

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Public Enterprises (PEs) or corporation are industrial and commercial undertaking of the government which are specially created by an act of the parliament or companies registered under the company act. Government undertakes the ownership either fully or partly. So public enterprises are antonymous or semi antonymous body. These are institution spreading service as independent legal entity, largely antonymous is management.

Public enterprises are those enterprises which are owned managed and controlled by the government. Such enterprises are run mainly to provide service to the people of country. These enterprises are generally established as autonomous or semi autonomous bodies.

Before the industrial revolution in England, the roles of the government were to maintain rules and orders, internal security and defense from foreign attack and the construction and maintenance of religious matter and cultural properties etc. At that time economic sectors were not controlled by the government consequently labours were exploited by wealthy persons. The handling of the business activities by the private sector caused the concentration of the means of productions in the hand of limited persons. Private sector essentially aimed at profit maximization and therefore couldn't ensure a full public service at the alter of probability. It leads the government to enter in to the business activities especially in public sector like water electricity, communication, banking, insurance etc. In order to save the general people from the exploitation and to promote and expedite the development of backwards area public enterprise came into being as a need. In other words government of different countries started to own and manage some of the industrial and trading undertaking fully or partly (with major portion) in order to supply goods and service of public utilities to its countrymen. This type of business undertaking are known as public enterprises.

Thus a public enterprises may be defined as an industrial and commercial undertaking with some privileges in order to supply goods and service of basic utilities under a full or partial ownership and control of the state of government. It is an autonomous or semi autonomous body. There are various types of public enterprises.

On the basis of organization and management, public enterprises can be divided into four types:

- i) Department undertaking
- ii) Public corporation
- iii) Government company
- iv) Development board.

The development of 'public enterprises in Nepal started simultaneously with the initiation of first five years plans 1956 A.D. The needs of developing public enterprises was felts for balanced economic development, social justice, public welfare, employment opportunity and so on. Nepal adopted planned economic development since 1956 A.D. In the basic economic objective, his majesty Government has been complied to established different types of public enterprises.

Nepal is poor and developing country. Private investor were not able and ready to needs of infrastructure. So the government had to play a vital role for the establishment of basic industries which can be transferred to private sector.

Nepal banks limited is the first public enterprises of Nepal which was established in 1937 under private sector. However in 1952 Nepal government participate and controlled 51% of the total share capital of it. Now a days different enterprises are incorporated in different economic sector like Nepal electricity Authority (NEA), Kathmandu Upatyaka Khanepani Limited (KUKL) in public utility service sector : Agriculture development banks, Rastriya Banijya Banks, Nepal Industrial Development Corporation (NIDC) etc in banking sector:: Nepal oil corporation; National trading limit ed in trading sector, Diary Development Corporation (DDC) Birgunj Sugar Factory Limited (BSFL), Hetauda cement industry limited (HCIL) in industrial sector, Gorkhapatra Sansthan, Radio Nepal, Nepal Television etc. in social and service sector and so forth.

1.2 Meaning and definition of public enterprises.

Due to the profit motive and intention of rapid growth in business, private sector generally do not enter in service area and the field where there is needs of large investment in infrastructure, one to these reasons, government should under take the service sector fully or partially. So public enterprises are antonymous or semi antonymous body. Public enterprises in an institution spreading or service of an economic or social character on independent legal entity largely antonymous in its management though responsible to public through government. It is the industrial, commercial and economic activities, carried on by the central and state government and in each case either solely or in association with private enterprises, so long it is managed by self contained management.

"Public enterprises are defined as those productive enterprises, organization which are owned or controlled by public authorities and whose output is market.

-Soel workshop on performance of Public Enterprises in Asia.

"Public enterprises means state ownership and operation of industrial, agricultural, financial and commercial undertakings."

-A.H. Hanson

"Public enterprises are those organizations namely governmental enterprises and public corporation which are entirely or mainly owned and / or control by the public authorized consisting of establishment which by venture of there kind of activities technology and model of operation are classified as industries.

-United Nation: A System of National Accounts.

On the basis of definition cited above public enterprises is conclude as

- Autonomous or semi autonomous body.
- Ownership of PE remains on government fully or partly.
- Works as an artificial persons.
- Has social responsibility and accountability.

1.3 Evolution of Public Enterprises (PEs) in Nepal

After the introduction of democracy in 1950 A.D. a business environment also emerged in Nepal. Apart from the regular activities; HMG/Nepal has initiated a system of establishment and functioning of public enterprises and made huge investment with an objective of speeding economic development.

1.3.1 The First Five Years Plan (1956-61)

For the development of industrialization in Nepal has adopted the first Five Years Plan. In this period the government has adopted the principle of mixed economy. Utilities industries were preserved for the public sector investment that promised greater public welfare and which fails to attract private investment where as industrial sector was left upon to private sector with government supports service if needed.

During the plan seven PEs were established in conformity with nations objective. The PEs established in this period were :

- Asahaya Kalyan Corporations.
- Royal Nepal Airlines.
- Nepal Industrial development Corporations.
- Balaju Industrial Estate.
- Balaju Yantra Shala Ltd.
- Raghupati Jute Mills LTd.
- Timbers Corporation of Nepal.

1.3.2 The Interim Period (1961-62)

This period was marked by establishment of following PEs:

-) Ratna Recording Sansthan.
-) National Trading Limited.
-) National Construction Company of Nepal

This period marked by the declaration by the HMG/Nepal industries policy as laid down in the industrial enterprises Act of May 28,1961, which was adopted the PEs on the same line and basis as per the first plan.

1.3.3 The Second Three-Years Plan (1962-65)

The plan was stated to encourage domestic private capital and foreign capital towards industrial development. The policy is incorporated in the industrial enterprises act 208 May 1961. Which was amended in 1961,1963, 1966 and 1969 and replaced by industrial enterprises act 1974.

During second three years plan eleven PEs established, some of them were

-) Employees Provident Fund
-) Gorkhapatra SANSTHAN
-) Nepal Electricity Corporation
-) Heatuda Industrial Estate
-) Nepalese Carpet Private Ltd
-) Patan industrial estate
-) Rastriya Banijya Banks
-) Birgunj Sugar Factory
-) Janakpur Carpet Factory

The second three years plan stressed for the first time for balanced regional development.

1.3.4 The Third Five Years Plans (1965-70)

This plan period emphasized the cement, lime and fertilizer industries Expenditure divided for private sector. During the plan period twelve PEs were established they were:

-) Bansbari Leather and Shoe Factory
-) Cottage and Handicraft Emporium
-) Himal Cement Factory
-) Nepal Tea Development Corporation
-) Rastriya Bima Sanstan
-) Dairy Development Corporation
-) Agriculture Development Banks
-) Agriculture Input Corporations

-) Chandeswori Textile Industries
-) Agriculture Tools Factory
-) Bricks and Tile Factory
-) Nepal Telecommunication and Corporations
-) Guthi Sansthan

1.3.5 The Fourth Five Years Plans (1970-75)

This plan adopted the industrial policy of 1974 and provisioned for establishment of four industrial estates and four industrial ventures in the public sector projecting a substantial expansion in the private sector. This plan greater responsibility to the public sector for the industrial development.

Enterprises established under this plan period were :

-) Balaju Textile industry Ltd
-) Nepal Oil Corporations.
-) Tobacoco Development Corporation
-) Jute Development Corporation
-) Nepal Teansit and Warehousing Ltd.
-) Culture Corporation
-) Royal Nepal Film Corporation
-) Drinking water and sewerage Board
-) Agro Lime Industries Ltd.
-) Nepal Food Corporation
-) Heatuda Textile Industries Ltd.

Some others rice and paddy exports companies were also established during this plan period, which were as under:

- Janakpur Rice and Paddy Export company ltd.
- lumbini Rice and Paddy export Company Ltd
- Sagarmatha Rice and Paddy Export Company
- Koshi Rice and Paddy Export Company Ltd
- Far-western rice and paddy export company ltd

Even though the industrial act 1961 has classified industries into five categories. The 1974 act classified all industries in to four categories on the basis of investment as:

-) Cottage industries of up to Rs. 200000
-) Small industries of Rs.200000 to Rs 1 million
-) Medium industries of over Rs.1 Million to Rs. 5 Million.
-) Large scale industries of over Rs. 5 Million

1.3.6 The Fifth Five Years Plan (1975-80)

During the first five –years plan the following PEs were established:

-) Hetauda Cement Industries Ltd.
-) Security Market Centre.
-) Dharan Industrial Estate.
-) Butwal Industries Estate.
-) Nepalgunj Industrial Estate
-) Pokhara Industrial Estate.
-) Janak Education and Material Centre.
-) Agriculture project Service Centre.
-) Hetauda Leather Service Centre.

1.3.7 The Sixth Five Year Plan (1980-85)

The Plan comes out for the first time in Nepal with the definite policy of PEs consisting the poor performance of PEs. The plan promotes to provide greater autonomy and less interference on the PEs internal operations.

The policy inputs of plan contains the consolidation of similar, PEs liquidation, fixation of minimum rate of return, allocation of financial subsidies, on the basis of loss incurred because of the government decision of making mere public participation etc. The basic objective of the policies was to operate PEs in business like manner. During the plan period few PEs were established and few PEs were consolidated, liquidated and sold to private sector. The enterprises established during the plan period were;

-) Herbs Production and processing Company

-) Lumbini Sugar Factory
-) Nepalgunj Paper Factory
-) Rosin and Turpentine Co. Ltd
-) Nepal Orient and Magnetize
-) Nepal Metal Company
-) Butwal Spinning Factory
-) Nepal Arab Bank Ltd.

During the plan period Hetauda Leather Factory was disposed to private sector, eight Paddy and Rice Exporting Co. Ltd were liquidated in 1982. Other some were consolidated as:

-) Eastern Electricity Corporation with Nepal Electricity Co.
-) Ratna Recording Corporation with Cultural Corporation.
-) Rastriya Chamal Karkhana with Nepal Food Corporation.
-) Ashaya Kalyan Kendra with Balaju Textile.
-) Fuel Corporation with Timber Corporation of Nepal.

1.3.8 The Seventh Five Year Plan (1985-90)

The objectives of Seventh Five Year Plan were as follows:

-) So long as the private sector is not prepared to produce necessary imports substituting goods and under trace the expansion of the infrastructure government corporation will be developed as a major medium for producing such goods and services to the people.
-) The Government Corporation will supply the essential goods and basic services to the people.
-) Steps to mobilize sources from the private sector will be intensified and the participation of the sector, through generated will be encouraged in Government Corporations.

The policies of seventh plan regarding public enterprises were as follows:

-) Similar Corporation will be amalgamated more efficiently.
-) Liquidation or Privatization of Sick Corporation.

