.23012 | 0 | 20.8169 |
| 1991-92 | 1789.37 | 19349.6 | 9.247581 | 0 | 10.1899 |
| 1992-93 | -74.7 | 19450.4 | -0.38405 | 0 | -0.38258 |
| 1993-94 | 4245.23 | 28866.3 | 14.70653 | 0.000895 | 17.22417 |
| 1994-95 | 11492.72 | 52791.2 | 21.77014 | 0.108799 | 24.07189 |
| 1995-96 | 17239.64 | 75690.9 | 22.77637 | 0.134278 | 24.56094 |
| 1996-97 | 27988.51 | 113016.8 | 24.76491 | 0.126548 | 27.6014 |
| 1997-98 | 19009.23 | 127446.5 | 14.91546 | 0.247706 | 12.63901 |
| 1998-99 | 15438.47 | 147230.6 | 10.48591 | 0.24005 | 8.658769 |
| 1999-00 | 13155.31 | 168178.3 | 7.82224 | 0.161524 | 7.019127 |
| 2000-01 | -7044.13 | 140040.7 | -5.03006 | -0.34345 | -6.32988 |
| 2001-02 | 7586.4 | 141713.9 | 5.353321 | 0.531201 | 2.574238 |
| 2002-03 | 14509.63 | 154979 | 9.36232 | 0.546203 | 4.43711 |
| 2003-04 | 35016.13 | 186648.1 | 18.76051 | 0.382729 | 13.09698 |
| 2004-05 | 46625.3 | 215887 | 21.59709 | 0.232747 | 19.86158 |
| 2005-06 | 66368.41 | 273698.8 | 24.2487 | 0.256062 | 22.01006 |
| 2006-07 | 75549.47 | 341177.2 | 22.14376 | 0.323768 | 17.61153 |
| 2007-08 | 66313.99 | 342513.1 | 19.36101 | 0.189295 | 18.61843 |
| 2008-09 | 35045.9 | 449181.2 | 7.802174 | 0.572543 | 3.450156 |
| 2009-10 | 104113.4 | 550598.1 | 18.90915 | 0.323759 | 14.66198 |
| 2010-11 | 125592.2 | 693014.9 | 18.12258 | 0.272018 | 15.19798 |
| 2011-12 | 103088.2 | 643097.7 | 16.02994 | 0.540221 | 7.956652 |
| 2012-13 | 73118.93 | 776988.6 | 9.410554 | 0.72123 | 2.694051 |
| 2013-14 | 84992.8 | 893020.6 | 9.517451 | 0.548443 | 4.490667 |
| 2014-15 | 86804.7 | 1184340 | 7.329372 | 0.68482 | 2.364697 |
| 2015-16 | 192428 | 1512350 | 12.72377 | 0.392849 | 8.372005 |
| 2016-17 | 209349 | 1740424 | 12.02862 | 0.220036 | 10.35322 |
| 2017-18 | 239009.1 | 1501259 | 15.92058 | 0.262167 | 13.31026 |

Source: CMIE

### 3.4.5. Consolidated SGR ratio:

| Year | Profit after tax | Paid up capital and reserve fund | ROE | Dividend payout ratio 'b' | SGR |
|---|---|---|---|---|---|
| 1990-91 | 20432.69 | 224501.7 | 9.101352 | 1 | 10.01264 |
| 1991-92 | 14729.6 | 284683.1 | 5.174034 | 1 | 5.456347 |
| 1992-93 | 16071.95 | 316216 | 5.082586 | 1 | 5.354745 |
| 1993-94 | 22337.3 | 422421.3 | 5.28792 | 0.99983 | 5.582097 |
| 1994-95 | 43208.48 | 560601.7 | 7.707519 | 0.868801 | 7.10994 |
| 1995-96 | 66468.67 | 685776.8 | 9.692464 | 0.847259 | 8.826122 |
| 1996-97 | 60852.41 | 790497.7 | 7.697987 | 0.765375 | 6.170085 |
| 1997-98 | 57869.03 | 926710.4 | 6.244565 | 0.701877 | 4.522025 |
| 1998-99 | 40389.17 | 1016045 | 3.975135 | 0.599905 | 2.419315 |
| 1999-00 | 39087.97 | 1074763 | 3.636893 | 0.583759 | 2.149713 |
| 2000-01 | 40293.01 | 1083488 | 3.718825 | 0.661455 | 2.50052 |
| 2001-02 | 44811.69 | 1183492 | 3.786394 | 0.516195 | 1.97444 |
| 2002-03 | 79345.46 | 1366921 | 5.804685 | 0.621803 | 3.692237 |
| 2003-04 | 206551.68 | 1751407 | 11.79347 | 0.841947 | 10.83532 |
| 2004-05 | 301412.88 | 2088046 | 14.43516 | 0.784807 | 12.43434 |
| 2005-06 | 274710.4 | 2499443 | 10.99086 | 0.64602 | 7.441659 |
| 2006-07 | 460691.97 | 3172344 | 14.52213 | 0.759002 | 12.02864 |
| 2007-08 | 482402.52 | 3746371 | 12.87653 | 0.769833 | 10.73173 |
| 2008-09 | 254844.19 | 4356558 | 5.849668 | 0.506351 | 3.007083 |
| 2009-10 | 422818.94 | 5281732 | 8.005308 | 0.665319 | 5.521747 |
| 2010-11 | 303325.46 | 6394094 | 4.743838 | 0.531715 | 2.55666 |
| 2011-12 | 91120.93 | 6629440 | 1.374489 | -1.08935 | -1.52213 |
| 2012-13 | 20596.33 | 6992863 | 0.294534 | -8.18827 | -3.00518 |
| 2013-14 | 63222.63 | 7858107 | 0.804553 | -2.26453 | -1.90034 |
| 2014-15 | 61838.18 | 8579836 | 0.720738 | -3.69343 | -2.95226 |
| 2015-16 | -92263.81 | 9213728 | -1.00137 | 3.335183 | -3.00504 |
| 2016-17 | -9609.94 | 9840755 | -0.09765 | 23.01172 | -1.48123 |
| 2017-18 | 504388.4 | 6977826 | 7.228446 | 0.80638 | 6.116359 |

Source: CMIE

### 3.5. Macro Economic variables:

| Year | GDP growth Real | Fiscal D is % of GDP | Call Money rate |
|---|---|---|---|
| 1991-92 | 1.4 | 5.56 | 19.57 |
| 1992-93 | 5.4 | 5.38 | 14.42 |
| 1993-94 | 5.7 | 7.01 | 6.99 |
| 1994-95 | 6.4 | 5.71 | 9.4 |
| 1995-96 | 7.3 | 5.10 | 17.73 |
| 1996-97 | 8.0 | 4.90 | 7.84 |
| 1997-98 | 4.3 | 5.87 | 8.69 |
| 1998-99 | 6.7 | 6.43 | 7.83 |
| 1999-00 | 8.0 | 5.59 | 8.87 |
| 2000-01 | 4.1 | 5.10 | 9.15 |
| 2001-02 | 5.4 | 5.98 | 7.16 |
| 2002-03 | 3.9 | 5.72 | 5.89 |
| 2003-04 | 8.0 | 4.34 | 4.62 |
| 2004-05 | 7.1 | 3.88 | 4.65 |
| 2005-06 | 9.5 | 3.96 | 5.6 |
| 2006-07 | 9.6 | 2.54 | 7.22 |
| 2007-08 | 9.3 | 2.50 | 6.07 |
| 2008-09 | 6.7 | 6.00 | 7.26 |
| 2009-10 | 8.6 | 6.50 | 3.29 |
| 2010-11 | 8.9 | 4.80 | 5.89 |
| 2011-12 | 6.7 | 5.80 | 8.22 |
| 2012-13 | 5.4 | 4.90 | 8.09 |
| 2013-14 | 6.1 | 4.40 | 8.28 |
| 2014-15 | 7.2 | 4.10 | 7.97 |
| 2015-16 | 7.9 | 3.90 | 6.98 |
| 2016-17 | 6.6 | 3.52 | 6.42 |

**Source of Data:** Growth Rate. Base year 2004-2005.Source: Handbook of Statistics on Indian Economy 2016-17 RBI (66-67 to 11-12)

Fiscal deficit as % of GDPHandbook of Statistics on Indian Economy 2016-17 RBI Sep. 2018

Call money rate Source https://data.gov.in/resources/money-rates-india-2000-01-2016-17

# Chapter IV

## Data Analysis and Interpretation

### 5.1.1 Steel Industry:

Ho1: There is no relationship between Sustainable Growth rate, D/E, G.P.M, and Liquidity ratios for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 0.528 | 3.03 | 0.064 | -.058 |
| Constant | -72.107 | -0.672 | 0.508 | | | | |
| Gross profit margin ratio | 1.629 | 0.783 | 0.442 | | | | |
| Debt Equity ratio | 0.052 | 0.006 | 0.995 | | | | |
| Liquidity ratio | 3.487 | 0.117 | 0.908 | | | | |

Since the calculated F value is less than table value null hypothesis is accepted.

### 5.1.2 Electricity Industry

Ho1: There is no relationship between Sustainable Growth rate, D/E, G.P.M, and Liquidity ratios for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha1.1: There is significant relationship between SGR and Debt equity ratio, Gross profit margin ratio of Electricity industry.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 72.236 | 3.05 | 0.908 | .895 |
| Constant | -10.691 | -4.188 | 0 | | | | |
| Gross profit margin ratio | 0.343 | 7.131 | 0 | | | | |
| Debt Equity ratio | -3.904 | -5.564 | 0 | | | | |
| Liquidity ratio | 2.875 | 1.066 | 0.298 | | | | |

Since the calculated F value is greater than table value null hypothesis is rejected.

Since the P value for variable liquidity ratio is greater than 0.05 it is not significant in influencing SGR. With respect to G.P.M, more is the G.P.M ratio more is the Sustainable growth rate. Lower the D/E ratio, lesser the Sustainable growth rate.

### 5.1.3. Cement Industry

Ho1: Relationship does not exist between Sustainable Growth rate, D/E, G.P.M, and Liquidity ratios for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 0.487 | .3.03 | 0.06 | -0.063 |
| Constant | 182.948 | 0.796 | 0.434 | | | | |
| Gross profit margin ratio | -2.06 | -0.754 | 0.459 | | | | |
| Debt Equity ratio | -10.839 | -0.901 | 0.377 | | | | |
| Liquidity ratio | 5.636 | 0.37 | 0.715 | | | | |

Since the calculated F value is less than table value null hypothesis is accepted.

### 5.1.4. Auto Industry

Ho1: There is no relationship between Sustainable Growth rate, D/E, G.P.M, and Liquidity ratios for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 0.686 | 3.03 | 0.082 | -0.038 |
| Constant | 17.447 | 0.808 | | 0.427 | | | |
| *Gross profit margin ratio* | *-0.11* | *-0.203* | | *0.841* | | | |
| Debt Equity ratio | -6.958 | -0.533 | | 0.599 | | | |
| Liquidity ratio | -0.065 | -0.006 | | 0.995 | | | |

Since the calculated F value is less than table value null hypothesis is accepted.