-) Financially viable Corporation will be amalgamated, liquidated, transferred to private sector.
-) Keeping in view of general economic condition the autonomy should be provided regarding salary, benefits facilities price fixing, appointment, Promotion of employees etc. to the PEs.
-) Accountability and responsibility of Chief Corporation will be defined well and reward and punishment system will be used very efficiently.
-) Quality control and interest of national consumer will be safeguarded.
-) Ministry of Commerce and Ministry of supply will contact supply plan efficiently on an organized manager.
-) Those industries, which have goal of self-sufficiency, will be given priority.
-) Corporations are compelled to submit Balance Sheet and profit and loss a/c within following six months.
-) If loss due to government decision that will be compensated to same extent.
-) A separate Government body will be established to control the activities of PEs.
-) Corporation will be classified on the basis of their profit objectives.
-) Participation and ownership of private sector will be encouraged.
-) Award system will be effectively utilized. During Seventh Plan following PEs were established:
 - Nepal Television
 - Nepal Coal Limited
 - Udayapur Cement Factory

1.3.9 The Eight Five Year Plan (1992-97)

The main objectives of the eight five year plan were:

-) Poverty alleviation.
-) Sustainable economic growth.
-) Rural Development and Religion Development and
-) Privatization of PEs.

The main working industrial policy on eight plan towards meeting the above objectives were as follows.

-) The existing industrial policy and act will be reviewed thoroughly and revised as necessary.
-) In some critical area in sector where with foreign exchange liability of HMG/ Nepal is high, licensing requirements to start industries will be completely waived, registration producers will be made simpler and transparent.
-) A one window system for providing all government facilities and services under one intuition will be implemented for both domestic and foreign investors.
-) Foreign investment as well as joint collaboration will be encouraged in both import and export oriented industries.
-) Raw materials based industries will be emphasized.
-) Cottage industries will be encouraged both from the point of view of employment and income generations.
-) Exiting enterprises will be strengthened and will make more productive.
-) PEs not providing goods will be privatized.
-) Necessary policy and guideline will be formulated for privatization.
-) Necessary actions will be initiated to strengthen and enhance the productivity of manufacturing units so as to boost the export and meet domestic consumption needs.
-) Necessary policy will measure be implemented to strengthen and encourage the alignment of non-formal sector into formal sector.
-) Necessary action will be boost export orientated ventures.
-) Overseas promotions will be given priority.

During this plan privatization of public enterprises was emphasized similarly Security Exchange and Birendra International Conference Hall were established.

1.3.10 Ninth Five Years Plan (1997-02)

Though the main objective of privatization was to enhance productive uses of resources, in the light of economic, social and political realities of the country there can be various aim of privatization. In our contest , though privatization programmed encompasses all political , economics, financial, social, aspects and geared to achieve a particular objectives , yet its indirect effect have tended to disperse across the sector.

Hence, the programmers of privatization have been oriented to attain multiple objectives.

In line with this the ninth plan had set the following objectives of privatizations.

-) To increase the effectiveness and productivity of government resources through efficient privatizations.
-) To make the government gradually assumes the role of facilitator by encouraging and motivating the private sector for participation in economic development.
-) To help maintain economics stability by enforcing financial discipline and relieving the government progressively from the burden of financing corporation deficits.
-) To promote the participation of common people in the economic developments by means privatizations.

Review of the Ninth Plan

The objectives of the ninth plan were to increase business capacity of the public enterprises, to bring about reforms in the quality of goods and service produced, to solicit appropriate adjustment in pricing policies, to arrests leakage and is appropriations etc. Also the plan had the objectives to make the capacity and the shape of the enterprises market- based and market friendly. The goal of the plan was to gradually privatize the state-owned enterprises by entrusting the private sector to assume the responsibility of trade and industry development. In reality, the ninth plan could privatize only one public enterprise. At the last years of the plan period some enterprises were liquidated, some were brought under reforms in organizational structure there by reducing the administrative overheads, making them capable to run at commercial basis. During the plan period, the examples of unsuccessful privatization were noticed due to returning of two enterprises (that were handed over on the basis of management contract and lease) back to government. The private sector was unable to operate the privatized enterprises due to the needs of legal action that was deemed necessary to resolve the issues which emanated because of lack of companies of conditionality agreed upon because the buyer and the seller.

1.3.11 Tenth Five Year Plan (2002-7)

To fulfill the objective of the ninth plan the plan has come into existence since 2002 to 2007 the main objective, quantitative targets, strategy and policy set by tenth plan in regard of public enterprises are as follows.

a) Objectives:

The objectives of the tenth plan is to make the economy vibrant, dynamics and competitive the public enterprises which needs not be retained in state ownership and management.

b) Quantitative Targets

At list 15 enterprises will be privatized and handed over to the private sector within the plan period though privatization of a minimum of 3 enterprises per annum inclusive of those which could not be privatized during the ninth plan.

c) Strategy

1. The nature of activity, scope, status of financial transaction, need for additional investment, etc. would be the privatization of the PEs. In the process extensive participation will be encouraged to make privatization competitive and transparent.
2. Even those enterprises, which have to be maintained under the public sector, will be operated on the commercial principles.

d) Policy

Making the process of privatization competitive and transparent. (related to strategy1)

-) Priority will be accorded to privatized the public enterprises on competitive area that could attract the attention of the private sector.
-) Enterprises that are deemed unnecessary to be operated under public sector and even fail to attract the private sector will be liquidated.

General will be informed through regular monitoring of the works in progress and also about the compliance / non – compliance of the conditions of the agreements made while affecting privatizations deal of a given public enterprises. Also they will be informed whether or not the necessary goods and services have been made available appropriately after the privatization of those enterprises.

Improvement will be made in the process of privatizations by restoring to promoting wider participation of the public as much as possible.

The public enterprises that need to retained within the ownership and management of the government will be run on commercial principles (related to strategy 2).

-) Though continuation in the development of competitive environment, which has been initiated in areas like drinking water, electricity and telecommunication, the necessary regulatory machinery will be developed for the public enterprises in these sectors to promote investment from private sectors.
-) Foreign investment will be promoted in those feasible enterprises which come under the area of national priority that can bring in foreign capital as well as modern technology.
-) Public enterprises will be encouraged will be encouraged to operate commercially by providing autonomy to them.
-) The main action of tenth plan towards PEs is to privatized the fifteen PEs and to develop. The action plan for the efficiently of PEs. Similar re-construction, amalgamation and liquidation action will be brought as per needs of different PEs.

1.4 Public Enterprises and Privatization

Over several years in the past, the tendency remained to establish and operate public enterprises with substantial investment in order to accelerate the economic growth rate. Many public enterprises encompassing several economic, services and other sectors especially those which got less attraction from the private sectors were set up

with government investment and/or donor supports. However, due to lack of corporate culture and weak operational efficiency, and outward interface in decision making processes, the performance of the public enterprises remained poor. Consequently, the rates of return on investment remained very low. The financial liabilities the government had to bear in the enterprises went on increasing year by year. The overall economic and financial conditions of the enterprises continued to deteriorate. As a result, the public enterprises instead of accomplishing the set objectives turned out to be burdensome to the national economy. Because of those reasons HMG/ Nepal has adopted the aim of privatizing PEs. The objectives of privatizations are mainly concerned with the development of industry and business sector, increment of participation in the commercial field.

The enterprises privatized till 2006 are as follows.

Table No. 1.1: List of Enterprises Privatized

| Name of Enterprises | Date | Modalities |
|---|-------------|--------------------------|
| Bansbari Leather and Shoe Factory | 1992 | Sales of Assets |
| Bhriktui Paper Industries | 1992 | Sales of Assets |
| Harsiddhi Bricks and tile industry | 1992 | Sales of Assets |
| Nepal Film Development Corporation | 1993 | Sales of Share |
| Balaju Textile Industries | 1993 | Sales of Share |
| Un Processing Leather Collection Centre | 1993 | Sales of Share |
| Tobacco Development Company | 1994 | Liquidation |
| Jute Development Corporation | 1994 | Liquidation |
| Nepal Lube Oil ltd. | 1994 | Sales of Share |
| Nepal Bitumen and Barrel Co. Ltd | 1994 | Sales of Share |
| Nepal Core Iron Industry | 1996 | Sales of Share |
| Raghupati Jute Mills | 1996 | Sales of Share |
| Biratnagar Jute Mills | 1996 | Mgmt Contract |
| Nepal Bank ltd. | 1997 | Sales of Share |
| Nepal Tea Development Corporation | 2000 | Sales of Share and Lease |
| Agricultural Project Service Centre | 2001 | Liquidation |
| Cottage Craft Sales Centre | 2002 | Liquidation |
| Nepal Coal ltd. | 2002 | Liquidation |
| Heatuda Textile Industry ltd. | 2002 | Liquidation |
| Nepal Transpiration Corporation | 2002 | Liquidation |
| Butwal Power Company ltd. | 2003 | Sales of Share |
| Birgunj Sugar Factory | 2003 | Liquidation |
| Agriculture Tools Factory | 2003 | Sales of Share |
| Bhaktapur Bricks Factory | 2003 | Lease |
| Nepal Telecom | 2004 | Sales of Share |

Although the establishment of PEs has greatly assisted in the country's industrial and professional development and help to prepare the necessary invitation base, the enterprises themselves could not succeed to accelerate the pace of national development. It has become necessary to increase efficiency in all areas through proper and efficient management. Together with this it has become necessary to bring about the changes in structural framework of the corporation in order to enhance the standard of service rendered by them.

Mainly the following reasons are the privatization of PEs.

-) Loss occurred in the PEs.
-) Lack of commercial ethics on PEs.
-) Overstaffing in PEs.
-) Lack of skilled professional and responsible management in the corporation.
-) Unnecessary Government interference.

1.5 Introduction of Nepal Electricity Authority (NEA)

1.5.1 Establishment and Historical Background.

Nepal electricity Authority (NEA) is leading organization in power generation transmission and distribution. It is a fully government under taken public utility enterprises, established an Bhadra 1, 2042 B.S. under Nepal Electricity Authority Act, 2041.

NEA was established following the amalgamation of the then Electricity Department Nepal Electricity Corporation and number of Boards related to the power sector. The main purpose was to provide quality and reliable Electricity supply to customers at an affordable price. At present, it is responsible for making generaion, transmission and distribution of electricity supply through out the kingdom of Nepal. The main objective of establishing NEA is planning construction operation and maintenance of electricity projects and station to make Electricity supply more reliable and effective in responsible price to the people in the kingdom of Nepal. On the basis of organization expansion and area of its power Supply Works Nepal Electricity Authority is the largest public utility organization in Nepal. To achieve its objectives, NEA has established sufficient branch office in all the district of kingdom of Nepal

and now, NEA is able to provide the electricity service to the 22% of the total people of Nepal. It seems very low in the field of Electricity power supply.

NEA started its operation on 17th August 1985, NEA is responsible to generate and supply the electricity securely, efficient economically, at responsible price for the development of the nation.

The objectives of NEA is planning construction, operation of maintenance of the electricity power sub-sector NEA should ensure the availability of the resources necessary for the development of electricity supply by the most efficient and effective manner.

The development of electricity in Nepal has been mainly based on the development of hydropower. The development of this infrastructure has been essentially carried by the government, but the private sector has recent also contributed and set qualitatively important footing in this sector. There have been several government organizations through which the development has been coordinated.