### 5.1.5. Consolidated ratios of all four Industries

Ho1: There is no relationship between Sustainable Growth rate, D/E, G.P.M, and Liquidity ratios for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha1.2: There is significant relationship exist between consolidated SGR of four industries and consolidated Debt equity ratio for four industries.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 10.63 | 3.03 | 0.581 | 0.526 |
| Constant | 8.607 | 1.741 | 0.095 | | | | |
| Gross profit margin ratio | -0.093 | -0.742 | 0.466 | | | | |
| Debt Equity ratio | -6.231 | -3.217 | 0.004 | | | | |
| Liquidity ratio | 5.995 | 1.087 | 0.288 | | | | |

Since computed $F$ value is > than table $F$ null hypothesis is not accepted. However, the P values of gross profit margin and liquidity ratio are greater than 0.05 these ratios are insignificant in influencing SGR. Since P value of debt equity ratio is less than 0.05, it is a significant ratio in influencing SGR. Since the Beta of debt equity is negative the

relationship between SGR and debt is inverse, it means lower the debt equity ratio higher is the SGR.

### 5.2.1Steel Industry

H02: Relationship does not exist between GPM, D/E, Liquidity ratios for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha2.1 There is a significant relationship between Gross profit Margin Ratio and liquidity ratio for steel Industry.

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - tab$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 29.138 | 3.4 | 0.708 | 0.684 |
| Constant | 51.428 | 73.204 | 0 | | | | |
| Debt Equity ratio | -1.566 | -1.926 | 0.066 | | | | |
| Liquidity ratio | -6.836 | -2.67 | 0.013 | | | | |

Since calculated $F$ > than table $F$ null hypothesis is not accepted. As $p$ value < 0.05 for liquidity ratio variable, it is significant in determining gross profit ratio. As Beta is negative for liquidity ratio variables higher is the liquidity ratio lower is the gross profit margin ratio. Since P value for debt equity ratio is greater than 0.05, it is insignificant in influencing gross profit margin ration. As beta is negative the inverse relationship exists between gross profit margin and debt equity ratio.

### 5.2.2. Electricity Industry

H02: There is no significant relationship between Gross profit margin ratios and Debt equity ratio, Liquidity ratio for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 5.617 | 3.42 | 0.328 | 0.27 |
| Constant | 49.939 | 13.482 | 0 | | | | |
| Debt Equity ratio | -1.243 | -0.411 | 0.685 | | | | |
| Liquidity ratio | -16.788 | -1.507 | 0.145 | | | | |

Null hypothesis is not accepted as calculated $F$ value > than table value.

As, both the variables are insignificant being P value greater than 0.05 in determining the gross profit ratio of industry.

### 5.2.3. Cement Industry

H02: There is no significant relationship between Gross profit margin ratios and Debt equity ratio, Liquidity ratio for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha2.2: There is significant relationship between Gross profit margin ratio and Debt Equity Ratio of Cement Industry.

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 9.393 | 3.4 | 0.439 | 0.392 |
| Constant | 84.102 | 289.426 | 0 | | | | |
| Debt Equity ratio | -2.23 | -2.88 | 0.008 | | | | |
| Liquidity ratio | 1.228 | 1.106 | 0.28 | | | | |

Since calculated F value is greater than table value null hypothesis is rejected.

Liquidity ratio is insignificant in determining gross profit margin ratio as P value is more than 0.05. Debt equity ratio is significant in determining gross profit margin as P value is less than 0.05. As beta is negative inverse relationship exist between the gross profit margin ratio and debt equity ratio.

### 5.2.4. Auto Industry

H02: There is no significant relationship between Gross profit margin ratios and Debt equity ratio, Liquidity ratio for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha2.3: There is significant relationship between consolidated Gross profit margin ratio and Debt Equity Ratio of Auto Industry.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 13.541 | 3.4 | 0.53 | 0.491 |
| Constant | 39.553 | 48.28 | 0 | | | | |
| Debt Equity ratio | -9.469 | -2.103 | 0.046 | | | | |
| Liquidity ratio | 1.085 | 0.258 | 0.799 | | | | |

Null hypothesis is no accepted as calculated $F$ is > than table value. G.P.M is only impacted by D/E ratio. As β is negative inverse relationship is observed between G.P.M ratio and D/E ratio. Liquidity ratio is not significant in determining G.P.M ratio as P value is greater than 0.05.

### 5.2.5. Consolidated ratios of all four Industries

H02: There is no significant relationship between Gross profit margin ratios and Debt equity ratio, Liquidity ratio for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 7.477 | 3.40 | 0.384 | 0.333 |
| Constant | 38.028 | 17.71 | 0 | | | | |
| Debt Equity ratio | -1.96 | -0.626 | 0.537 | | | | |
| Liquidity ratio | -7.276 | -0.821 | 0.42 | | | | |

Null hypothesis is rejected since calculated $F$ value is > table value. However, both the variables are not significant in influencing gross profit margin ratio as P value is greater than 0.05.

### 5.3. GDP growth and Macro economic variables:

H03: There is no significant relationship between GDP growth and macroeconomic variables post liberalization.

Ha3.1: There exist a significant relationship between GDP growth and Fiscal deficit, Call money rate.

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - tabl$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 8.946 | **0.42** | 0.438 | 0.389 |
| **Constant** | 12.047 | 8.527 | 0 | | | | |
| **Fiscal deficit** | -0.681 | -2.551 | 0.018 | | | | |
| **Call money rate** | -0.238 | -2.86 | 0.009 | | | | |

Since calculated F value is greater than table value null hypothesis is rejected. P value of both the variable is less than 0.05 they are significant in deterring GDP growth. Beta of both being negative lower the fiscal deficit and call money rate higher is the GDP growth.

### 5.4.1. Steel Industry Fiscal deficit

H04: There is no significant relationship between fiscal deficit and Debt equity ratio, Gross profit margin ratio and Liquidity ratio, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha4.1: There exists a significant relationship between Fiscal deficit and Debt Equity ratio and SGR for steel industry.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 5.482 | 2.84 | 0.511 | 0.418 |
| constant | 11.333 | 3.085 | 0.006 | | | | |
| Gross profit margin ratio | -0.118 | -1.645 | 0.115 | | | | |
| Debt Equity ratio | -1.042 | -3.449 | 0.002 | | | | |
| SGR | -0.02 | -2.885 | 0.009 | | | | |
| Liquidity ratio | 0.663 | 0.658 | 0.518 | | | | |

Since calculated F value is greater than table value null hypothesis is rejected.

P value of gross profit margin ratio and liquidity ratio being greater than 0.05 they are insignificant in predicting fiscal deficit. However, debt equity and SGR are significant in predicting fiscal deficit as their P value is less than 0.05. Their beta value being negative the relationship is

between them is inverse. Higher the debt equity ratio and SGR lower is the fiscal deficit

### 5.4.2. Electricity Industry Fiscal deficit

H04: There is no significant relationship between fiscal deficit and Debt equity ratio, Gross profit margin ratio and Liquidity ratio, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha4.2: There exists a significant relationship between Fiscal deficit and Debt Equity ratio, SGR, Gross profit margin ratio, liquidity ratio for Electricity industry.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 3.734 | 2.84 | 0.416 | 0.304 |
| Constant | -0.412 | -0.246 | 0.808 | | | | |
| Gross profit margin ratio | 0.139 | 3.232 | 0.004 | | | | |
| Debt Equity ratio | -1.581 | -2.966 | 0.007 | | | | |
| SGR steel | -0.259 | -2.484 | 0.021 | | | | |
| Liquidity ratio | 2.828 | 2.088 | 0.049 | | | | |

Since calculated F value is greater than table value null hypothesis is rejected.

P value of all the variables is less than 0.05 they are significant in determining fiscal deficit. Beta of debt equity ratio, SGR and debt equity

ratio is negative. The relationship between them is inverse. Beta of gross profit margin is positive. It shows direct relationship.

### 5.4.3. Cement Industry Fiscal deficit

H04: There is no significant relationship between fiscal deficit and Debt equity ratio, Gross profit margin ratio and Liquidity ratio, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

Ha4.3: There exists a significant relationship between Fiscal deficit and Debt Equity ratio, SGR, Gross profit margin ratio, liquidity ratio for Cement industry.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 8.538 | 2.84 | 0.619 | 0.547 |
| Constant | 43.37 | 3.475 | 0.002 | | | | |
| Gross profit margin ratio | -0.449 | -3.027 | 0.006 | | | | |
| Debt Equity ratio | -2.968 | -4.529 | 0 | | | | |
| SGR | -0.046 | -4.113 | 0 | | | | |
| Liquidity ratio | 2.309 | 2.82 | 0.01 | | | | |

Since calculated F value is greater than table value null hypothesis is rejected. Since P value of all variables being less than 0.05, they are significant in influencing fiscal deficit of the government. Fiscal deficit is impacted by Sustainable growth rate as well as D/E ration. It is also

affected by G.P.M and liquidity ratio. β of Sustainable growth rate, D/E and G.P.M ratios is negative. It shows that industries can contribute to lower fiscal deficit by way of higher Sustainable growth rate and earning more profit. It is also observed that if D/E is higher Fiscal deficit is lower. If industry is relying more on debt, the deficit of the government will be lower. Liquidity ratio and fiscal deficit are directly related.

### 5.4.4. Auto Industry Fiscal deficit

H04: There is no significant relationship between fiscal deficit and D/E, G.P.M and Liquidity ratios, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 0.955 | 2.84 | 0.154 | -0.007 |
| constant | 4.073 | 1.349 | 0.192 | | 2.84 | | |
| Gross profit margin ratio | 0.041 | 0.551 | 0.588 | | | | |
| Debt Equity ratio | -0.606 | -0.335 | 0.741 | | | | |
| SGR | -0.04 | -1.379 | 0.182 | | | | |
| Liquidity ratio | -0.026 | -0.017 | 0.987 | | | | |

Since calculated F value is less than table value null hypothesis is accepted

### 5.4.5. Consolidated ratios of all four Industry Fiscal deficit

H04: There is no significant relationship between fiscal deficit and D/E, G.P.M and Liquidity ratios, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization

Ha4.4: There exists a significant relationship between Fiscal deficit and consolidated Debt Equity ratio, SGR, liquidity ratio for all industry.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 13.792 | 2.84 | 0.724 | 0.672 |
| Constant | 5.479 | 4.883 | 0 | | | | |
| Gross profit margin ratio | 0.017 | 0.645 | 0.526 | | | | |
| Debt Equity ratio | -2.918 | -5.864 | 0 | | | | |
| SGR | -0.282 | -6.337 | 0 | | | | |
| Liquidity ratio | 4.542 | 3.763 | 0.001 | | | | |

Since calculated F value is greater than table value null hypothesis is rejected.

P value of gross profit margin is greater than 0.05 hence it is insignificant in determining fiscal deficit. SGR, debt equity ratio and liquidity ratio are significant in determining fiscal deficit.

### 5.5.1. Steel Industry: Call money

H05: There is a no significant relationship between rate of call money and D/E, G.P.M, and Liquidity ratios, SGR for Steel,

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 1.653 | 2.84 | 0.24 | 0.095 |
| Constant | -3.085 | -0.21 | 0.836 | | | | |
| Gross profit margin ratio | 0.235 | 0.819 | 0.422 | | | | |
| Debt Equity ratio | -1.271 | -1.05 | 0.306 | | | | |
| SGR | -0.06 | -2.13 | 0.045 | | | | |
| Liquidity ratio | 4.328 | 1.071 | 0.296 | | | | |

Since calculated F value is less than table value null hypothesis is accepted. SGR variable is only seen significant is influencing call money rate and the relationship is inverse.