The first pioneering project of Phrasing was built in 1911 A.D. whose capacity was 500 K.W. and second project Sundarikal (1350K.W.) in 1935 by government aid. Until then, some of the industries were established in Tarai of Nepal. The Margon Hydropower Co. was established in 1940 A.D. and then Birunj Electric supply Co. and Dharan Electricity power Co. were established. The planned development of electricity was started from Second Three Years Plan (1962-1965), by the establishment of Nepal Electricity Corporations (NEC) on August 16, 1962.

The small hydro development board was established to supply the hydropower in the remote and rural areas. Its aim was to develop hydropower within the range of 100-5000k.w. electricity for the electrification of rural areas by overcoming the difficulties of link rural areas to electricity transmission line.

The water and Energy Commission (WEC) was established to co-ordinate and advise the government to for the policy for the development of water and energy resources. Power development boards were established to develop projects in the

growing electrical system. The executive body " water and Energy Commission Secretariat " (WECS) was formed in 1981, which is assisted by foreign organization. During the Sixth Five –Years Plan (1980-1985), the government established Nepal Electricity Authority by introducing new corporation policy with the vision to boost up performance of public enterprises.

1.5.2 Objective of NEA

NEA Act 2041 B.S. places the following objectives

-) To manage electricity supply by way of effective generation, transmission and distribution.
-) To supply electricity by way of proper generation, transmission and distribution to make the supply system reliable and accessible under the prevailing law.
-) To develop and implement the program for the production, transmission and distributes of electricity supply.
-) For the convenience of the people and industry feasible project in economically viable area is developed to insure the supply by the generation, transmission and distribution of electricity.

1.5.2.1 The Objectives of NEA in Tenth Five Years Plan

The following objectives have been set for the electricity sect or to reduce poverty in a sustainable manner in the Tenth Plan.

-) To produce electricity at low cost harnessing the existing water resources.
-) To supply reliable and high quality electricity at reasonable price throughout the kingdom by integrating economic activities.
-) To expedite rural electrification so that it could contribute to the rural economy.
-) To develop hydro electricity as an exportable item.

The following targets have been set for achieving the objectives of the Tenth plan.

-) Hydropower projects will be constructed to supply 842 megawatt electricity, out of which 70 megawatt could be exported.

-) Additional 10% people will be supplied electricity through the national grid for which power will be supplied to 2,600 Village Development Comities through the national grid and additional 5% people will be supplied power through alternative sources of energy.
-) Per capital electricity consumption will be raised sources of energy.

1.5.3 Responsibilities of NEA

NEA Act, 2041 places the following responsibilities upon NEA

-To recommended short- term and long term policies to his Majesty's Government of Nepal (HMG/N) on matters relating to electricity supply.

-) To supply electricity by under taking the generation, Transmission and distribution in accordance with the prevailing law.
-) To formulate plans and program for electricity generation, Transmission and distribution and other related activities, and construct operate, protect and maintain electricity generation station sub-station, distribution centers, transmissions and distribution lines and related facilities in order to implement its plans and programs.
-) To make arrangement for electricity generation transmission and distribution for industrial and agricultural development as well as for the general public on the basis of techno-economic viability of power generation projects.
-) To fix electricity tariff and others charges relating to electricity supply services.
-) To carry out necessary research in the field of electricity generation transmission and distributions.
-) To make arrangement for the development of skilled human resources in the areas of electricity generations, transmissions, and distribution through advanced –level training and education program.
-) To provide technical guidance and consultancy in matters related to electricity generation transmission and distribution.
-) To perform other function in order to accomplish the objectives of the NEA.

1.6 Introduction of Kathmandu Upatyaka Khanepani Limited (KUKL)

1.6.1 Establishment and Historical Background

Drinking water is not only the basic needs of people but it is an universal need. Water is not an important only for the human beings, but it is an important for animal too. On the other hand, the sewerage system has its own importance, there should be a good sewerage for a healthy environment. Adequate provision of pure drinking water and proper management of sewerage system are basic facilities for the projection of health and sanitation in the community. Therefore several drinking water projects have been implemented in the country since the launching of the five years plan.

As a result by the end of Fourth Plan 15.8 million gallons of water per day has been made available 1.45 million gallons by the First Five Year Plan period.

KUKL is a public company registered under the Nepal Government's Company Act 2063, with objective to undertake and management of the water supply and sanitation system of the valley operated by NWSC and provides quantitative, qualitative and reliable service to the consumer on their full satisfaction at affordable price. KUKL is responsible for operation and management of water and wastewater services in the Valley. It operates the water supply and sanitation services under a license and lease agreement with the KVWSMB for 30 years. KUKL is responsible for maintenance of all assets received on lease from KVWSMB. The share holders of the company owning with respective initial shares are GON (30%), Municipalities in the valley (50%), Organizations (15%) [FNCCI- 3%, Lalitpur Chamber of Commerce - 1.5%, Nepal Chamber of Commerce- 9%, Bhaktapur Chamber of Commerce -1.5%], and employee trust to be paid by the government (5%).

The KUKL is under direction of Seven Board of Directors. Four directors are nominated by shareholders (one each from GON, Kathmandu Metropolis, Lalitpur Sub-Metropolis and organizations) and three independently appointed. The chairman is selected among the Board of Directors. The company will also take over the responsibility of infrastructures built by Melamchi Water Supply Project. Currently the KUKL is headed by three international water utilities experts (General Manager, Operational and Technical Manager, and Administration & Financial Manager).

KUKL is fully government owned entity which has to follow all rules and regulation as direct by HMG, KUKL has to function its big capital projects with the help of loan and grant assistance provided by IDA and HMG, HMG has provided loan, and grant assistance to the corporation for big project which requires high volume of amount. Similarly, International Development Association has provided loan for big projects it has maintained its operating expenses by its own incomes some capital projects are operating by its own internal sources, which are as, construction of building, expansion of sewerage line etc. The main sources of income are water sales. It has provided its services in the urban areas of the kingdom. It has 26 branches it has collected its revenue in the centre from its different branches. Then, it distributes or budget release to its branches according to their necessities. Small kinds of projects costs are borne by corporation for its own expense, which is decided by board of directors.

In Kathmandu, it has provided water by tanker where water is not available and it is free of cost. It distributes the water in tole, tole by its own tanker. And it is decided by tanker section.

1.6.2 Function, Duties and Authority of the Corporations

The functions, Duties and Authority of KUKL are as follow.

-) To plan of drinking water, sewerage system and implementing the planning.
-) To study research, survey of the source distribution of drinking water and sewerage system.
-) To determine the pipeline of drinking water from sources to distribution spot.
-) To implement the required construction functions of water supply and sewerage system.
-) To implement the agreement between HMG and foreign Govt. or international or foreign corporation about drinking water and sewerage board.
-) To operate the development project specialized by HMG about drinking water and sewerage board.
-) To provide service of drinking water and sewerage board instead of fees.
-) To point out the essential conditions of using system of water utilization and sewerage system.
-) To control misuse of drinking water.
-) To control the pollution of drinking water.
-) To repair and maintenance of essential drinking water and sewerage pipelines.
-) To repair and regulate essential drinking water if the information about unavailability of water in the tap.
-) To generate income for its own expenses.
-) To fulfill the other essential objectives of the Corporation.

1.6.3 The Objectives of KUKL in Tenth Five Years Plan

The following objectives have been set for the drinking water sector in the Tenth Plan.

-) Provide basic drinking water service to all regions of the kingdom by gradually up-grading the level of services by the end of the plan period.
-) Provide appropriate sanitation facilities in urban as well as I rural areas by increasing public awareness.
-) Assist to reduce child mortality rate by controlling water borne and water induced diseases and thereby help to increase income generation through opportunity of utilizing saved labor from illness.
-) Involve private sector in the overall management of urban water supply system/ facilities and also in the improvement and up-graduation of drinking water projects.
-) Provide basic drinking water service to additional 4.591 million people including 3.852 million rural and 0.739 million urban population within the Tenth plan period.
-) Provide a high level service to 1.334 million people and medium level service to 2.668 million people by upgrading the drinking water supply system.
-) Sanitation facility will be provided to 7.421 million people including 5.613 million from rural and 1.808 million from urban areas by motivating the house hold to construct private toilets. Public awareness on personal hygiene and sanitation will be increased through mass publicity and training programs within the Tenth Plan Period.

1.6.4 Challenges of KUKL

The challenges faced by KUKL are too many but summarily.

-) Shortage of water for rapidly growing population, especially in Kathmandu valley urban areas including the capital.
-) Very old network system is place but still in use, contribution to a high leakage %, demanding immediate up- grading.

-) Financial resources constraint to meet ever growing demand / aspiration from the public.
-) Strengthen institutional capacity to fulfill customers expectation in the new millennium.

1.7 Objectives of the Study

The general objective of this study is to examine the present compressive ratio analysis of Nepal Electricity Authority and Kathmandu Upatyaka Khanepani Limited . The specific objectives of the study are as follows:

-) To study and evaluate financial performance of respective organizations using different ratios.
-) To calculate and compare different ratios of NEA and KUKL .
-) To evaluate financial positions of both the organizations under study.
-) To provide necessary recommendations to the concerned organizations for future betterment and making them much socially responsive.

1.8 Statement of the Problems

Public enterprises, providing goods and service for public utility are facing different types of problem in Nepal. Most of the organization is not operating good in terms of their profitability though they are getting different facilities and aid from government and other sources. This study tried to find out their ability to pay short term obligation, efficiently of operation efficiency of activities related to manufacturing marketing and inventory ability to meet long term financial obligation in terms of debts. Besides these the study helps to analyze their financial performance and take corrective action. So that they can realize their social responsibility much better.

As it has already been maintained that, public enterprises in Nepal have been created to build infrastructure for development, and to supplement private sector and operate as a model for efficient use to national treasury. In order to realize these objectives, public enterprises has to efficient in the utilization of their resources. On the basis of SWOT analysis both the organization are suffering from various problems i.e. they are not been able to win the mind of general public as per their service importance.

The introduction of private sector will not be prevented from participating in public enterprises. The Government will not also have control in to price of good services produced by such enterprises. It has also made the policy to gradually reduce the subsidy and protection being grand by the government till date to zero level while encouraging them to go in open competition. At this juncture it is understandable that NEA and KUKL must be able to generate fair rate of return and surplus on its own. For this purpose these become imperative to become financially sound and independent at least in term of paying interest on debts, operation and maintenance expenditure, administrative expenses and genera ting desirable rate of return on capital employed.

The present study attempts to have an insight over the problem of financial performance of NEA and KUKL. This study also attempts to recommended some concert suggestion for improvement in overall financial performance through Ratio Analysis.

1.9 Importance of the Study

In every organization the availability of resources is scare and out of these scare resources, the objectives of the organization are to be accomplished. Nepalese PEs are getting loss day by day due to under utilization of available resources. As a result most of the PEs has bad financial performance. Compression of two or more than two organizational performance is lacking Nepal.

The main reasons to study this research work is t o analyzed and examine the different ratio of the selected PEs whether it is applying Ratio analyst properly or not. Finding some problem faced by these organization this study helps to per reliable ratio analysis and sees their financial performance.