### 5.5.2. Electricity Industry: Call money

H05: There is a no significant relationship between rate of call money and D/E, G.P.M and Liquidity ratios, SGR for Steel,

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 2.016 | 2.84 | 0.277 | 0.14 |
| Constant | -1.151 | -0.192 | 0.849 | | | | |
| Gross profit margin ratio | 0.186 | 1.211 | 0.24 | | | | |
| Debt Equity ratio | 0.571 | 0.3 | 0.767 | | | | |
| SGR steel | 0.123 | 0.331 | 0.744 | | | | |
| Liquidity ratio | 2.112 | 0.436 | 0.667 | | | | |

Since calculated F value is greater than table value null hypothesis is accepted.

### 5.5.3. Cement Industry:

**Call money**

H05: There is a no significant relationship between Rate of call money and D/E, G.P.M. and Liquidity ratios, Sustainable growth rate for Steel.

Ha5.1: There is a significant relationship between call money rate and debt equity ratio, Liquidity ratio for Cement industries post liberalization

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 5.877 | 2.84 | 0.528 | 0.438 |
| Constant | -83.06 | -1.86 | 0.077 | | | | |
| Gross profit margin ratio | 1.082 | 2.041 | 0.054 | | | | |
| Debt Equity ratio | -6.152 | -2.624 | 0.016 | | | | |
| SGR | 0.023 | 0.588 | 0.563 | | | | |
| Liquidity ratio | 10 | 3.413 | 0.003 | | | | |

Null hypothesis is rejected because calculated $F$ is > table value.

$p$ Value of Sustainable growth rate and G.P.M ratio is > 0.05 they does not influence call money rate.. Debt equity ratio and liquidity ratio are significant in determining call money rate as their P value is less than 0.05. Beta of debt equity ratio being negative, higher the debt higher the call money rate and vice versa. Beta of liquidity ratio being positive there is a direct relationship between them.

### 5.5.4. Auto Industry: Call money

H05: There is a no significant relationship between rate of call money and D/E, G.P.M and Liquidity ratios, Sustainable growth rate for Steel.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 2.287 | 2.84 | 0.303 | 0.171 |
| Constant | -9.08 | -1.031 | 0.314 | | | | |
| Gross profit margin ratio | 0.453 | 2.072 | 0.051 | | | | |
| Debt Equity ratio | -5.975 | -1.133 | 0.27 | | | | |
| SGR | -0.047 | -0.563 | 0.579 | | | | |
| Liquidity ratio | 7.603 | 1.688 | 0.106 | | | | |

Since calculated F value is greater than table value null hypothesis is accepted.

### 5.5.5. Consolidated ratios of all four Industries Industry: Call money

H05: There is a no significant relationship between rate of call money and D/E, G.P.M, and Liquidity ratios, Sustainable growth rate for Steel.

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 1.397 | 2.84 | 0.21 | 0.06 |
| Constant | -2.406 | -0.394 | 0.697 | | | | |
| Gross profit margin ratio | 0.301 | 2.048 | 0.053 | | | | |
| Debt Equity ratio | -1.169 | -0.432 | 0.67 | | | | |
| SGR | -0.128 | -0.527 | 0.604 | | | | |
| Liquidity ratio | 4.049 | 0.617 | 0.544 | | | | |

Since calculated F value is less than table value null hypothesis is accepted

### 5.6.1. Steel Industry SGR and GDP

H06: There is no significant relationship between SGR for Steel, Auto, Electricity, Cement and consolidated data of all four industries and GDP growth

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 3.458 | 4.26 | 0.126 | 0.09 |
| Constant | -24.625 | -1.369 | 0.184 | | | | |
| GDP growth | 4.802 | 1.86 | 0.075 | | | | |

Since calculated F value is less than table value null hypothesis is accepted

### 5.6.2. Electricity Industry SGR and GDP

H06: There is no significant relationship between SGR for Steel, Auto, Electricity, Cement and consolidated data of all four industries and GDP growth

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 1.877 | 4.26 | 0.073 | 0.034 |
| Constant | 8.27 | 1.927 | 0.066 | | | | |
| GDP growth | -0.844 | -1.37 | 0.183 | | | | |

Since calculated F value is less than table value null hypothesis is accepted

### 5.6.3. Cement Industry SGR and GDP

H06: There is no significant relationship between SGR for Steel, Auto, Electricity, Cement and consolidated data of all four industries and GDP growth

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 2.159 | 4.26 | 0.083 | 0.044 |
| Constant | -6.495 | -0.635 | 0.532 | | | | |
| GDP growth | 2.16 | 1.469 | 0.155 | | | | |

Since calculated F value is less than table value null hypothesis is accepted.

### 5.6.4. Auto Industry SGR and GDP

H06: There is no significant relationship between SGR for Steel, Auto, Electricity, Cement and consolidated data of all four industries and GDP growth

Ha6.1: There exist a significant relationship between SGR of auto industry and GDP growth

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 7.628 | 4.26 | 0.241 | .210 |
| Constant | -3.28 | -0.599 | 0.555 | | | | |
| GDP growth | 2.171 | 2.762 | 0.011 | | | | |

Since calculated F value is greater than table value null hypothesis is rejected

P value of GDP growth is less than 0.05; it plays a significant role in determining SGR of steel industry. The relationship between SGR and GDP growth is positive. It means higher the GDP growth higher is the SGR of auto industry.

### 5.6.5. Consolidated ratios of all Industries SGR and GDP

H06: There is no significant relationship between SGR for Steel, Auto, Electricity, Cement and consolidated data of all four industries and GDP growth

| variable | β | $t - value$ | $p - value$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 1.904 | 4.26 | 0.073 | 0.035 |
| Constant | -0.279 | -0.085 | 0.933 | | | | |
| GDP growth | 0.653 | 1.38 | 0.18 | | | | |

Since calculated F value is less than table value null hypothesis is accepted

### 5.7.1. Gross profit margin ratio of Steel Industry and Call money rate, fiscal deficit

H07: There is no significant relationship between gross profit margin ratio of Steel, Cement, Electricity, Auto, and aggregate gross profit margin of all four Industries and fiscal deficit and call money rate.

**Steel Industry:**

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | .272 | 3.42 | .023 | -.062 |
| Constant | 46.632 | 10.544 | .000 | | | | |
| Call money rate | .189 | .726 | .475 | | | | |
| Fiscal deficit | .002 | .002 | .998 | | | | |

Since calculated F value is less than table value null hypothesis is accepted

### 5.7.2. Gross profit margin ratio of Electricity Industry and Call money rate, fiscal deficit

H07: There is no significant relationship between gross profit margin ratio of Steel, Cement, Electricity, Auto, and aggregate gross profit margin of all four Industries and fiscal deficit and call money rate.

Ha7.1: There exist a significant relationship between call money rate and gross profit margin ratio of Electricity Industry.

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 6.099 | 3.42 | .347 | .290 |
| Constant | 18.595 | 2.376 | .026 | | | | |
| Call money rate | 1.175 | 2.554 | .018 | | | | |
| Fiscal deficit | 2.786 | 1.884 | .072 | | | | |

Since calculated F value is more than table value null hypothesis is rejected. Since P value of Call money is less than 0.05, it is significant in influencing gross profit margin of Electricity Industry. As Beta is positive the relationship is positive. It means higher is the call money rate higher is the gross profit margin.

### 5.7.3. Gross profit margin ratio of Cement Industry and Call money rate, Fiscal deficit

H07: There is no significant relationship between gross profit margin ratio of Steel, Cement, Electricity, Auto, and aggregate gross profit margin of all four Industries and fiscal deficit and call money rate.

**There exists a significant relationship between call money rate and gross profit margin ratio of Cement Industry.**

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 3.819 | 3.42 | .249 | .184 |
| Constant | 82.296 | 70.150 | .000 | | | | |
| Call money rate | .190 | 2.757 | .011 | | | | |
| Fiscal deficit | -.068 | -.305 | .763 | | | | |

Since calculated F value is more than table value null hypothesis is rejected. Since P value of Call money is less than 0.05, it is significant in influencing gross profit margin of Cement Industry. As Beta is positive the relationship is positive. It means higher is the call money rate higher is the gross profit margin.

### 5.7.4. Gross profit margin ratio of Auto Industry and Call money rate, Fiscal deficit

H07: There is no significant relationship between gross profit margin ratio of Steel, Cement, Electricity, Auto, and aggregate gross profit margin of all four Industries and fiscal deficit and call money rate.

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 3.099 | 3.42 | .212 | .144 |
| Constant | 30.081 | 7.958 | .000 | | | | |
| Call money rate | .452 | 2.034 | .054 | | | | |
| Fiscal deficit | .747 | 1.046 | .306 | | | | |

Since calculated F value is less than table value null hypothesis is accepted.

### 5.7.5. Gross profit margin ratio of All Industries and Call money rate, Fiscal deficit.

H07: There is no significant relationship between gross profit margin ratio of Steel, Cement, Electricity, Auto, and aggregate gross profit margin of all four Industries and fiscal deficit and call money rate.

**Fiscal deficit**

| variable | β | $t - value$ | $p - valu$ | $F\ value$ | $F - table$ | $R^2$ | $Adj\ R^2$ |
|---|---|---|---|---|---|---|---|
| | | | | 3.424 | 3.42 | .229 | .162 |
| Constant | 22.083 | 4.027 | .001 | | | | |
| Call money rate | .651 | 2.018 | .055 | | | | |
| Fiscal deficit | 1.322 | 1.276 | .215 | | | | |

Since calculated F value is less than table value null hypothesis is accepted.

**Hypothesis Testing:** Industry: Ho1: There is no significant relationship between Sustainable growth rate and D/E, G.P.M. and Liquidity ratios for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

**Steel Industry: Model Summary(b) Table 1.1**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ chang$ | $df1$ | $df2$ | $sign\ f\ char$ | $R^2Chang$ | $F\ chang$ | $df1$ | $df2$ |
| 1 | .254(a) | .064 | -.058 | 26.46288 | .064 | .528 | 3 | 23 | .667 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_steel, Gross_profit_margin_ratio_steel, Debt_Equity_ratio_steel; b Dependent Variable: SGR_steel

Source: SPSS output.

**ANOVA(b) Table 1.2**

| Model | | $Sum\ of Squre$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 1109.383 | 3 | 369.794 | .528 | .667(a) |
| | Residual | 16106.532 | 23 | 700.284 | | |
| | Total | 17215.915 | 26 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_steel, Gross_profit_margin_ratio_steel, Debt_Equity_ratio_steel; b Dependent Variable: SGR_steel

Source: SPSS output.

**Coefficients(a) Table 1.3**

| Model | | *Unstd. Coefficient* | | *Std. coefficient* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Toleranc* | *VIF* | β | Std. Error |
| 1 | (Constant) | -72.107 | 107.282 | | -.672 | .508 | | |
| | Gross_profit_margin_ratio_steel | 1.629 | 2.081 | .292 | .783 | .442 | .292 | 3.428 |
| | Debt_Equity_ratio_steel | .052 | 8.907 | .002 | .006 | .995 | .286 | 3.494 |
| | Liquidity_ratio_steel | 3.487 | 29.730 | .047 | .117 | .908 | .255 | 3.926 |

a Dependent Variable: SGR steel. The results of the table 1.1, 1.2.1.3, confirm that the H01 null for steel industry is accepted.

Source: SPSS output.