1.10 Limitations of the Study

The study is based on the secondary data provided by concerned organization is not a complete study and ratio analysis of all enterprise providing public utility goods and service so, the limitation of the study are:-

-) Though there are other tools to measure financial analysis, yet ratio analysis is only used.
-) Ratio analysis is based on the secondary data provided by respective organization.
-) The study is regulated to the ratio analysis of NEA and KUKL.
-) Past performance of organization may not be the best indicator for future evaluation because of its secondary data.
-) Evaluation of assets and specific change in price, inflation etc. may differ over the time.
-) Being a student; resource and other factors limited the scope and coverage of the study.

1.11 Organization of the Study

Chapter 1: Introduction

This chapter deals with the general meaning of PEs, PEs in Nepal and their evolution an introduction, brief view and organizational structure of NEA and KUKL. Statement of the problem, need and focus of the study, objective, scope, limitation of the study are included. Besides these historical background of selected organization is also stated in brief.

Chapter 2: Review of Literature

This chapter includes conceptual framework and review of literature. Introduction, of ratio analysis and statistical tools. Different journals, books, dissertation, reports and facts received from them are included.

Chapter 3: Research Methodology

This chapter includes introduction research design, data collection, the population samples, period covered, nature and scope of source of data, data gathering instruments, statistical tools.

Chapter 4: Presentation and Analysis of Data

This chapter includes data tables and analysis of computed data. Ratio Analysis, mean, standard deviation, co-efficient of variance, probable errors, correlation and

regression are presented. Diagram of different variables are also shown, major findings from computed data is presented at the end of this chapter.

Chapter 5: Summary, Conclusion and Recommendations

This chapter is the gist of the study and it represents all the opinion of the research as for as possible summary, conclusion and recommendations are mentions in this last chapter of this study.

CHAPTER II

REVIEW OF LITERATURE

2.1 Concept of Financial Statement

In the beginning of civilization, the number of business transaction had taken a very small place. Each businessman was able to record and check business transaction himself. After the increment of business transaction, the need of accounting system increased. With the help of financial statement, every businessman could show actual condition to the different parties.

Financial statements systematically contain summarized information of the firm's financial affairs. Top management need financial statements to see actual financial situation of the firm to owners, creditors and the general public. Balance Sheet and Income Statement is to assist in decision making Balance Sheet and Profit and Loss account are the traditional basic financial statement of business. Financial statement contains summarized information of firms financial affairs organized and systematically. They are meant to represent the firm's financial situation to user.

These statement provide reliable financial information about economic resources and obligations of business enterprises.

The term financial statement used by itself without qualification usually refers three principle statements. The balance sheet, the income statement and a statement of changes in equity, analyzing changes in the ownership accounts.

Thus, we can say that financial statement communicates information to the different parties. It is a source of information relating to a firm.

The financial statement which represent summaries of the financial and operating data entered in the accounting records, are stated in monetary units. These monetary units do not generally represent current absolute values.

2.1.1 Balance Sheet

Balance sheet presents the position of company's assets, liabilities and shareholder's equity at a particular date. The liabilities indicate the amounts owned by the firm to its creditors. It represents summary of the financial and operating data entered in the accounting records which are stated in the monetary units.

A balance sheet is a statement showing the nature and amounts of all assets owned at the close of a fiscal period, the nature and amounts of all debts owned, and the firm and amount of the equity of the owners or owners in the assets of the business.

Balance sheet contains information about resources and obligations of a business entity and about its owner's interest in the business at a particular point of time.

The balance sheet which reveals, the financial position of a business as reflected by the accounting records, contains a list of assets, liability and net worth items as a given data.

We can say that the balance sheet shows the assets owned by the business and the sources of funds (from creditors and owners) used in acquiring the assets.

2.1.2 Income Statement or Profit and Loss Account

The earning capacity and potential of the firm are reflected by the income statement. Income statement presents the summary of revenues, expenses and net income or net loss of a firm for a period of time which measures the firm's profitability, statement of income statement of loss. A profit and loss statement (also known as earnings or a statement of operations) is a statement sharing over a special and limited period of the life a business, the nature and amounts all its income for the period and the nature and amounts of all its operating costs and expenses.

In conclusion, we can say that profit and loss statement shows the net income or net loss resulting from the operating of business during a specific period of times.

2.1.3 Financial Statement Analysis

Balance sheet and profit and loss account do not given all the required information's regarding the financial operation of firm. The user of financial statements can get better information about the financial strengths and weakness of the firm if the user properly analyzes the information reported in these statement.

Financial analysis is a study of relationship among the various factor and pin pointing the strength and weakness of a firm so that forecast may be made of the prospects for future earnings. In the resent time, financial statement analysis has played an increasingly importance role as a tool of examining the real worth of going concern.

Analysis and interpretation financial statements are as attempts to decide the significance and meaning of financial data so that a forecast may be made of the prospects for future earnings, ability to pay interest debt maturities, both current as well as long-term and probability of a sound divided policy.

Financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by the single set of statement and a study of the trend of these factors as shown in a series of statement.

Financial analysis is the process of identifying the financial strengths and weakness of the firm by properly establishing relationship between the items of the balance sheet and the profit and loss account.

Thus, the analysis of financial statement is an importance aid to financial analysis. Financial statement analysis is helpful in assessing the financial position and profitability of business concern. The analysis of financial statements thus refers to the treatment of the information contained in the financial statement in a way so as to

afford full diagnosis, of the profitability and finance position. In brief, financial analysis of the process of selection, relation and evaluation.

Financial analysis is a process of evaluating the relationship between component parts of financial statement to obtain a better understanding of a business concern's financial health. It can be undertaken by different parties, but the nature of analysis will differ depending on the purpose of the user. Financial statement analysis does not provide exact answer, but it informs about future expectation.

2.2 Tools of Financial Analysis

Financial statement merely do not give a perfect information about a business concern therefore various type of tools used to analyze financial statement. These tools are called tools of financial analysis. The tools of financial analysis are needed to show the relationship and change, among the more widely used or these tools are horizontal analysis and funds flow analysis.

With the help of various financial tools we can identify the actual situation of a business concern. A brief explanation of these tools has been given below:

2.2.1 Ratio Analysis

Ratio analysis is a tools of financial with which helps in identifying financial strengths and weakness of business concerns. It is a important way to state meaningful relationship components of financial statement. The primary purpose of ratio is to point out areas for further investigation.

Ratio analysis has been a major tool used in the interpretation and evaluation of financial statement since late 1800.¹

A ratio helps to the researcher to make qualitative judgment about the firm's financial position and performance. ratio analysis is an important way to state meaningful relationship between components of financial statement. Ratio are guides or shortcuts that one useful in evaluating the financial position and operations of a company and in comparing them to previous year or to other business concerns. The term ratio referees to the numerical or quantitative relationship between two items/variables.²

The rationale of ratio analysis lies in the fact that it makers related information comparable. A ratio is calculated by dividing one item of the relationship with the other.

The ratio analysis is the quantitative relationship between items. A ratio is defined as the indicated quotient of two mathematical expansions and is the relationship between two or more things. It is under taken of various parties engaged such as trade creditors bondholders, investor and management in the firm according in the firm according to their specific purposes. It is defined as a systematic use of ratio to interpret the financial statement so that the strength and weakness of a firm as well as its historical performance and current financial condition can be determined.

¹ Webster's New Collegiate Dictionary Edition Spring Field, Mass G. and Merriam 1975, p.958.

² Khan and Jain, Financial Management, Text and Problem, Tata Graw Hill Publishing Company Limited, New Delhi, 1993, P. 105

The alternative methods of expressing items, which are related to each other which are the purpose of financial analysis is called ratio analysis³.

Financial analysis is used as an index or a yard stick for evaluation of the financial position and performance of firm. Ratio analysis is a yardstick tool to evaluate the financial performance and conditions of the firm.⁴

The operational and financial problem of a business concern can be ascertained by examining the behavior of these ratio. Financial ratios help make qualitative judgment. The objective of the present study is to compute, analyze and interpret financial ratios so as to determine their behavior in financial institution with special reference ratio so as to determine their behavior in financial institution with special reference to NEA and KUKL.

As a tool financial analysis, ratio can be expressed in items of percentage, fraction or a stated comparison between numbers.

Ratio analysis involves basic standards of comparison for a useful interpretation of the financial statement. A single ratio by itself does not indicate favorable or unfavorable condition of a firm unless it is compared to some appropriate standard selection of a proper standards of comparison is a most important element in ratio analysis.

Ratio analysis provides guides and clues especially in spotting trends towards better or poor performance and in finding out significant deviation from any average or relatively applicable standard.⁵

The four most common standard used in ratio analysis in financial in financial management are absolute, historical, horizontal and budgeted.

Different types of ratio are used for financial analysis today. The major types of ratios that used in this study are as follows:

2.2.1.1 Liquidity Ratio

Liquidity ratio measures the short term solvency of organization. It analyzes the ability of organization to pay the short term obligation. under this the following ratios are calculated:

- i) Current Ratio
- ii) Quick /Acid Test/Liquid Ratio

³ Khan and Jain, Financial Management, Text and Problem, Tata Graw Hill Publishing Company Limited, New Delhi, 1993, P. 105

⁴ James C., Van Horne, Financial, Management and Policy, English Edition, New Delhi, Prentice Hall of India 1991, p. 753

⁵ Ench, A. Eelfert, Technique of Financial Analysis, Richard D. Irwin Inc., Homwood, Illionis, 1957, P.57

i) Current Ratio

This ratio measures the short term solvency. i.e. its ability to meet short term obligation. As a measure of creditors reuses current assets. It indicates each rupee of cash available for each rupee of current liability it is computed by dividing current assets by current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liability}}$$

Current assets includes cash and those assets which can be converted into cash within one year. such as bank balance, prepaid, stock, receivable, short term investment etc.