**Electricity Industry**

**Model Summary(b) Table 1.4**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ cha$ | $R^2Chang$ | $F\ chang$ | $df1$ | $df2$ |
| 1 | .953(a) | .908 | .895 | 1.96407 | .908 | 72.236 | 3 | 22 | .000 |

$A\ predictors$: ($Constant$), Liquidity_ratio_elctricity, Gross_profit_margin_ratio_Electricity, Debt_Equity_ratio_electricity;
b Dependent Variable: SGR_elctricity

Source: SPSS output.

**ANOVA(b)Table 1.5**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 835.959 | 3 | 278.653 | 72.236 | .000(a) |
| | Residual | 84.866 | 22 | 3.858 | | |
| | Total | 920.826 | 25 | | | |

$A\ predictors$: ($Constant$), Liquidity_ratio_elctricity, Gross_profit_margin_ratio_Electricity, Debt_Equity_ratio_electricity

b Dependent Variable: SGR_elctricity

Source: SPSS output.

**Coefficients(a)Table 1.6**

| 0 | | $Unstd.Coefficient$ | | $Std.coefficie$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Tolerance$ | $VIF$ | β | Std. Error |
| 1 | (Constant) | -10.691 | 2.553 | | -4.188 | .000 | | |
| | Gross_profit_margin_ratio_Electricity | .343 | .048 | .563 | 7.131 | .000 | .672 | 1.488 |
| | Debt_Equity_ratio_electricity | -3.904 | .702 | -.650 | -5.564 | .000 | .306 | 3.263 |
| | Liquidity_ratio_elctricity | 2.875 | 2.698 | .130 | 1.066 | .298 | .281 | 3.559 |

a Dependent Variable: SGR_elctricity

The results of the table 1.4, 1.5.1.6, confirm that the H01 null for steel industry is rejected for Electricity industry.

Source: SPSS output.

**Cement Industry**

**Model Summary(b) Table 1.7**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .244(a) | .060 | -.063 | 14.78477 | .060 | .487 | 3 | 23 | .695 |

a Predictors: (Constant), Liquidity_ratio_cement, Gross_profit_margin_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: SGR_cement

Source: SPSS output.

**ANOVA(b) Table 1.8**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 319.078 | 3 | 106.359 | .487 | .695(a) |
| | Residual | 5027.557 | 23 | 218.589 | | |
| | Total | 5346.635 | 26 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_cement, Gross_profit_margin_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: SGR_cement

Source: SPSS output.**Coefficients(a) Table 1.9**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | $Std.Erro$ |
| 1 | (Constant) | 182.948 | 229.954 | | .796 | .434 | | |
| | Gross_profit_margin_ratio_cement | -2.060 | 2.734 | -.203 | -.754 | .459 | .561 | 1.783 |
| | Debt_Equity_ratio_cement | -10.839 | 12.029 | -.468 | -.901 | .377 | .152 | 6.595 |
| | Liquidity_ratio_cement | 5.636 | 15.248 | .170 | .370 | .715 | .194 | 5.151 |

a Dependent Variable: SGR_cement

The results of the table 1.7, 1.8.1.9, confirm that the H1 null for cement industry is accepted for steel industry.

Source: SPSS output.

**Auto Industry:**

**Model Summary(b)Table 1.10**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .287(a) | .082 | -.038 | 8.56034 | .082 | .686 | 3 | 23 | .570 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_auto, Gross_profit_margin_ratio_auto, Debt_Equity_ratio_auto

b Dependent Variable: SGR_auto

Source: SPSS output.

**ANOVA(b)Table 1.11**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 150.890 | 3 | 50.297 | .686 | .570(a) |
| | Residual | 1685.426 | 23 | 73.279 | | |
| | Total | 1836.316 | 26 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_auto, Gross_profit_margin_ratio_auto, Debt_Equity_ratio_auto

b Dependent Variable: SGR_auto

Source: SPSS output.

**Coefficients(a)Table 1.12**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | Std. Error |
| 1 | (Constant) | 17.447 | 21.599 | | .808 | .427 | | |
| | Gross_profit_margin_ratio_auto | -.110 | .543 | -.059 | -.203 | .841 | .470 | 2.128 |
| | Debt_Equity_ratio_auto | -6.958 | 13.044 | -.324 | -.533 | .599 | .108 | 9.230 |
| | Liquidity_ratio_auto | -.065 | 11.207 | -.003 | -.006 | .995 | .128 | 7.816 |

a Dependent Variable: SGR_auto

The results of the table 1.10, 1.12.1.12, confirm that the H01 null for Auto industry is accepted for steel industry.

Source: SPSS output.

**Consolidated four Industries**

**Model Summary(b) Table 1.13**

| 0 | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .762(a) | .581 | .526 | 3.15732 | .581 | 10.630 | 3 | 23 | .000 |

$A\ predictors$: ($Constant$), Liquidity_ratio_consolidataed, Gross_profit_margin_ratio_auto_consolidataed, Debt_Equity_ratio_consolidataed

b Dependent Variable: SGR_consolidataed

Source: SPSS output.

**ANOVA(b)Table 1.14**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 317.893 | 3 | 105.964 | 10.630 | .000(a) |
| | Residual | 229.280 | 23 | 9.969 | | |
| | Total | 547.173 | 26 | | | |

$A\ predictors$: ($Constant$), Liquidity_ratio_consolidataed, Gross_profit_margin_ratio_auto_consolidataed, Debt_Equity_ratio_consolidataed

b Dependent Variable: SGR_consolidataed

Source: SPSS output.

**Coefficients(a)Table 1.15**

| 0 | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Tolerance$ | $VIF$ | β | Std. Error |
| 1 | (Constant) | 8.607 | 4.944 | | 1.741 | .095 | | |
| | Gross_profit_margin_ratio_auto_consolidataed | -.093 | .125 | -.128 | -.742 | .466 | .616 | 1.623 |
| | Debt_Equity_ratio_consolidataed | -6.231 | 1.937 | -1.191 | -3.217 | .004 | .133 | 7.518 |
| | Liquidity_ratio_consolidataed | 5.995 | 5.517 | .404 | 1.087 | .288 | .132 | 7.604 |

a Dependent Variable: SGR_consolidataed

Source: SPSS output.

The results of the table 1.7, 1.8.1.9, confirm that the H01 null is rejected industry for consolidated ratios of all industries industry.

**Testing of Hypothesis H02:**

H02: There is no significant relationship between Gross profit margin ratios and Debt equity ratio, Liquidity ratio for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

**Steel Industry:**

**Model Summary(b) Table 2.1**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .842(a) | .708 | .684 | 2.59522 | .708 | 29.138 | 2 | 24 | .000 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_steel, Debt_Equity_ratio_steel

b Dependent Variable: Gross_profit_margin_ratio_steel

Source: SPSS output.

**ANOVA(b) Table2.2**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 392.498 | 2 | 196.249 | 29.138 | .000(a) |
| | Residual | 161.644 | 24 | 6.735 | | |
| | Total | 554.142 | 26 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_steel, Debt_Equity_ratio_steel

b Dependent Variable: Gross_profit_margin_ratio_steel

Source: SPSS output.

**Coefficients(a) Table 2.3**

| Model | | *Unstd. Coefficient* | | *Std. coeffici* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Toleranc* | *VIF* | β | Std. Error |
| 1 | (Constant) | 51.428 | .703 | | 73.204 | .000 | | |
| | Debt_Equity_ratio_steel | -1.566 | .813 | -.369 | -1.926 | .066 | .330 | 3.027 |
| | Liquidity_ratio_steel | -6.836 | 2.560 | -.512 | -2.670 | .013 | .330 | 3.027 |

a Dependent Variable: Gross_profit_margin_ratio_steel

Source: SPSS output.

The results of the table 2.1, 2.2, 2.3, confirm that the H02 null for steel industry is rejected for steel industry.

**Electricity Industry:**

**Model Summary(b)Table 2.4**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .573(a) | .328 | .270 | 8.50302 | .328 | 5.617 | 2 | 23 | .010 |

$A\ predictors$: ($Constant$), Liquidity_ratio_elctricity, Debt_Equity_ratio_electricity

b Dependent Variable: Gross_profit_margin_ratio_Electricity

Source: SPSS output.

**ANOVA(b)Table 2.5**

| Model | | $Sum\ ofSq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 812.277 | 2 | 406.138 | 5.617 | .010(a) |
| | Residual | 1662.933 | 23 | 72.301 | | |
| | Total | 2475.210 | 25 | | | |

$A\ predictors$: ($Constant$), Liquidity_ratio_elctricity, Debt_Equity_ratio_electricity

b Dependent Variable: Gross_profit_margin_ratio_Electricity

Source: SPSS output.

**Coefficients(a) Table 2.6**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | Std. Error |
| 1 | (Constant) | 49.939 | 3.704 | | 13.482 | .000 | | |
| | Debt_Equity_ratio_electricity | -1.243 | 3.026 | -.126 | -.411 | .685 | .309 | 3.239 |
| | Liquidity_ratio_elctricity | -16.788 | 11.142 | -.463 | -1.507 | .145 | .309 | 3.239 |

a Dependent Variable: Gross_profit_margin_ratio_Electricity

The results of the table 2.4, 2.5, 2.6, confirm that the H02 null Hypothesis for Electricity industry is accepted as P value is greater than .05

Source: SPSS output.

**Cement Industry:**

**Model Summary(b) Table 2.7**

| | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .663(a) | .439 | .392 | 1.10391 | .439 | 9.393 | 2 | 24 | .001 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: Gross_profit_margin_ratio_cement

Source: SPSS output.

**ANOVA(b) Table 2.8**

| Model | | $Sum\ ofSq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 22.892 | 2 | 11.446 | 9.393 | .001(a) |
| | Residual | 29.247 | 24 | 1.219 | | |
| | Total | 52.139 | 26 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: Gross_profit_margin_ratio_cement

Source: SPSS output.

**Coefficients(a) Table 2.9**

| | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| 0 | | β | $Std.Erro$ | β | $Tolerance$ | $VIF$ | β | $Std.Erro$ |
| 1 | (Constant) | 84.102 | .291 | | 289.426 | .000 | | |
| | Debt_Equity_ratio_cement | -2.230 | .774 | -.975 | -2.880 | .008 | .204 | 4.902 |
| | Liquidity_ratio_cement | 1.228 | 1.111 | .374 | 1.106 | .280 | .204 | 4.902 |

a Dependent Variable: Gross_profit_margin_ratio_cement

The results of the table 2.7, 2.8, 2.9, confirm that the H02 null Hypothesis for Cement industry is rejected as the significant relationship exist between Gross profit margin and Debt Equity ratio exist.

Source: SPSS output.

**Auto Industry:**

**Model Summary(b) Table 2.10**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .728(a) | .530 | .491 | 3.21630 | .530 | 13.541 | 2 | 24 | .000 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_auto, Debt_Equity_ratio_auto

b Dependent Variable: Gross_profit_margin_ratio_auto

Source: SPSS output.

**ANOVA(b) Table 2.11**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 280.155 | 2 | 140.078 | 13.541 | .000(a) |
| | Residual | 248.269 | 24 | 10.345 | | |
| | Total | 528.425 | 26 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_auto, Debt_Equity_ratio_auto

b Dependent Variable: Gross_profit_margin_ratio_auto

Source: SPSS output.

**Coefficients(a) Table 2.12**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | Std. Error |
| 1 | (Constant) | 39.553 | .819 | | 48.280 | .000 | | |
| | Debt_Equity_ratio_auto | -9.469 | 4.504 | -.821 | -2.103 | .046 | .128 | 7.795 |
| | Liquidity_ratio_auto | 1.085 | 4.205 | .101 | .258 | .799 | .128 | 7.795 |

a Dependent Variable: Gross_profit_margin_ratio_auto

Source: SPSS output.

The results of the table 2.10, 2.11, 2.12, confirm that the H02 null Hypothesis for Auto industry is rejected as the significant relationship exist between Gross profit margin and Debt Equity ratio exist.

**All Industries Ratio:**

**Model Summary(b) Table 2.13**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .620(a) | .384 | .333 | 5.14378 | .384 | 7.477 | 2 | 24 | .003 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_consolidataed, Debt_Equity_ratio_consolidataed

b Dependent Variable: Gross_profit_margin_ratio_auto_consolidataed

Source: SPSS output.

**ANOVA(b) Table 2.14**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 395.646 | 2 | 197.823 | 7.477 | .003(a) |
| | Residual | 635.004 | 24 | 26.458 | | |
| | Total | 1030.650 | 26 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_consolidataed, Debt_Equity_ratio_consolidataed

b Dependent Variable: Gross_profit_margin_ratio_auto_consolidataed

Source: SPSS output.

**Coefficients(a) Table 2.15**

| 0 | | *Unstd. Coefficient* β | *Std. Erro* | *Std. coefficie* β | *t* *Tolerance* | *sig* *VIF* | *Collinearity Statsti* β | Std. Error |
|---|---|---|---|---|---|---|---|---|
| 1 | (Constant) | 38.028 | 2.147 | | 17.710 | .000 | | |
| | Debt_Equity_ratio_consolidataed | -1.960 | 3.130 | -.273 | -.626 | .537 | .135 | 7.397 |
| | Liquidity_ratio_consolidataed | -7.276 | 8.865 | -.358 | -.821 | .420 | .135 | 7.397 |

a Dependent Variable: Gross_profit_margin_ratio_auto_consolidataed

Source: SPSS output.

The null hypothesis is accepted for consolidated ratios of all industries as per the results of table 2.13, 2.14 and 2.15.

**Testing of H03**

H03: There is no significant relationship between GDP growth and macroeconomic variables post liberalization.

**GDP growth and Macro Economic variables:**

**Model Summary(b) Table 3.1**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .661(a) | .438 | .389 | 1.51389 | .438 | 8.946 | 2 | 23 | .001 |

a Predictors: (Constant), call_money_rate_X2, fiscal_dificit_X6

b Dependent Variable: GDP_growth_Y

Source: SPSS output.

**ANOVA(b) Table 3.2**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 41.007 | 2 | 20.504 | 8.946 | .001(a) |
| | Residual | 52.713 | 23 | 2.292 | | |
| | Total | 93.720 | 25 | | | |

$A\ predictors$: $(Constant)$, call_money_rate_X2, fiscal_dificit_X6

b Dependent Variable: GDP_growth_Y

Source: SPSS output.

**Coefficients(a) Table 3.3**

| Model | | Unstd. Coefficient | | Std. coefficient | t | sig | Collinearity Statsti | |
|---|---|---|---|---|---|---|---|---|
| | | β | Std. Erro | β | Tolerance | VIF | β | Std. Erro |
| 1 | (Constant) | 12.047 | 1.413 | | 8.527 | .000 | | |
| | fiscal_dificit_X6 | -.681 | .267 | -.406 | -2.551 | .018 | .968 | 1.033 |
| | call_money_rate_X2 | -.238 | .083 | -.455 | -2.860 | .009 | .968 | 1.033 |

a Dependent Variable: GDP_growth_Y

Source: SPSS output.

The results of the table 3.1, 3.2, 3.3, confirm that the H03 null is rejected.

Testing of Hypothesis:H04: There is no significant relationship between fiscal deficit and D/E, G.P.M and Liquidity ratios, SGR for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

**Fiscal deficit and Debt Equity, Liquidity, Gross profit Margin Ratio for Steel Industry:**

**Model Summary(b) Table 4.1**

| Model | R | $R^2$ | Adj $R^2$ | STD. Erro | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2$Chang | F change | df1 | df2 | sign f chang | $R^2$Chang | F change | df1 | df2 |
| 1 | .715(a) | .511 | .418 | .87989 | .511 | 5.482 | 4 | 21 | .003 |

A predictors: (Constant), Liquidity_ratio_steel, SGR_steel, Debt_Equity_ratio_steel, Gross_profit_margin_ratio_steel; b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**ANOVA(b) Table 4.2**

| Model | | *Sum of Squre* | *df* | *Mean square* | F | *Sig..* |
|---|---|---|---|---|---|---|
| 1 | Regression | 16.976 | 4 | 4.244 | 5.482 | .003(a) |
| | Residual | 16.258 | 21 | .774 | | |
| | Total | 33.234 | 25 | | | |

a Predictors: (Constant), Liquidity_ratio_steel, SGR_steel, Debt_Equity_ratio_steel, Gross_profit_margin_ratio_steel; b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**Coefficients(a) Table 4.3**

| Model | | *Unstd. Coefficient* | | *Std. coeffici* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Toleranc* | *VIF* | β | *Std. Erro* |
| 1 | (Constant) | 11.333 | 3.673 | | 3.085 | .006 | | |
| | Gross_profit_margin_ratio_steel | -.118 | .072 | -.471 | -1.645 | .115 | .284 | 3.519 |
| | Debt_Equity_ratio_steel | -1.042 | .302 | -.984 | -3.449 | .002 | .286 | 3.494 |
| | SGR_steel | -.020 | .007 | -.455 | -2.885 | .009 | .936 | 1.069 |
| | Liquidity_ratio_steel | .663 | 1.008 | .199 | .658 | .518 | .255 | 3.928 |

a Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

The results of the table 4.1, 4.2, 4.3, confirm that the H04 null is rejected.

**Fiscal deficit and Debt Equity, Liquidity, Gross profit Margin Ratio, SGR for Electricity Industry:**

**Model Summary(b) Table 4.4**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .645(a) | .416 | .304 | .96168 | .416 | 3.734 | 4 | 21 | .019 |

$A\ predictors$: ($Constant$), Liquidity_ratio_elctricity, Gross_profit_margin_ratio_Electricity, Debt_Equity_ratio_electricity, SGR_elctricity

b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**ANOVA(b) Table 4.5**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 13.813 | 4 | 3.453 | 3.734 | .019(a) |
| | Residual | 19.422 | 21 | .925 | | |
| | Total | 33.234 | 25 | | | |

$A\ predictors$: ($Constant$), Liquidity_ratio_elctricity, Gross_profit_margin_ratio_Electricity, Debt_Equity_ratio_electricity, SGR_elctricity

b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**Coefficients(a) Table 4.6**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | Std. Error |
| 1 | (Constant) | -.412 | 1.676 | | -.246 | .808 | | |
| | Gross_profit_margin_ratio_Electricity | .139 | .043 | 1.197 | 3.232 | .004 | .203 | 4.929 |
| | Debt_Equity_ratio_electricity | -1.581 | .533 | -1.387 | -2.966 | .007 | .127 | 7.854 |
| | SGR_elctricity | -.259 | .104 | -1.365 | -2.484 | .021 | .092 | 10.850 |
| | Liquidity_ratio_elctricity | 2.828 | 1.355 | .674 | 2.088 | .049 | .267 | 3.743 |

a Dependent Variable: fiscal_dificit_X6. The results of the table 4.4, 4.5, 4.6, confirm that the H04 null is rejected.

Source: SPSS output.

**Fiscal deficit and Debt Equity, Liquidity, Gross profit Margin Ratio for Cement Industry:**

**Model Summary(b) Table 4.7**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .787(a) | .619 | .547 | .77627 | .619 | 8.538 | 4 | 21 | .000 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_cement, SGR_cement, Gross_profit_margin_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**ANOVA(b) Table 4.8**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 20.580 | 4 | 5.145 | 8.538 | .000(a) |
| | Residual | 12.654 | 21 | .603 | | |
| | Total | 33.234 | 25 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_cement, SGR_cement, Gross_profit_margin_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**Coefficients(a) Table 4.9**

| Model | | $Unstd.Coefficient$ | | $Std.coefficie$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Tolerance$ | $VIF$ | β | $Std.Erro$ |
| 1 | (Constant) | 43.370 | 12.481 | | 3.475 | .002 | | |
| | Gross_profit_margin_ratio_cement | -.449 | .148 | -.551 | -3.027 | .006 | .547 | 1.827 |
| | Debt_Equity_ratio_cement | -2.968 | .655 | -1.594 | -4.529 | .000 | .146 | 6.828 |
| | SGR_cement | -.046 | .011 | -.571 | -4.113 | .000 | .940 | 1.063 |
| | Liquidity_ratio_cement | 2.309 | .819 | .864 | 2.820 | .010 | .193 | 5.182 |

a Dependent Variable: fiscal_dificit_X6

The results of the table 4.7, 4.8, 4.9, confirm that the H04 null is rejected.

**Fiscal deficit and Debt Equity, Liquidity, Gross profit Margin Ratio, SGR for Auto Industry:**

**Model Summary(b) Table 4.10**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .392(a) | .154 | -.007 | 1.15712 | .154 | .955 | 4 | 21 | .452 |

a Predictors: (Constant), Liquidity_ratio_auto, SGR_auto, Gross_profit_margin_ratio_auto, Debt_Equity_ratio_auto

b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**ANOVA(b) Table 4.11**

| Model | | $Sum\ ofSq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 5.117 | 4 | 1.279 | .955 | .452(a) |
| | Residual | 28.117 | 21 | 1.339 | | |
| | Total | 33.234 | 25 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_auto, SGR_auto, Gross_profit_margin_ratio_auto, Debt_Equity_ratio_auto

b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**Coefficients(a) Table 4.12**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | $Std.Erro$ |
| 1 | (Constant) | 4.073 | 3.019 | | 1.349 | .192 | | |
| | Gross_profit_margin_ratio_auto | .041 | .075 | .161 | .551 | .588 | .469 | 2.132 |
| | Debt_Equity_ratio_auto | -.606 | 1.809 | -.205 | -.335 | .741 | .107 | 9.344 |
| | SGR_auto | -.040 | .029 | -.289 | -1.379 | .182 | .918 | 1.090 |
| | Liquidity_ratio_auto | -.026 | 1.545 | -.009 | -.017 | .987 | .128 | 7.816 |

a Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

The results of the table 4.10, 4.11, 4.12, confirm that the H04 null is accepted.

**Fiscal deficit and consolidated Debt Equity, Liquidity, Gross profit Margin Ratio for all Industry:**

**Model Summary (b) 4.13**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .851(a) | .724 | .672 | .66055 | .724 | 13.792 | 4 | 21 | .000 |

$A\ predictors$: ($Constant$), Liquidity_ratio_consolidataed, Gross_profit_margin_ratio_auto_consolidataed, SGR_consolidataed, Debt_Equity_ratio_consolidataedb. Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**ANOVA(b) 4.14**

| Model | | $Sum\ ofSq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 24.072 | 4 | 6.018 | 13.792 | .000(a) |
| | Residual | 9.163 | 21 | .436 | | |
| | Total | 33.234 | 25 | | | |

$A\ predictors$: ($Constant$), Liquidity_ratio_consolidataed, Gross_profit_margin_ratio_auto_consolidataed, SGR_consolidataed, Debt_Equity_ratio_consolidataed b Dependent Variable: fiscal_dificit_X6

Source: SPSS output.