The current liabilities include those obligations which mature with in one year from the date of their financial statement. They are current payment, cash margin current saving deposit, inter bank reconciliation account bills payable provision for overdrafts accrued expenses bills for collection and customer's acceptance out standing etc.

ii) Quick Ratio

It is also known as Acid Test ratio or liquid ratio. The ratio shows the liquidity of the organization in real sense. Liquid Assets are current assets less prepaid and stock. This ratio measures the ability of firm to pay current liability immediately. It is calculated as below:

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liability}}$$

Where,

$$\text{Quick Assets} = \text{Current Assets} - \text{Stock} - \text{Prepaid Expenses}$$

The standard quick ratio is through to be 1:1 i.e. liquid assets should be equal to current liability. if the ratio is higher the short term financial position supposed to be very sound.⁶

2.2.1.2 Leverage Ratio

It is also termed as solvency ratio or capital structure ratio. Solvency means the ability of the business to pay its outside liabilities. The leverage ratios are calculated to judge the long-term financial position of a firm. This ratio measures the enterprise's ability to pay the interest regularly and to repay the principal on maturity. The following ratios are included under ratio:

- i) Debt Equity ratio (D/E Ratio)
- ii) Debt to Total Capital Ratio (DTC Ratio)
- iii) Interest Coverage Ratio (IC Ratio)
- iv) Interest Coverage Ratio (IC Ratio)
- v) Fixed Coverage Ratio (FC Ratio)

i) Debt Equity Ratio (D/E Ratio)

This ratio is calculated to judge long term financial policy of the business/organization. The ratio establishes relationship between long term loans and owner's fund. It is calculated as follows:

⁶ Siddiqui, S.A., Comprehensive Accountancy, Ninth Edition, Laxmi Publication, New Delhi, 1997, p.502

$$\text{Debt Equity Ratio} = \frac{\text{LongTermDebt}}{\text{Shareholder'sEquity}}$$

Or,

$$\frac{\text{TotalDebt}}{\text{Shareholder'sEquity}}$$

The ideal debt equity ratio is accepted as 2:1 meaning that long term liability of the organization should ideally be two times of shareholder's fund.⁷

A high ratio shows the large share of financial by the creditors as compared to that of owner. The creditor prefer low debt equity ratio, a low debt equity ratio implies larger safety margin for creditors.⁸

ii) Debt to Total Capital Ratio (DTC Ratio)

This ratio shows the relationship between the long term debt and total capital. Total capital includes shareholders equity as well long term debt. This ratio is variation of debt equity ratio and gives the similar indications.

$$\text{Debt to Total Ratio} = \frac{\text{Long term Debt}}{\text{Capital Employed}}$$

or,

or,

$$= \frac{\text{Total Debt}}{\text{Capital Employed} \Gamma \text{Current Liability}}$$

A low ratio represents security to creditors in existing on the contrary, a high ratio represents a greater risk to creditors as well as shareholders.⁹

iii) Interest Coverage Ratio (IC Ratio)

This ratio shows how many times the profit cover the interest. It shows the margin of cover to lenders of the organization. it is always desirable to have profit more than the interest payable on debentures and other loans. in case profit is either equal or less than the interest, the position will be unsafe and it will show that there is nothing left for the shareholders and position lender is also unsafe.

It is calculated as:

$$\text{Interest Coverage Ratio} = \frac{\text{NPBIT}}{\text{Interest}}$$

Where, NPBIT = Net profit before interest and Tax

⁷ Ibid, p.505

⁸ Dangol, R.M, Accounting for Financial Analysis and Planning, Taleju Prakashan, Kathmandu, p..396

⁹ Ibid p. 398

A high ratio a sign of low burden of borrowing of organization and lower utilization of borrowing capital. From the profit of view of creditors, debenture holders and loan creditors, the higher the coverage the greater the ability of the firm to make the payment of interest.¹⁰

iv) Fixed Coverage Ratio (FC Ratio)

This is the ratio of net profit before interest and tax of fixed charge. It indicates the number of times coverage by NPBIAT. The fixed charge includes interest, preference divided and debt payment. It is calculated as:

$$\text{Fixed Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Fixed Charge}}$$

It shows the ability of the organizational to make the payment of fixed charges. Hence, the higher coverage ratio is preferable for the company. Higher the coverage higher will be profitability.¹¹

2.2.1.3 Turnover/Activity/Efficiency Ratio

Turnover means sales, so turnover ratios are related to sales. It is an accepted fact that sales has direct relationship with the performance of the organization. Higher sales mean better performance, which really means better efficiency and productivity. Higher sales also means more production which is undoubtedly the result of the best possible utilization of physical resources i.e. machine, material and active participation of human resources. In this way, word 'Turnover', 'Efficiency' and 'Activity' are synonymus.

The relationship between sales and resources is indicated by this ratio. This ratio reflects how efficiency the company is making its resources.

Under this the following ratios are calculated:

- i) Inventory Turnover Ratio(IT Ratio)
- ii) Debtokrs Turnover Ratio (DT Ratio)
- iii) Average Collection Period (ACP)
- iv) Fixed Assets Turnover Ratio (FAT Ratio)
- v) Total Assets Turnover Ratio (TAT Ratio)
- vi) Capital Employed Ratio (CE Ratio0)

i) Inventory Turnover Ratio (IT Ratio)

This ratio measures how may times the average stock is sold during the year. Promptness of the sales indicate better performance of organization. It also shows the efficiency of the concern. Immediate sales of goods produced required further production which consequently activates the productive process and its responsible for rapid development of the business.

¹⁰ Dangol, R.M., Op.Cit. p.400

¹¹ Ibid, p.401

Higher inventory turnover ratio is always beneficial to the concern. Lower IT ratio shows that the stock is blocked and not immediately sold. It shows the poor performance and inefficiency of the management

The ratio establish the relationship between cost of goods sold and average stock. Every business has to keep optimum quantity of stock so that the production work may be carried on smoothly. if the average inventory kept during the year is more that ordinary requirement the amount spent on its purchase will be unnecessarily blocked and there will be problem of storing it. It is always advisable to keep the required quantity of the stock.

The ratio is calculated as:

$$\text{Inventory Turnover Ratio} = \frac{\text{cost of goods sold}}{\text{average stock}}$$

or,

$$\text{IT Ratio} = \frac{\text{Net Sales}}{\text{Closing Stock}}$$

Where,

Cost of Goods Sold = Net Sales-Gross Margin

$$\text{Average Stock} = \frac{\text{Opening Stock} - \text{Closing Stock}}{2}$$

ii) Debtors Turnover Ratio

A firm can be goods on cash and credit. credit is the important factors of sales promotion. By implementing the liberal credit policy, the sales can be increased. But one thing here should be notified that the collection period from this type of debt must be short. The efficiency of the concern for the collection is measured by this ratio. This ratio measures the velocity of debt collection of a firm. It is also termed as 'Receivable Turnover Ratio'. It shows the relationship between credit sales and average debtors.

It is computed as:

$$\text{DT Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Debtors}}$$

Where,

Net Credit Sales = Total Sales –Cash Sales-Returned

$$\text{Average Debtors} = \frac{\text{Opeing Debtors} \Gamma \text{Closing Debtors}}{2}$$

In absence of credit sales and opening debtors, the following formula used.¹²

¹² Dangol, R.M., Op.Cit.p.405

$$\text{DT Ratio} = \frac{\text{Sales}}{\text{Closing Debtors}}$$

The higher the ratio, the more efficiency is the management on collecting the debtors. A higher ratio indicates that within a short period, the firm is collecting the cash from debtors.¹³

iii) Average Collection Period (ACP)

It represents the average number of days for collecting the cash from debtors. It measures the efficiency of the concern for collecting from debtors. It indicates the rapidly or slowness with the money is collected from the debtors.¹⁴

It can be calculated on the basic of the following formula.

$$\begin{aligned} \text{ACP} &= \frac{\text{Debtors} \times (12\text{months}/52\text{weeks}/365\text{days})}{\text{Creditsales}} \\ &= \frac{12 \text{ months}/52\text{weeks}/365\text{days}}{\text{DebtorsTurnover}} \\ &= \frac{\text{Debtors Turnover Ratio}}{\text{Sales / Day}} \end{aligned}$$

The minimum time is preferable because it shows that the firm is efficient in collection of cash from debtors.

iv) Fixed Assets Turnover Ratio (FAT Ratio)

Fixed assets are used in the business for producing goods to be sold. The effective utilization of fixed assets will result in increased production and reduced cost. It also ensures whether investment in the assets have been judicious. or not.¹⁵

This ratio is calculated as,

$$\text{FAT Ratio} = \frac{\text{NetSales}}{\text{NetFixedAsstes}}$$

Where,

Net Fixed Assets = Fixed Assets-Depreciation

The higher ratio reflects better utilization of fixed assets. A low ratio is indicative of the poor utilization of the existing plant capacity which will result in reduction of production and increase in cost of production.¹⁶

v) Total Assets Turnover Ratio

This ratio shows the relationship between total assets and sales. It indicates how well the firm's total assets are being used to generate its sales.¹⁷

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Siddhiqui, S.A., Op.Cit. p.495

¹⁶ Dangol, R.M., Op. Cit. p.411

¹⁷ Koirala, M.R., et.al., An Introduction to Accountancy and Auditing, Buddha Academic Enterprises, Second Edition, 2005, p.273

It is calculated as:

$$\text{CET Ratio} = \frac{\text{Sales}}{\text{Capital Employed}}$$

Where,

Capital Employed= Share Capital + Retained Earning + Long term Debt-Preliminary Expenses.

Higher the ratio , the more efficient the management on utilization of capital. The capital employed includes shareholders equity and long term liabilities.¹⁸

2.2.1.4 Profitability Ratio

Profitability refers to the ability of the organization to earn profit. It shows the efficiency of the business. These ratios measures the profit earning capacity of the organization. Profitability has direct link with sales. This is why,, we calculate these ratios on the basis of sales. Return on capital, and investment is calculated on the basis of capital employed.¹⁹

Maximization of profit is the main objectives of each and every organization. It is very necessary to earn maximum profit for the successful running of a business concern.

Profitability can be measured in two ways:

- (a) Profitability in relation to sales
- (b) Profitability in relation to Investment

The following ratios can be ascertained considering the sales as basis.

- (i) Gross Margin Ratio
- (ii) Net Profit Ratio
- (iii) Operating Ratio

i) Gross Profit Ratio (GP Ratio)

Gross ratio is also termed as gross profit margin. This ratio shows the relationship between profit and net sales and it measures the overall performance of the organization in terms of sales. It is generally expressed in percentage.²⁰

The formula to calculate GP Ratio is

$$\text{GP Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

Where,

Gross Profit=Sales-Cost of Goods Sold

A higher ratio is a sign of efficient management, which reflects lower cost of goods sold and maximum profit.

ii) Net Profit Ratio (NP Ratio)

This ratio establishes the relationship between sales and net profit. Net Profit is gross profit less selling, distribution and financial expenses. Net profit, for calculating this

¹⁸ Dangol, R.M., Op.Cit, p.412

¹⁹ Siddhiqui, S.A., Op.Cit, p.484

²⁰ Koirala, M.R., et.al., Op.Cit., p.275

ratio is priced up from the profit and loss account. It should be noted that net profit is ascertained after adding operating and non-operating income to gross profit deducting both operating and non-operating expenses there from.²¹ This ratio is calculated by dividing net profit after tax (NPAT) by net sales. It is expressed in terms of percentage as

$$\text{NP Ratio} = \frac{\text{Net Profit After Tax}}{\text{Net Sales}} \times 100$$

A higher ratio is an indication of higher overall efficiency of the business and better utilization of total resources. Poor financial planning and low efficiency is the indication of lower ratio.²²

iii) Operating Ratio

This ratio shows the relationship between operating expenses and sales value. The information about the cost structure can be obtained from this ratio. This ratio is computed by dividing operating expenses by sales. Operating expenses and selling and distribution expenses.²³

This ratio is calculated as:

$$\text{Operating Ratio} = \frac{\text{Operating Expenses}}{\text{Net Sales}}$$

A higher ratio is the indication of high operating expenses and which reduce the profit of the organization and vice-versa. Similarly, the following ratios can be ascertained considering the investment as basis:

- i) Return on Assets (ROA)
- ii) Return on Shareholders' Equity (ROSE)
- iii) Return on Capital Employed (ROCE)
- iv) Return on :Common Shareholders' Equity (ROCSE)

Through there are five ratios under investment basis, here only Return on Assets (ROA) and Return on Shareholders' Equity (ROSE) is calculated because of the nature of selected organization and limitation of availability of data.

i) Return on Assets

This ratio establish the relationship between net profit and total assets. This ratio is also called 'profit to Assets Ratio'. It is shown in percentage.²⁴

To ascertain it different formulae can be used which are as follows:

$$\begin{aligned} \text{ROA} &= \frac{\text{NPAT}}{\text{Total Assets}} \\ \text{Or,} \\ &= \frac{\text{NPAT} + \text{Preferential Dividend}}{\text{Total Assets}} \end{aligned}$$

²¹ Siddhiqui, S.A., Op.Cit., p.487

²² Dangol, R.M., Op. Cit., p.415

²³ Ibid

²⁴ Dongol, R.M., Op.Cit, p.417

$$\begin{aligned} & \text{Or,} \\ & = \frac{NPAT \Gamma Interest}{TotalAssets} \\ & \text{Or,} \\ & = \frac{NPAT ZPr ef.Dividend}{TotalTangibleAssets} \end{aligned}$$

This ratio measures the profitability of all financial resources invested in the firms' assets. Hence, the higher ratio implies that the available sources and tools are employed efficiently.

ii) Return on Shareholders' Equity (ROSE)

This is shows the relation between the net profit after tax and shareholders' funds. Shareholders funds includes equity share capital, preference share capital, reserve and surplus, reserve funds, general reserve, capital reserve and share premium. The fictitious assets should be deducted from total shareholders' equity for finding out this ratio.

This ratio is calculated as:

$$ROSE = \frac{Net Pr ofitAfterTax}{Shareholders' Equity}$$

$$\begin{aligned} & \text{or,} \\ & = \frac{Net Pr ofitAfterTax \Gamma Interest}{Shareholders' Equity} \end{aligned}$$

This indicates how well the firm has used the resource contribution by the owner. Higher the ratio, the more efficient the management and utilization of shareholders' fund.

2.3 Research Gap

Most of the researches are related to financial analysis of one or two organizations. This study is totally different then previous studies of its selection of sample of population. There are two public enterprises in utility sector in Nepal and these (i.e. Nepal Electricity Authority and Kathmandu Upatyaka Khanepani Limited) are selected for study which includes 100 percent of population. Similarly, as far as possible recent data are taken for the analysis. In one hand, sufficient financial tools are collected, computed, orderly presented and analyze, in other hand statistical tools i.e. mean, standard deviation, co-efficient of variation, co-relation, probable error and regression analysis are used. This types of analysis of two organization was lacking and it is one of the few research in the field of financial study which may add one brick in the field of research.

This study has tried to show the importance and usefulness of financial and statistical analysis to increase overall performance of organization. Among two organizations; comparative study is carried as well as conclusion is drawn. Analysis of two public enterprises with the help of financial and statistical tools this study may prove it a different and unique study among other. Beside this it is hoped that this study may be useful for concerned organizations as well stakeholders.

2.4 Review of Previous Related Studies

Very few studies have been conducted taking the sample of two organizations as well as comparative study before this thesis report. Research reports of their one or two organizations are submitted to the Tribhuvan University and its wings colleges. Among them thesis on Kathmandu Upatyaka Khanepani Limited (Nepal Water Supply corporation) is very few and comparative study of all public utility sector is not found. But some related theses to this study are presented but most of them are on profit planning. Some of the theses submitted by masters' level student have been reviewed in this section.

A study by Ashok Kumar Shrestha on **Profit Planning and Control of Public Utility Sector, A Comparative Study of Nepal Electricity Authority and Nepal Telecommunication Corporation**, August 2004 has tried to find out some major problems of NEA and NTC.

Mr. Shrestha has conducted the study covering the time period of five years. Some major findings pointed by Mr. Shrestha are as follows:

-) NEA and NTC both have no in depth analysis of the company's strength and weakness.
-) Electricity leakage, theft and wastage is major problem of NEA whereas high demand and low supply is problem of NTC.
-) Huge amount of cash and bank balance of NTC indicates some deficiency of organization to utilize its liquid assets.
-) Expenses are not identified as fixed and variable in NEA and NTC.
-) Leverage ratio indicates NEA is taking high risk while NTC is not.
-) NTC is efficient in utilization of working capital, fixed assets and capital employed in generation of sales in comparison of NEA.
-) NTC has higher profitability ratio than NEA.

Similarly, another **Study on Profit Planning and Control in Nepal Telecommunication Corporation, December 2002**, is submitted by Mrs. Manjita Poudyal. Some major findings concluded by Mrs. Poudyal are as follows:

-) NTC is lacking the proper system of performance evaluation of employee.
-) NTC does not follow the periodic performance reports.
-) NTC has not adequately considered controllable and uncontrollable various affecting the organization.

Mr. Suman Kumar Rai submitted a thesis on **Profit Planning in Nepalese Public Enterprises, A Case Study on Nepal, Water Supply Corporation**, 2003. On the basis is study, Mr. Rai pointed the following major finding:

-) (KUKL) has failed to maintain periodic performance report systematically.
-) The corporation is suffering from high amount of fixed cost.
-) The lower level participation is not encouraged while planning and decision-making.

A Comparative Ratio Analysis of Nepal Electricity Authority (NEA), Nepal Water Supply Corporation (NWSC) and Nepal Telecommunication (NTC) 2006, is submitted by Mr. Poudyal. Some major findings concluded by Mr. Poudyal are as follows:

- 1) NEA is using large amount of external source in its capital structure due to which interest expenses is high. Capital structure of KUKL seems somehow better than the capital structure of NEA but it does not have ideal debt equity relation. The capital structure of NTC seems satisfactory and it is seen that NTC emphasized internal funding.
- 2) NEA and KUKL are not able to meet their internal expenses through operating profit. Due to high interest expenses net profit of this organization also affected adversely.
- 3) NEA and NTC have satisfactory inventory turnover but KUKL has poor proper stock management is lacking in KUKL.

CHAPTER – III

RESEARCH METHODOLOGY

3.1 Introduction

Research is the systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well thought out activities of gathering, recording, analyzing and interpreting the data with a purpose of findings answers to the problem²⁵. So research is an on going and ever-growing activity. It is done not only to solve a problem existing in the work setting, but also to add or continue to the general body of knowledge in a particular area of interest. Research methodology is the way to solve systematically about the research problem²⁶.

So, research methodology refers to the various sequential steps to be adopted by researcher in studying a problem with certain objectives in view. Therefore this chapter deals with the following aspects of methodology.

-) Research Design
-) Population and Sample
-) Hypothesis
-) Sources of Data
-) Data Collection and Procedure
-) Data Processing
-) Research Variables
-) Analytical Tools

3.2 Research Design

Research Design is the plan. Structure and strategy of investigation conceived so as to obtain answer to research question and to control variance. The plan is the overall, scheme or program of the research. it includes an outline of that the investigator will do from writing the hypothesis and their operational implication to the final analysis of the research is more specific. it is the outlines, the scheme, ad paradigm of the

²⁵ Haward, Wolf and Pant, Prem Raj, *Handbook for Science and Thesis Writing*, Buddha Academic Publication, Second Edition, 1999, p.230

²⁶ Kothari, C.R., *Research Methokdology, Models and Techniques*, Wiley Eastern Limited Third Edition, 1990, p.39

operation of the variables. Strategy as used here, is also more specific than plans. In other words, Strategy implies how the research objective will be reached and how the problem encountered in the research will be tackled²⁷.

Basically, the research design will be for two purposes. The first is to answer the research question and the second is to control variance. The research design asks what approach to the problem should be taken. What method will be used? What strategies will be most effective? Identification may be considered as the planning stage of a research. The remaining activities refer to design, operating and completion of the research study.

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure²⁸.

In general, research design means definite procedure and technique, with guidelines. Research design is a framework for the researcher in a particular task. The research design of this study is descriptive as well as analytical. The main objectives of the study are an examination and evaluation of the financial performance of NEA and NSWC.

The main objective of financial analysis is to find out the financial performance of NEA and KUKL. Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the Balance Sheet and the Profit and Loss Account. Financial analysis gives the real picture of financial performance of any organization. So, it helps management decide what kind of policies should be adopted. There are many variables in NEA and KUKL. This chapter looks into the research design, nature and sources of data, data gathering procedure, tools of analysis. By analyzing only certain aspects, the clear picture of financial position of such big public organizations cannot be understood, so the study is only a glance on it. This is the objective of the present study.

²⁷ Haward, Wolf and Pant, Prem Raj, Op.Cit. p.50

²⁸ Ibid. p.53

1.3 Population of Sample

The population of this study will be comprises three public utilities currently operating in the country. The sample consists of all these three public utility sector- NEA and KUKL. These units represent 100 percent of the total population and are comparable to each other in various aspects.

3.4 Time Period Covered

The present study will took for a period of six years i.e. from the fiscal year 2001 to 2007 and on this basis of this the strength and weakness of NEA and KUKL is identified.

3.5 Sources of Data/Data Collection Techniques

Data and information is the main resources of research. For this study different techniques and procedure will be adopt to collect necessary information and data. The study will be the primarily based on secondary data. The sources of secondary data will be as follows:

-) Published and unpublished relevant documents
-) Official records and publication of NEA and KUKL.
-) Magazines and booklets published by NEA and KUKL.
-) Similar previous dissertations.
-) Annual report published by NEA and NESC.
-) Targets and performance of public enterprises published by HMG/N Ministry of Finance.
-) The tenth plan published by national planning commission.

In addition some information are collected through questionnaire conversation with the top managerial level and other staff of NEA and KUKL.

3.6 Data Analysis Tools

Collection data is the connecting link to the world of reality for the researcher. The data collected in raw and crude form are managed, arranged, analyzed and presented in proper tables and formats. Such tables and formats are interpreted.

3.7 Research Variables

Research variables play vital role to analyze financial performance. Sales, production, profit and loss accounts, balance sheet, cash flow statement and time period are the main research variables of the study. These variables are measured in terms of various components of ratios.

3.8 Data Processing

Data obtained from the various sources cannot to directly used in their original form. Further they need to be verified and simplified for the purpose of analysis. Data information, figures and facts so obtained need to be checked, rechecked, edited and tabulated for computation. According to the nature of data, they have been inserted in meaningful tables. Homogenous data have been sorted in one table and similarly various table prepared in understandable manner, odd data excluded from the table. Using financial and statistical tools, data have been analyzed and interpreted.

3.9 Analytical Tools

Financial statement can provide various useful information for the parties directly or indirectly involved in the business. Selection of untitled and proper analysis makes a data effective. The researcher has used two sorts of tools.