**Coefficients(a) 4.15**

| Model | | Unstd. Coefficient | | Std. coeffici | t | sig | Collinearity Statsti | |
|---|---|---|---|---|---|---|---|---|
| | | β | Std. Erro | β | Tolerance | VIF | β | Std. Error |
| 1 | (Constant) | 5.479 | 1.122 | | 4.883 | .000 | | |
| | Gross_profit_margin_ratio_auto_consolidataed | .017 | .027 | .095 | .645 | .526 | .602 | 1.662 |
| | Debt_Equity_ratio_consolidataed | -2.918 | .498 | -2.218 | -5.864 | .000 | .092 | 10.901 |
| | SGR_consolidataed | -.282 | .044 | -1.122 | -6.337 | .000 | .419 | 2.386 |
| | Liquidity_ratio_consolidataed | 4.542 | 1.207 | 1.219 | 3.763 | .001 | .125 | 7.995 |

a Dependent Variable: fiscal_dificit_X6. The results of the table 4.13, 4.14, 4.15, confirm that the H04 null is rejected.

Source: SPSS output.

Testing of Hypothesis H05: There is a no significant relationship between call money rate and D/E G.P.M. and Liquidity ratios, Sustainable growth rate for Steel, Cement, Electricity, Auto and aggregate ratios of all four industries post liberalization.

**Call money rate and Debt Equity, Liquidity, Gross profit Margin Ratio for Steel Industry:**

**Model Summary(b) Table 5.1**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .489(a) | .240 | .095 | 3.52602 | .240 | 1.653 | 4 | 21 | .198 |

$A\ predictors$: ($Constant$), Liquidity_ratio_steel, SGR_steel, Debt_Equity_ratio_steel, Gross_profit_margin_ratio_steel

b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**ANOVA(b) Table 5.2**

| Model | | $Sum\ ofSq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 82.223 | 4 | 20.556 | 1.653 | .198(a) |
| | Residual | 261.089 | 21 | 12.433 | | |
| | Total | 343.312 | 25 | | | |

$A\ predictors$: ($Constant$), Liquidity_ratio_steel, SGR_steel, Debt_Equity_ratio_steel, Gross_profit_margin_ratio_steel; b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**Coefficients(a) Table 5.3**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | $Std.Erro$ |
| 1 | (Constant) | -3.085 | 14.720 | | -.210 | .836 | | |
| | Gross_profit_margin_ratio_steel | .235 | .287 | .292 | .819 | .422 | .284 | 3.519 |
| | Debt_Equity_ratio_steel | -1.271 | 1.210 | -.374 | -1.050 | .306 | .286 | 3.494 |
| | SGR_steel | -.060 | .028 | -.419 | -2.130 | .045 | .936 | 1.069 |
| | Liquidity_ratio_steel | 4.328 | 4.041 | .404 | 1.071 | .296 | .255 | 3.928 |

a Dependent Variable: call_money_rate_X2

The results of the table 5.1, 5.2, 5.3, confirm that the H05 null is accepted.

Source: SPSS output.

**Call money rate and Debt Equity, Liquidity, Gross profit Margin Ratio for Electricity Industry:**

**Model Summary(b) Table 5.4**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .527(a) | .277 | .140 | 3.43701 | .277 | 2.016 | 4 | 21 | .129 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_elctricity, Gross_profit_margin_ratio_Electricity, Debt_Equity_ratio_electricity, SGR_elctricity b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**ANOVA(b) Table 5.5**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 95.238 | 4 | 23.810 | 2.016 | .129(a) |
| | Residual | 248.074 | 21 | 11.813 | | |
| | Total | 343.312 | 25 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_elctricity, Gross_profit_margin_ratio_Electricity, Debt_Equity_ratio_electricity, SGR_elctricity b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**Coefficients(a) Table 5.6**

| Model | | $Unstd.Coefficient$ | | $Std.coefficient$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Toleranc$ | $VIF$ | β | $Std.Erro$ |
| 1 | (Constant) | -1.151 | 5.989 | | -.192 | .849 | | |
| | Gross_profit_margin_ratio_Electricity | .186 | .153 | .498 | 1.211 | .240 | .203 | 4.929 |
| | Debt_Equity_ratio_electricity | .571 | 1.905 | .156 | .300 | .767 | .127 | 7.854 |
| | SGR_elctricity | .123 | .373 | .202 | .331 | .744 | .092 | 10.850 |
| | Liquidity_ratio_elctricity | 2.112 | 4.841 | .157 | .436 | .667 | .267 | 3.743 |

a Dependent Variable: call_money_rate_X2. The results of the table 5.4, 5.5, 5.6, confirm that the H05 null is accepted.

Source: SPSS output.

**Call money rate and Debt Equity, Liquidity, Gross profit Margin Ratio for Cement Industry:**

**Model Summary(b) Table 5.7**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .727(a) | .528 | .438 | 2.77733 | .528 | 5.877 | 4 | 21 | .002 |

$A\ predictors$: ($Constant$), Liquidity_ratio_cement, SGR_cement, Gross_profit_margin_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**ANOVA(b) Table 5.8**

| Model | | *Sum of Sq* | *df* | *Mean squar* | F | *Sig..* |
|---|---|---|---|---|---|---|
| 1 | Regression | 181.327 | 4 | 45.332 | 5.877 | .002(a) |
| | Residual | 161.985 | 21 | 7.714 | | |
| | Total | 343.312 | 25 | | | |

*A predictors*: (*Constant*), Liquidity_ratio_cement, SGR_cement, Gross_profit_margin_ratio_cement, Debt_Equity_ratio_cement

b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**Coefficients(a) 5.9**

| Model | | *Unstd. Coefficient* | | *Std. coeffici* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Toleranc* | *VIF* | β | Std. Error |
| 1 | (Constant) | -83.060 | 44.655 | | -1.860 | .077 | | |
| | Gross_profit_margin_ratio_cement | 1.082 | .530 | .413 | 2.041 | .054 | .547 | 1.827 |
| | Debt_Equity_ratio_cement | -6.152 | 2.345 | -1.028 | -2.624 | .016 | .146 | 6.828 |
| | SGR_cement | .023 | .040 | .091 | .588 | .563 | .940 | 1.063 |
| | Liquidity_ratio_cement | 10.000 | 2.930 | 1.165 | 3.413 | .003 | .193 | 5.182 |

a Dependent Variable: call_money_rate_X2

Source: SPSS output.

The results of the table 5.7, 5.8, 5.9, confirm that the H05 null is rejected.

**Call money rate and Debt Equity, Liquidity, Gross profit Margin Ratio for Auto Industry:**

**Model Summary(b) Table 5.10**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .551(a) | .303 | .171 | 3.37446 | .303 | 2.287 | 4 | 21 | .094 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_auto, SGR_auto, Gross_profit_margin_ratio_auto, Debt_Equity_ratio_auto

b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**ANOVA(b) Table 5.11**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 104.186 | 4 | 26.046 | 2.287 | .094(a) |
| | Residual | 239.126 | 21 | 11.387 | | |
| | Total | 343.312 | 25 | | | |

$A\ predictors$: $(Constant)$, Liquidity_ratio_auto, SGR_auto, Gross_profit_margin_ratio_auto, Debt_Equity_ratio_auto; b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**Coefficients(a) Table 5.12**

| Model | | Unstd. Coefficient | | Std. coefficient | t | sig | Collinearity Statstt | |
|---|---|---|---|---|---|---|---|---|
| | | β | Std. Error | β | Tolerance | VIF | β | Std. Error |
| 1 | (Constant) | -9.080 | 8.805 | | -1.031 | .314 | | |
| | Gross_profit_margin_ratio_auto | .453 | .219 | .551 | 2.072 | .051 | .469 | 2.132 |
| | Debt_Equity_ratio_auto | -5.975 | 5.276 | -.631 | -1.133 | .270 | .107 | 9.344 |
| | SGR_auto | -.047 | .084 | -.107 | -.563 | .579 | .918 | 1.090 |
| | Liquidity_ratio_auto | 7.603 | 4.505 | .859 | 1.688 | .106 | .128 | 7.816 |

a Dependent Variable: call_money_rate_X2

Source: SPSS output.

The results of the table 5.10, 5.11, 5.12, confirm that the H05 null is accepted.

**Call money rate and consolidated Debt Equity, Liquidity, Gross profit Margin Ratio for All Industry.**

**Model Summary(b) Table 5.13**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .458(a) | .210 | .060 | 3.59329 | .210 | 1.397 | 4 | 21 | .269 |

$A\ predictors$: $(Constant)$, Liquidity_ratio_consolidataed, Gross_profit_margin_ratio_auto_consolidataed, SGR_consolidataed, Debt_Equity_ratio_consolidataed; b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**ANOVA(b) Table 5.14**

| Model | | *Sum of Sq* | *df* | *Mean squar* | F | *Sig..* |
|---|---|---|---|---|---|---|
| 1 | Regression | 72.166 | 4 | 18.041 | 1.397 | .269(a) |
| | Residual | 271.146 | 21 | 12.912 | | |
| | Total | 343.312 | 25 | | | |

*A predictors*: (*Constant*), Liquidity_ratio_consolidataed, Gross_profit_margin_ratio_auto_consolidataed, SGR_consolidataed, Debt_Equity_ratio_consolidataed; b Dependent Variable: call_money_rate_X2

Source: SPSS output.

**Coefficients(a) Table 5.15**

| Model | | *Unstd. Coefficient* | | *Std. coefficie* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Tolerance* | *VIF* | β | Std. Error |
| 1 | (Constant) | -2.406 | 6.104 | | -.394 | .697 | | |
| | Gross_profit_margin_ratio_auto_consolidataed | .301 | .147 | .512 | 2.048 | .053 | .602 | 1.662 |
| | Debt_Equity_ratio_consolidataed | -1.169 | 2.707 | -.277 | -.432 | .670 | .092 | 10.901 |
| | SGR_consolidataed | -.128 | .242 | -.158 | -.527 | .604 | .419 | 2.386 |
| | Liquidity_ratio_consolidataed | 4.049 | 6.565 | .338 | .617 | .544 | .125 | 7.995 |

a Dependent Variable: call_money_rate_X2. The results of the table 5.13, 5.14, 5.15, confirm that the H05 null is accepted.

Source: SPSS output.

**Testing of Hypothesis H06:**

H06: There is no significant relationship between SGR for Steel, Auto, Electricity, Cement and consolidated data of all four industries and GDP growth

**SGR and GDP growth for steel industry:**

**Model Summary(b) Table 6.1**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .355(a) | .126 | .090 | 24.99999 | .126 | 3.458 | 1 | 24 | .075 |

$A\ predictors$: $(Constant)$, GDP_growth_Y,

b Dependent Variable: SGR_steel

Source: SPSS output.

**ANOVA(b) Table 6.2**

| Model | | $Sum\ of Squ$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 2161.283 | 1 | 2161.283 | 3.458 | .075(a) |
| | Residual | 14999.991 | 24 | 625.000 | | |
| | Total | 17161.274 | 25 | | | |

$A\ predictors$: $(Constant)$, GDP_growth_Y

b Dependent Variable: SGR_steel

Source: SPSS output.

**Coefficients(a) Table 6.3**

| Model | | *Unstd. Coefficient* | | *Std. coeffici* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Toleranc* | *VIF* | β | *Std. Erro* |
| 1 | (Constant) | -24.625 | 17.983 | | -1.369 | .184 | | |
| | GDP_growth_Y | 4.802 | 2.582 | .355 | 1.860 | .075 | 1.000 | 1.000 |

a Dependent Variable: SGR_steel

Source: SPSS output.

The outcome of the table six point one, two and three, confirm that the null hypothesis H06 is accepted:

**SGR and GDP growth for Electricity industry:**

**Model Summary(b) Table 6.4**

| Model | *R* | $R^2$ | *Adj* $R^2$ | *STD. Erro* | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2$*Chang* | *F change* | $df1$ | $df2$ | *sign f chang* | $R^2$*Chang* | *F change* | $df1$ | $df2$ |
| 1 | .269(a) | .073 | .034 | 5.96527 | .073 | 1.877 | 1 | 24 | .183 |

a Predictors: (Constant), GDP_growth_Y

b Dependent Variable: SGR_elctricity

Source: SPSS output.

**ANOVA(b) Table 6.5**

| Model | | *Sum of Sq* | *df* | *Mean squar* | F | *Sig..* |
|---|---|---|---|---|---|---|
| 1 | Regression | 66.798 | 1 | 66.798 | 1.877 | .183(a) |
| | Residual | 854.027 | 24 | 35.584 | | |
| | Total | 920.826 | 25 | | | |

*A predictors*: (*Constant*), GDP_growth_Y

b Dependent Variable: SGR_elctricity

Source: SPSS output.

**Coefficients(a) Table 6.6**

| Model | | *Unstd. Coefficient* | | *Std. coefficie* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Toleranc* | *VIF* | β | Std. Error |
| 1 | (Constant) | 8.270 | 4.291 | | 1.927 | .066 | | |
| | GDP_growth_Y | -.844 | .616 | -.269 | -1.370 | .183 | 1.000 | 1.000 |

a Dependent Variable: SGR_elctricity

Source: SPSS output.

The outcome of the table six point four, five and six, confirm that the H06 null is accepted.

**SGR and GDP growth for Cement industry:**

**Model Summary (b) Table 6.7**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .287(a) | .083 | .044 | 14.22907 | .083 | 2.159 | 1 | 24 | .155 |

$A\ predictors$: $(Constant)$, GDP_growth_Y

b Dependent Variable: SGR_cement

Source: SPSS output.

**ANOVA(b) Table 6.8**

| Model | | $Sum\ ofSq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 437.192 | 1 | 437.192 | 2.159 | .155(a) |
| | Residual | 4859.194 | 24 | 202.466 | | |
| | Total | 5296.386 | 25 | | | |

$A\ predictors$: $(Constant)$, GDP_growth_Y

b Dependent Variable: SGR_cement

Source: SPSS output.

**Coefficients(a) Table 6.9**

| Model | | $Unstd.Coefficient$ | | $Std.coeffici$ | $t$ | $sig$ | $Collinearity\ Statsti$ | |
|---|---|---|---|---|---|---|---|---|
| | | β | $Std.Erro$ | β | $Tolerance$ | $VIF$ | β | Std. Error |
| 1 | (Constant) | -6.495 | 10.235 | | -.635 | .532 | | |
| | GDP_growth_Y | 2.160 | 1.470 | .287 | 1.469 | .155 | 1.000 | 1.000 |

a Dependent Variable: SGR_cement

Source: SPSS output.

The outcome of the table six point seven, eight and nine, confirm that the H06 null is accepted

**SGR and GDP growth for Auto industry:**

**Model Summary(b) Table 6.10**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .491(a) | .241 | .210 | 7.61134 | .241 | 7.628 | 1 | 24 | .011 |

$A\ predictors$: $(Constant)$, GDP_growth_Y

b Dependent Variable: SGR_auto

Source: SPSS output.

**ANOVA(b) Table 6.11**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 441.926 | 1 | 441.926 | 7.628 | .011(a) |
| | Residual | 1390.379 | 24 | 57.932 | | |
| | Total | 1832.305 | 25 | | | |

$A\ predictors$: $(Constant)$, GDP_growth_Y

b Dependent Variable: SGR_auto

Source: SPSS output.

**Coefficients(a) Table 6.12**

| Model | | *Unstd. Coefficient* | | *Std. coefficient* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Tolerance* | *VIF* | β | Std. Error |
| 1 | (Constant) | -3.280 | 5.475 | | -.599 | .555 | | |
| | GDP_growth_Y | 2.171 | .786 | .491 | 2.762 | .011 | 1.000 | 1.000 |

a Dependent Variable: SGR_auto

Source: SPSS output.

The outcome of the table six point ten, eleven and twelve, confirm that the H06 null is rejected SGR.

**Consolidated SGR of all industries and GDP growth**

**Model Summary(b) Table 6.13**

| Model | *R* | $R^2$ | *Adj* $R^2$ | *STD. Erro* | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2$*Chang* | *F change* | $df1$ | $df2$ | *sign f chang* | $R^2$*Chang* | *F change* | $df1$ | $df2$ |
| 1 | .271(a) | .073 | .035 | 4.57945 | .073 | 1.904 | 1 | 24 | .180 |

a Predictors: (Constant), GDP_growth_Y

b Dependent Variable: All_industry_SGR_

Source: SPSS output.

**ANOVA(b) Table 6.14**

| Model | | *Sum of Sq* | *df* | *Mean squar* | F | *Sig..* |
|---|---|---|---|---|---|---|
| 1 | Regression | 39.922 | 1 | 39.922 | 1.904 | .180(a) |
| | Residual | 503.313 | 24 | 20.971 | | |
| | Total | 543.235 | 25 | | | |

*A predictors*: (*Constant*), GDP_growth_Y

b Dependent Variable: All_industry_SGR_

Source: SPSS output.

**Coefficients(a) Table 6.15**

| Model | | *Unstd. Coefficient* | | *Std. coeffici* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Toleranc* | *VIF* | β | *Std. Erro* |
| 1 | (Constant) | -.279 | 3.294 | | -.085 | .933 | | |
| | GDP_growth_Y | .653 | .473 | .271 | 1.380 | .180 | 1.000 | 1.000 |

a Dependent Variable: All_industry_SGR_

Source: SPSS output.

The outcome of the table 6.13, 6.14, 6.15, confirm that the H06 null is accepted.

**Testing of Hypothesis**

H07: There is no significant relationship between gross profit margin ratio of Steel, Cement, Electricity, Auto, and aggregate gross profit margin of all four Industries and fiscal deficit and call money rate.

Gross profit margin ratio of Steel and Call money rate and fiscal deficit

**Model Summary(b) Table 7.1**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .152(a) | .023 | -.062 | 4.73902 | .023 | .272 | 2 | 23 | .764 |

$A\ predictors$: $(Constant)$, fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_steel

Source: SPSS output.

**ANOVA(b) Table 7.2**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 12.239 | 2 | 6.120 | .272 | .764(a) |
| | Residual | 516.541 | 23 | 22.458 | | |
| | Total | 528.780 | 25 | | | |

$A\ predictors$: $(Constant)$,fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_steel

Source: SPSS output.

**Coefficients(a) Table 7.3**

| Model | | Unstd. Coefficient | | Std. coeffici | t | sig | Collinearity Statsti | |
|---|---|---|---|---|---|---|---|---|
| | | β | Std. Erro | β | Toleranc | VIF | β | Std. Error |
| 1 | (Constant) | 46.632 | 4.423 | | 10.544 | .000 | | |
| | call_money_rate_X2 | .189 | .260 | .152 | .726 | .475 | .968 | 1.033 |
| | fiscal_dificit_X6 | .002 | .836 | .001 | .002 | .998 | .968 | 1.033 |

a Dependent Variable: Gross_profit_margin_ratio_steel. The results of the table 7.1, 7.2, 7.3 confirm that null hypothesis is accepted.

Source: SPSS output.

**Gross profit margin ratio of Electricity and Call money rate and fiscal deficit**

**Model Summary(b) Table 7.4**

| Model | R | $R^2$ | Adj $R^2$ | STD. Erro | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2$Chang | F change | df1 | df2 | sign f chang | $R^2$Chang | F change | df1 | df2 |
| 1 | .589(a) | .347 | .290 | 8.38577 | .347 | 6.099 | 2 | 23 | .007 |

a Predictors: (Constant), fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_Electricity

Source: SPSS output.

**ANOVA(b) Table 7.5**

| Model | | *Sum of Sq* | *df* | *Mean squar* | F | *Sig..* |
|---|---|---|---|---|---|---|
| 1 | Regression | 857.825 | 2 | 428.913 | 6.099 | .007(a) |
| | Residual | 1617.385 | 23 | 70.321 | | |
| | Total | 2475.210 | 25 | | | |

*A predictors*: (*Constant*) fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_Electricity

Source: SPSS output.

**Coefficients(a) Table 7.6**

| Model | | *Unstd. Coefficient* | | *Std. coefficie* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Tolerance* | *VIF* | β | Std. Error |
| 1 | (Constant) | 18.595 | 7.826 | | 2.376 | .026 | | |
| | call_money_rate_X2 | 1.175 | .460 | .438 | 2.554 | .018 | .968 | 1.033 |
| | fiscal_dificit_X6 | 2.786 | 1.479 | .323 | 1.884 | .072 | .968 | 1.033 |

a Dependent Variable: Gross_profit_margin_ratio_Electricity

Source: SPSS output.

The results of the table 7.4, 7.5, 7.6 confirm that null hypothesis is rejected.

**Gross profit margin ratio of Cement and Call money rate and fiscal deficit**

**Model Summary(b) Table 7.7**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .499(a) | .249 | .184 | 1.25705 | .249 | 3.819 | 2 | 23 | .037 |

$A\ predictors$: $(Constant)$, fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_cement

Source: SPSS output.

**ANOVA(b) Table 7.8**

| Model | | $Sum\ of Sq$ | $df$ | $Mean\ squar$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 12.070 | 2 | 6.035 | 3.819 | .037(a) |
| | Residual | 36.344 | 23 | 1.580 | | |
| | Total | 48.414 | 25 | | | |

$A\ predictors$: $(Constant)$ fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_cement

Source: SPSS output.

**Coefficients(a) Table 7.9**

| Model | | *Unstd.Coefficient* | | *Std.coeffici* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std.Erro* | β | *Tolerance* | *VIF* | β | Std. Error |
| 1 | (Constant) | 82.296 | 1.173 | | 70.150 | .000 | | |
| | call_money_rate_X2 | .190 | .069 | .506 | 2.757 | .011 | .968 | 1.033 |
| | fiscal_dificit_X6 | -.068 | .222 | -.056 | -.305 | .763 | .968 | 1.033 |

a Dependent Variable: Gross_profit_margin_ratio_cement

Source: SPSS output.

The results of the table 7.7, 7.8, 7.9 confirm that null hypothesis is rejected.

**Gross profit margin ratio of Auto and Call money rate and fiscal deficit**

**Model Summary(b) Table 7.10**

| Model | *R* | $R^2$ | *Adj* $R^2$ | *STD.Erro* | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2$*Chang* | *F change* | $df1$ | $df2$ | *sign f chang* | $R^2$*Chang* | *F change* | $df1$ | $df2$ |
| 1 | .461(a) | .212 | .144 | 4.05006 | .212 | 3.099 | 2 | 23 | .064 |

*A predictors*: (*Constant*) fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_auto

Source: SPSS output.

**ANOVA(b) Table 7.11**

| Model | | *Sum of Sq* | *df* | *Mean squar* | F | *Sig..* |
|---|---|---|---|---|---|---|
| 1 | Regression | 101.659 | 2 | 50.830 | 3.099 | .064(a) |
| | Residual | 377.269 | 23 | 16.403 | | |
| | Total | 478.928 | 25 | | | |

*A predictors*: (*Constant*) fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: Gross_profit_margin_ratio_auto

Source: SPSS output.