-) Financial Tools
-) Statistical Tools

3.9.1 Financial Tools

Financial tools are those, which are used for the analysis and interpretation of financial data. These tools will be used to get the precise knowledge of the enterprises, which in turn are fruitful in exploring the strengths and weakness of the financial policies and fruitful in exploring the strengths and weakness of the financial policies and strategies. In order to meet the purpose of the study, Ratio analysis will be used. Ratio analysis helps us to summarized the large quantities of financial data and to make quantitative judgments about the organization's financial performance. The following ratios are used for evaluating the performance of organizations:

- i) Liquidity Ratio
 - a. Current Ratio

- b. Quick Ratio
- ii) Leverage/Solvency Ratio
 - a. Debt-Equity Ratio
 - b. Debt to Total Capital Ratio
 - c. Interest Coverage Ratio
 - d. Fixed Coverage Ratio
- iii) Turnover/Efficiency/Activity Ratio
 - a. Inventory Turnover Ratio
 - b. Debtor Turnover Ratio
 - c. Average Collection Period
 - d. Fixed Assets Turnover Ratio
 - e. Total Assets Turnover Ratio
 - f. Capital Employed Turnover Ratio
- iv) Profitability Ratio
 - a. Gross Profit Ratio
 - b. Net Profit Ratio
 - c. Operating Expenses Ratio
 - d. Return on Assets
 - e. Return on Shareholders' Equity

For the calculation of above mentioned ratios the following formulas are used:

$$i. \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liability}}$$

$$ii. \quad \text{Current Ratio} = \frac{\text{Quick Assets}}{\text{Current Liability}}$$

$$iii. \quad \text{Debt Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Share Holder's Equity}}$$

$$= \frac{\text{Term Debt}}{\text{Share Holder's Equity}}$$

$$iv. \quad \text{Debt to Total Capital Ratio} = \frac{\text{Long Term Debt}}{\text{Capital Employed}}$$

$$v. \quad \text{Debt to Capital Ratio} = \frac{\text{Long Term Debt}}{\text{Capital Employed}}$$

OR

$$= \frac{\text{Total Debt}}{\text{Capital Employed} \Gamma \text{Current Liability}}$$

vi. Interest Coverage Ratio = $\frac{\text{NPBIT}}{\text{Interest}}$

vii. Fixed Coverage Ratio = $\frac{\text{Net Profit Before Interest and Tax}}{\text{Fixed Charge}}$

viii. Inventory Turnover Ratio = $\frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

OR

$$\text{IT Ratio} = \frac{\text{Net Sales}}{\text{Closing Stock}}$$

ix. DT Ratio = $\frac{\text{Net Credit Sales}}{\text{Average Debtors}}$

OR

$$= \frac{\text{Sales}}{\text{Closing Stock}}$$

x. ACP = $\frac{\text{Debtors} \times (12 \text{ months}/52 \text{ weeks}/365 \text{ days})}{\text{Credit Sales}}$

OR

$$\frac{12 \text{ months}/52 \text{ weeks}/365 \text{ days}}{\text{Debtors Turnover}}$$

OR

$$\frac{\text{Debtors}}{\text{Sales/Day}}$$

xi. FAT Ratio = $\frac{\text{Net Sales}}{\text{Net Fixed Asset}}$

xii. Total Assets Turnover Ratio = $\frac{\text{Net Sales}}{\text{Total Asset}}$

xiii. CET Ratio = $\frac{\text{Sales}}{\text{Capital Employed}}$

xiv. GP Ratio = $\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$

xv. NP Ratio = $\frac{\text{Net Profit After Tax}}{\text{Net Sales}} \times 100$

$$\text{xvi. Operating Ratio} = \frac{\text{Operating Expenses}}{\text{Net Asset}}$$

$$\text{xvii. ROA} = \frac{\text{NPAT}}{\text{Total Asset}}$$

OR

$$= \frac{\text{NPAT} - \text{Pref.Dividend}}{\text{Total Asset}}$$

OR

$$= \frac{\text{NPAT} \Gamma \text{Interest}}{\text{Total Asset}}$$

OR

$$\frac{\text{NPAT} - \text{Pref.Dividend}}{\text{Total Tangible Asset}}$$

$$\text{xviii. ROSE} = \frac{\text{Net Profit After Tax}}{\text{Shareholders' Equity}}$$

OR

$$= \frac{\text{Net Profit After Tax} \Gamma \text{Interest}}{\text{Shareholders' Equity}}$$

3.9.2 Statistical Tools

Various statistical tools will be used to analyze the data available to the researcher. These tools are used in research in order to draw there liable conclusion through the analysis of financial data.

Following tools are used for the purpose.

- i. Arithmetic Mean \bar{X}^A
- ii. Coefficient of Variation (CV)
- iii. Co-efficient of Correlation (r)
- iv. Probable Error to Correlation Coefficient (PE)
- v. Least Square Linear Trend

i. Arithmetic Mean

An average is a single value selected from a group of values to represent them in same way, which is supposed to stand for whole group of which it is a part, as typically of all the values in the group. Out of various measures of the central

tendency, arithmetic mean is one of the useful tools applicable here. It is easy to calculate and understand and based on all observations.

Arithmetic mean of a given set of observation is their sum dividend by the number of observation. In general, if $X_1, X_2, X_3, \dots, X_n$, are the given observations, and then arithmetic mean usually denoted by \bar{X} is given by:²⁹

$$\bar{X} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{N}$$

Where,

\bar{X} = Arithmetic Mean

N = number of Observation

ii. Coefficient of Variation

According of Prof. Karl Pearson, Coefficient of variation is the percentage variance in the mean, standard deviation being considered as the total variation in the mean, it is one of the relative measures of dispersion that is useful in comparing the amount of variation is data group with different mean.

Coefficient of Variation, denoted by C.V. is given by:

$$CV = \frac{\sigma}{\bar{X}} \times 100$$

Where, σ = Standard Deviation = $\sqrt{\frac{\sum X^2}{n} - \left(\frac{\sum X}{n}\right)^2}$

For comparing the variability of two distributions we compute the coefficient of variation for each distribution. A distribution with smaller CV is said to be more homogeneous or uniform of less variable than other. Conversely, a series with greater CV is said to be more variable or heterogeneous than the other.³⁰

iii. Karl Pearson's Coefficient of Correlation (r)

It is a statistical tool for measuring the intensity of the magnitude of linear relationship between two series. Karl Pearson's Measure known as Pearson's Correlation between two variables/series X and Y us usually denoted by r and can be obtained as:

²⁹ Bajracharya, B.C., *Business Statistics and Mathematics*, M.K. Publisher and Distributor, 2057, P.101.

³⁰ Ibid. P. 180

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Where,

N = Number of observation in series X and Y

X = Sum of observation in Series X

Y = Sum of observation in Series Y

X² = Sum of squared observation in Series X

Y² = Sum of squared observation in Series Y

XY = Sum of the product of observation in Series X and Y

Value of r lies between -1 and +1, r=1 implies that there is a perfect correlation between the variables. the variables, r=-1, implies at there is a perfect negative correlation between the variables, r=0 means the variables are uncorrelated, they may be in some other form such as logarithm, quadratic, exponential etc³¹.

iv. Probable Error of Correlation Coefficient (PE)

Probable error of correlation coefficient is an old measure of testing the reliability of an observed value of correlation coefficient. it is calculated to find the extent to which correlation coefficient is depends upon the condition of random sample. probable error of correlation coefficient denoted by P.E. (r) is obtained as:

$$P.E. = 0.6745 \left| \frac{\sum Zr^2}{\sqrt{N}} \right|$$

Where, $\left| \frac{\sum Zr^2}{\sqrt{N}} \right|$ = Standard Error

Reason for taking 0.6745 is that in a normal distribution 50% of observations lie in the range $\bar{x} \pm 0.6745\sigma$ Where \bar{x} and σ denote the population mean and standard deviation.

³¹ Ibid.p.255

P.E. is used to test if an observed value of sample correlation coefficient is significant of any correlation in the population. If $r < 6$ PE correlation is not significant and if $r > 6$ P.E., r is define significant³².

v. Least Square Linear Trend

Trend analysis is a very useful and commonly applied tool to forecast the future event in quantitative term, on the basis of the tendencies in the dependent variable in the past period.

The straight-line trend implies that irrespective of the seasonal and cyclical as well as irregular fluctuation, the rend value increase by absolute amount per unit of time. The linear trend values from a series in arithmetic progression³³.

Mathematically, $Y = a + bX$

Where,

Y = The value of the dependent variable

a = Y-intercept

b = Slope of the trend line

x = Value of the independent Variable

Normal equations fitting above equations are:

$$Y = Na + bX$$

$$XY = a X + b X_2$$

Since,

$$X = 0, a = \frac{Y}{N} \text{ and } b = \frac{XY}{x^2}$$

³² Ibid, p.257

³³ Ibid, pp.276-277

CHAPTER-IV

DATA ANALYSIS AND PRESENTATION

This chapter highlights the financial position of NEA and KUKL. Some financial and statistical tools have been used to evaluate the financial position of these organizations. Under the financial tools ratio analysis is used likewise under the statistical tools Coefficient of Correlation, the Probable Error, Coefficient of Variance (CV), Standard Deviation (SD) and Trend Analysis are used. In Ratio Analysis, liquidity position is evaluated.

With the help of ratio analysis the financial performance of NEA and KUKL has been analyzed and interpreted, so that the strengths and weakness of these organization as well as historical performance and financial condition can be determined. In addition; what is the NEA and KUKL operational target and what impact will it leave in the financial position in the future can be ascertained.

4.1 Analysis and Presentation of Financial Tools

4.1.1 Liquidity Ratio

To test the short- term solvency of organization liquidity ratio is useful tool. Under these two types of ratio is calculated. First, Current Ratio is calculated as follows:

4.1.1.1 Current Ratio

It is a test of liquidity. It measures short run debt paying ability of the firm it measures the availability of current assets for meeting current liabilities. This ratio is calculated as

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table 4.1
Current Ratio of NEA

(NRs. in million)

| Year | Current Assets | Current Liabilities | Current Ratio |
|-----------------------------------|-----------------------|----------------------------|----------------------|
| 2001 | 5053.20 | 4786.30 | 1.05 |
| 2002 | 5761.10 | 5477.20 | 1.03 |
| 2003 | 6313.60 | 6113.80 | 1.03 |
| 2004 | 7322.00 | 5948.10 | 1.23 |
| 2005 | 7690.50 | 6639.30 | 1.15 |
| 2006 | 8311.60 | 8243.80 | 1.00 |
| Average Current Ratio =1.08 times | | | |

Source: Annual Report, NEA

Table 4.1 shows that the current ratio of NEA for the study period remained, 1.05:1, 1.03:1, 1.03:1, 1.23:1,1.15:1 and 1.00:1 respectively from the year 2001 to 2006. Computed current ratios are below the standard of 2:1 which shows the weak liquidity position of NEA. Current liquidity is not covered by current assets. Current assets increased to Rs. 8311.6 million in 2006 from Rs. 5053.2 million in the year 2001. It is increased by Rs 3258.4 million. Similarly, liability is increased to Rs. 8243.8 million in 2006 from Rs. 4786.3 million in 2001. It is increased by Rs.347.5 million. This data shows assets is increased highly than C.L. though current ratio is below the standard which shows the inefficient liquidity management of NEA.