**Coefficients(a) Table 7.12**

| Model | | *Unstd. Coefficient* | | *Std. coeffici* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std. Erro* | β | *Tolerance* | *VIF* | β | Std. Error |
| 1 | (Constant) | 30.081 | 3.780 | | 7.958 | .000 | | |
| | call_money_rate_X2 | .452 | .222 | .383 | 2.034 | .054 | .968 | 1.033 |
| | fiscal_dificit_X6 | .747 | .714 | .197 | 1.046 | .306 | .968 | 1.033 |

a Dependent Variable: Gross_profit_margin_ratio_auto

Source: SPSS output.

The results of the table 7.10, 7.11, 7.12 confirm that null hypothesis is accepted.

**Aggregate gross profit margin ratio of all Indus tries and Call money rate and fiscal deficit**

**Model Summary(b) Table 7.13**

| Model | $R$ | $R^2$ | $Adj\ R^2$ | $STD.Erro$ | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ | $sign\ f\ chang$ | $R^2Chang$ | $F\ change$ | $df1$ | $df2$ |
| 1 | .479(a) | .229 | .162 | 5.87592 | .229 | 3.424 | 2 | 23 | .050 |

$A\ predictors$: $(Constant)$ fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: All_industry_Gross_profit_margin_ratio_All

Source: SPSS output.

**ANOVA(b) Table 7.14**

| Model | | $Sum\ ofSqur$ | $df$ | $Mean\ square$ | F | $Sig..$ |
|---|---|---|---|---|---|---|
| 1 | Regression | 236.458 | 2 | 118.229 | 3.424 | .050(a) |
| | Residual | 794.109 | 23 | 34.526 | | |
| | Total | 1030.566 | 25 | | | |

$A\ predictors$: $(Constant)$ fiscal_dificit_X6, call_money_rate_X2

b Dependent Variable: All_industry_Gross_profit_margin_ratio_All

Source: SPSS output.

**Coefficients(a) Table 7.15**

| Model | | *Unstd.Coefficient* | | *Std.coefficien* | *t* | *sig* | *Collinearity Statsti* | |
|---|---|---|---|---|---|---|---|---|
| | | β | *Std.Erro* | β | *Tolera* | *VIF* | β | *Std.Erro* |
| 1 | (Constant) | 22.083 | 5.484 | | 4.027 | .001 | | |
| | call_money_rate_X2 | .651 | .322 | .376 | 2.018 | .055 | .968 | 1.033 |
| | fiscal_dificit_X6 | 1.322 | 1.036 | .237 | 1.276 | .215 | .968 | 1.033 |

a Dependent Variable: All_industry_Gross_profit_margin_ratio_All

Source: SPSS output.

The results of the table 7.13, 7.14, 7.15 confirm that null hypothesis is accepted.

# Chapter V

## Conclusions, Recommendation, Scope of further study and Limitations of the study

## 5: A: Conclusions about four Industries and aggregate ratios of all industries are as under:

### 5.1: Conclusion about steel Industry:

For increasing sustainable growth, industry should focus more on technology, productivity or other non financial factors. For increasing profitability, industry should focus more on lesser liquidity ratio. Industry can help government to keep fiscal deficit low by keeping industry growing, with more long term debt. If industry helps government, government will reciprocate by helping industry as working together is in the interest of both. If industry manages to grow, long term finances will be available to industry at lesser price which is beneficial the industry.

Sustainable growth of steel industry is not influence by debt equity ratio, gross profit margin ratio and liquidity ratio.

The Gross profit margin ratio is influenced by liquidity ratio. Since the beta of liquidity ratio is negative, industry can be profitable even with larger current liability Debt equity ratio is not influencing gross profit margin ratio.

Fiscal deficit is also influenced by SGR and debt equity ratio. The sign of beta for both is negative showing, higher the SGR and debt equity lower the fiscal deficit of the government. Industry can contribute to lower fiscal deficit by achieving higher SGR and debt equity ratio. However to rely on long term debt is the choice of the industry.

Similarly call money rate is influence by only SGR. The relationship is negative. All other ratios such as liquidity, debt equity and gross profit

margin are not influencing call money rate. It means if industry keeps on growing faster debt can be available at lesser price.

No relationship is seen between SGR and GDP growth. Gross profit margin of Steel is not influenced by call money rate and fiscal deficit.

### 5.2: Conclusion about Electricity Industry:

To maintain the growth industry should maintain profitability at the same time rely more on equity capital. Industry can also help government to keep fiscal deficit low if industry manage to grow with more long term borrowed fund. If industry helps government, government will reciprocate by helping industry as going together is in the interest of both.

SGR of electricity is influenced by debt equity ratio, gross profit margin ratio. Beta of gross profit margin positive, higher the gross profit margin, higher is the SGR. Beta of debt equity being negative, higher is the debt equity ratio lower is the SGR. Liquidity ratio is insignificant in influencing SGR.

No significant relationship is seen between gross profit margin and debt equity ratio and liquidity ratio.

Fiscal deficit is influenced by SGR, liquidity ratio, debt equity ratio and gross profit margin ratio. Beta of debt equity ratio and SGR being negative lower the SGR and debt equity ratio higher is the fiscal deficit. Electricity industry can also contribute in keeping lower fiscal deficit by having higher SGR.

No relationship is observed between call money rate and SGR, liquidity ratio, debt equity ratio and gross profit margin ratio.

SGR is not influenced by GDP growth.

No relationship is seen between call money rate and gross profit margin, D/E, liquidity and SGR.

### 5.3: Conclusion about Cement Industry:

To remain more profitable company should raise capital by way of equity. Industry can help government to keep budget deficit lower by maintaining growth rate, remaining more profitable. If industry helps government, government will reciprocate by helping industry as going together is in the interest of both.

Relationship between SGR and debt equity ratio, gross profit margin ratio and liquidity ratio is not seen.

Gross profit is influenced by debt equity ratio. Fiscal deficit is influenced by SGR, debt equity and liquidity ratio and gross profit margin ratio. Beta of SGR, debt equity and gross profit margin ratio being negative, industry can help government to keep fiscal deficit lower by keeping higher SGR and being more profitable. Similarly, higher is the debt equity ratio lower the fiscal deficit. If industry can manage with lower debt fiscal deficit will be lower as relationship is inverse. The relationship between liquidity ratio and fiscal deficit is positive. Industry can contribute in helping government in controlling fiscal deficit by keeping lower liquidity ratio.

Call money rate is inversely related to debt equity ratio and directly related to liquidity ratio.

No relationship is seen between SGR and GDP growth

A direct insignificant relationship is seen between gross profit margin and call money rate.

### 5.4: Conclusion about Auto Industry:

To become more profitable industry should relay on equity capital. Growth of industry depends upon GDP growth. To become more profitable and to maintain growth industry is required to explore other financial ratios or focus more on non financial factors such as technology, productivity etc. for which further research is required.

No relationship is seen between SGR and debt equity ratio, gross profit

margin ratio, liquidity ratio.

The negative relationship is seen between gross profit ratio and debt equity ratio.

No relationship is seen between fiscal deficit and gross profit margin, debt equity ratio, liquidity ratio and SGR. No relationship is seen between call money and debt equity ratio, gross profit margin ratio, liquidity ratio and SGR

Positive relationship is seen between SGR of auto and GDP growth. If the GDP is growing there is sustainable growth in auto industries. This is also theoretically true.

No relationship is seen between call money and debt equity ratio, gross profit margin ratio, liquidity ratio and SGR

**5.5: Conclusion about all four industries ratios:**

Fiscal deficit is influence by debt equity, SGR and is inversely related to them.

SGR of all four industries is only influenced by debt equity ratio. Beta of debt equity is negative it means lower the debt equity ratio higher is the SGR. Other factors such as liquidity and gross profit margin are insignificant in influencing SGR.

With regards to gross profit margin, since F calculated is greater than its table value null hypothesis is rejected. However gross profit margin is not influenced by liquidity ratio and debt equity ratio as P is greater than

0.05. It means both the variables are insignificant in estimating gross profit margin ratio.

Fiscal deficit is influenced by debt equity ratio, SGR and liquidity ratio of all industries. Variables are significant. Relationship between SGR and debt equity is inverse where as it is direct for liquidity ratio. Gross profit margin is insignificant in influencing fiscal deficit.

Call money rate is not influenced by debt equity ratio, SGR and liquidity

ratio and gross profit margin ratio of all industries.

SGR of all industries is not influenced by GDP growth.

Gross profit margin of all industries is not influenced by call money rate and fiscal deficit.

## V. B: Recommendations:

### Steel Industry:

Industry can help government to keep fiscal deficit low.

For sustainable growth industry should focus on non financial factors.

Industry can be profitable with more long term borrowing.

### Electricity Industry:

For sustainable growth industry required to maintain profitability.

Profitability can be maintained if industry relies on equity capital.

Industry can help government to keep fiscal deficit low.

### Cement Industry:

To remain profitable industry should rely more on equity.

Industry can contribute for keeping fiscal deficit low it manages to grow and being more profitable.

Industry and government help each other for mutual benefit.

### Auto Industry:

Growth of auto industry is depending on GDP growth.

To be profitable industry should focus more on non financial factors such as better utilization of resources, technology etc.

### Recommendations to Government Policy makers:

GDP growth is influenced by call money rate and fiscal deficit. It is recommended that should keep a watch on fiscal deficit and ensure lower call money rate by managing liquidity in the market.

## 5. C: Scope of Further Research:

Steel: Finance ratios which are playing crucial role in influencing SGR can be studied.

Other factors influencing profitability of steel industry can be investigated.

Electricity: Debt equity and liquidity ratio are insignificant in influencing gross profit margin ratio, hence several other financial ratios which need to be investigated which are influencing profitability of electricity.

Cement: Factors vital for influencing SGR needs to be investigated further.

Auto industry: Factors vital for SGR of auto industry can be investigated.

## 5. D: Limitations of the study:

The entire research is based on secondary data. All the limitations of secondary data are applicable to this research.

In this study four finance ratios are considered. There are major six types of ratios. In each major type there are several subtypes. To make

observations about financial health of an industry, all ratios needs to be study.

The study is confined to only four industries of Indian economy. India is made up of several industries and contribution of each industry in the process of growth and development is vital and can't be overlooked.

The period of study is post liberalization since 1991.

# Chapter VI

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## VI B: LIST OF ABBREVIATIONS

SGR: Sustainable Growth Rate.

GDP: Gross Domestic Product

D/E Ratio: Debt Equity Ratio

ROE: Return on Equity

b: Retention Ratio.

G.V.A: Gross Value Added

F.D.I: Foreign Direct Investment

FRBM: Fiscal Responsibility and Budget Management Act

PSU: Public Sector Units

LIC: Life Insurance Corporation

UTI: Unit Trust of India

RBI: Reserve Bank of India

ROA: Return on Asset

INR: Currency Code for India Rupee.

FY: Fiscal Year

UK: United Kingdom

USA: United States of America

HYV: High Yielding Variety

GST: Goods and Services Tax

CPI: Consumer Price Index

CAD: Current Account Deficit

GOI: Government of India

IMF: International Monetary Fund

IDBI: Industrial Development Bank of India

NABARD: National Bank for Agriculture and Rural Development

GIC: General Insurance Corporation

CMIE: Centre for Monitoring Indian Economy.

GPM: Gross profit Margin