Table 4.2
Current Ratio of KUKL

| Year | Current Assets | Current Liabilities | Current Ratio |
|-----------------------------------|-----------------------|----------------------------|----------------------|
| 2001 | 863.3 | 208.30 | 4.14 |
| 2002 | 1001.20 | 458.00 | 2.18 |
| 2003 | 1077.91 | 526.00 | 2.04 |
| 2004 | 1061.31 | 658.70 | 1.61 |
| 2005 | 1141.26 | 735.70 | 1.55 |
| 2006 | 1274.88 | 857.70 | 1.48 |
| Average Current Ratio =2.16 times | | | |

Source: Annual Report, KUJL

Table 4.2 shows the current ratio of KUKL for the study period from 2001 to 2006 as 4.14:1, 2.18:1, 2.04:1, 1.61:1, 1.55:1 and 1.48:1 respectively. It indicates liquidity position of KUKL during the year 2001, 2002 and 2003 was sound because its liquid ratio was above the standard. But during the year 2004 and onwards its current ration is decreasing which shows the liquidity management failed to maintain its previous position. KUKL became unable to cover its current liquidities by current assets. A current asset of KUKL in 2001 was Rs. 863.33 million and it increased by Rs. 411.55 million and reached to Rs. 1214.88 million in 2006. Similarly current liability was Rs. 208.3 million in 2001 and it reached to Rs 857.7 increasing by Rs.64 million. It shows current liability is increased by more amount in comparison to C.A.

Average C.R. of KUKL is 2.16:1 which is above the standard and indicates the sound liquidity position but it is mostly driven by liquidity position before 2006.

In comparative study we can say that liquidity position of NEA is not good, it can't meet its current obligation. The liquidity position of NEA is poor in comparison to KUKL. The average C.R. of NEA is 1.08:1 where as C.R. of KUKL is 2.16. Among these two PE, KUKL has better liquidity position.

4.1.1.2 Quick Ratio

It is also as Acid test ratio of Liquid ratio. The ratio shows the liquidity of the organization in real sense. Liquid Assets are current assets less prepaid and stock. This ratio measures the ability of firm to pay current liability immediately. It is calculated as below:

$$\text{Quick Ratio} = \frac{\text{Quick Asset}}{\text{Current liability}}$$

Where,

Quick Assets = current Assets - Stock - Prepaid Expenses.

Table 4.3
Quick Ratio of NEA

(NRs. in million)

| Year | CA | Stock | Advance | QA | CL | Quick Ratio |
|--------------------------|---------|---------|---------|---------|---------|-------------|
| 2001 | 5053.20 | 740.00 | 1634.20 | 2679.00 | 4786.30 | 0.55 |
| 2002 | 5761.10 | 982.30 | 1932.00 | 2846.80 | 5477.20 | 0.51 |
| 2003 | 6313.60 | 960.00 | 2634.90 | 2718.70 | 6113.80 | 0.44 |
| 2004 | 7322.00 | 1058.10 | 3314.40 | 2949.50 | 5948.10 | 0.49 |
| 2005 | 7690.50 | 1017.20 | 2216.90 | 4456.40 | 6639.30 | 0.67 |
| 2006 | 8311.60 | 1204.70 | 2608.40 | 4498.50 | 8243.80 | 0.54 |
| Average Quick Ratio 0.53 | | | | | | |

Source: Annual Report, NEA

Average quick ratio of NEA is 0.53:1. During the study year, quick ratio is below the standard i.e. 0.55:1, 0.51:1, 0.44:1, 0.49:1, 0.67:1, and 0.54:1 respectively from 2001 to 2006. It shows that NEA is unable to meet the short term obligation through its quick assets. During the year of 2003 and 2004 the ratio is 0.4:1 and 0.49:1 respectively which is very serious problem ratio shows NEA can pay only Rs. 0.53 in short term for the liability of Re 1.

Quick asset was Rs. 2679 million in 2001 and Rs. 4498.50 million in 2004. It increased by 1.68 times similarly C.L. was Rs. 4786.3 million in 2001 and Rs. 8243.8 million in 2006. It increased by 1.72 times. The proportion of increment in CL is higher than the proportion of increment in quick assets.

Table 4.4
Quick Ratio of KUKL

(NRs. in million)

| Year | CA | Stock | Advance | QA | CL | Quick Ratio |
|-----------------------------------|-----------|--------------|----------------|-----------|-----------|--------------------|
| 2001 | 863.33 | 334.50 | 88.80 | 440.03 | 208.30 | 2.11 |
| 2002 | 1001.20 | 258.60 | 48.80 | 693.80 | 458.00 | 1.51 |
| 2003 | 1077.91 | 257.00 | 39.00 | 781.91 | 526.00 | 1.48 |
| 2004 | 1061.31 | 311.20 | 26.60 | 723.51 | 658.70 | 1.09 |
| 2005 | 1141.26 | 290.60 | 34.30 | 816.36 | 735.70 | 1.11 |
| 2006 | 1274.88 | 298.80 | 36.60 | 939.48 | 857.70 | 1.10 |
| Average Quick Ratio is 1.39 times | | | | | | |

Source: Annual Report, KUKL

Average quick ratio of KUKL 1.39:1 shows the sound position to meet short term obligation in comparison to current ratio, Quick ratio is sound and all QR is above the standard. But the decreasing QR shows that KUKL may face the lack of assets to meet its short term obligation if this trend continuous.

Quick asset of KUKL was Rs.44.03 million in 2001 and Rs 939.4 million in 2006. It increased by 2.13 times whereas CL was Rs 208.3 million in 2001 and Rs 857.7 million in 2006 which increased by 4.11 times. The proportion of increase in CL is very higher than the proportion of increase in Quick Assets.

4.1.2 Leverage Ratio

To examine the long -term solvency of the corporation, the following ratios are calculated under this group.

- 1) Debt Equity Ratio (D/E Ratio)
- 2) Debt to Total Capital Ratio (DTC Ratio)
- 3) Interest Coverage Ratio (IC Ratio)
- 4) Fixed Coverage Ratio (FC Ratio)

4.1.2.1 Debt Equity Ratio (D/E Ratio)

This ratio is calculated to judge long term financial policy of the business organization. The ratio establishes relationship between long term loans and owner's fund. It is calculated as follows:

$$\text{Debt -Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Share Holder's Equity}}$$

OR,

$$= \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

4.1.2.2 Debt to Total Capital Ratio (DTC Ratio)

To know the proportion of long term Debt on Total Capital Employed DTC Ratio is calculated as follows:

$$\text{DTC Ratio} = \frac{\text{Long Term Debt}}{\text{Permanent Capital}}$$

Table 4.5
DTC Ratio of NEA

(NRs. in million)

| Year | Long Term Debt | Permanent Capital | Ratio |
|-------------|-----------------------|--------------------------|--------------|
| 2001 | 23824.30 | 37012.40 | 0.64 |
| 2002 | 30155.70 | 44475.60 | 0.68 |
| 2003 | 36707.50 | 52132.10 | 0.70 |
| 2004 | 41474.50 | 58403.50 | 0.71 |
| 2005 | 45344.80 | 62568.20 | 0.72 |
| 2006 | 50051.20 | 6858.50 | 0.73 |

Source: Annual Report

The above table depicts that the debt to total capital ratio has been increasing gradually low ratio represents security to creditors. In contrary a high ratio represents a grater risk to creditors as well as shareholders.

In 2001 the DTC ratio of NEA is 0.64 which increased to 0.67 in 2002, 0.70 in 2003, 0.71 in 2004, 0.72 in 2005 and 0.72 in 2006 which is in increasing proportion. It shows that the risk of creditors in also increasing.

Average value is 0.695:1 which shows management of debt and total capital is not satisfactory in NEA.

Table 4.6
DTC Ratio of KUKL

(NRs. in million)

| Year | Long Term Debt | Permanent Capital | Ratio |
|-------------|-----------------------|--------------------------|--------------|
| 2001 | 1639.40 | 3645.00 | 0.45 |
| 2002 | 1651.50 | 3570.40 | 0.46 |
| 2003 | 1820.30 | 3667.80 | 0.49 |
| 2004 | 1894.50 | 3666.70 | 0.52 |
| 2005 | 1943.80 | 3657.70 | 0.53 |
| 2006 | 2041.20 | 3686.20 | 0.55 |

Source: Annual Report

The DTC ratio of KUKL is 0.45 in 2001, 0.46 in 2002, 0.49 in 2003, 0.51 in 2004, 0.53 in 2005 and 0.55 in 2006. Its DTC ratio is also in increasing order which denotes the security of creditor and shareholder is decreasing. Its long term debt was Rs. 1639.4 million in 2001 and it increase to 2041.2 million in 2006 causing an increment of Rs. 401.8 million. It is 1.24 times. On the other hand, its permanent capital was Rs.3645 million in 2001 and reached only to Rs. 3686.2 million causing an increment of Rs. 41.2 million. It is 1.01 times. The increasing tendency of LTD is greater than increasing tendency in capital which denotes less security to shareholder and creditors too.

4.1.2.3 Interest Coverage Ratio (IC Ratio)

It indicates the ability of a firm to pay interest charges on its borrowed capital. It is also called 'Debt Service Ratio' or 'Time Interest Earned Ratio'. A high ratio is a sign of low burden of borrowing and lower utilization of borrowed capital. It is calculated as:

$$\text{IC Ratio} = \frac{\text{Net Profit before Interest and Tax (NPBIT)}}{\text{Interest}}$$

Table 4.7
IC Ratio of NEA

(NRs. in million)

| Year | NPBIT | Interest | Ratio |
|------|---------|----------|-------|
| 2001 | 1308.90 | 1114.30 | 1.17 |
| 2002 | 2000.80 | 1244.30 | 1.61 |
| 2003 | 1186.30 | 1188.20 | 1.00 |
| 2004 | 678.10 | 1395.50 | 0.49 |
| 2005 | 2517.50 | 2973.40 | 0.85 |
| 2006 | 1580.30 | 3369.20 | 0.47 |

Source: Annual Report

The above table depicts that the Interest Coverage Ratio (IC Ratio) of NEA is not satisfactory and also in decreasing order. It was 1.14 in 2001, 1.06 in 2002, 0.99 in 2003, 0.48 in 2004, 0.84 in 2005 and 0.46 in 2006. It shows that NEA is not able to pay interest on its borrowing from 2003. In 2001 ratio is 1.14 which indicates NEA was able to pay its interest from operating profit only for 1 year but it is not able to meet its interest in 2003 and onwards.

Similarly, its average IC ratio of 0.925 shows that to pay the interest of Re 1 NEA has only Rs 0.925 which is critical condition for shareholder in one hand and no security of the investment of creditor.

Table 4.8
IC Ratio of KUKL

(NRs. in million)

| Year | NPBIT | Interest | Ratio |
|-------------|--------------|-----------------|--------------|
| 2001 | 28.60 | 13.80 | 2.07 |
| 2002 | 32.60 | 57.70 | 0.56 |
| 2003 | 1.70 | 32.00 | 0.05 |
| 2004 | 0.40 | 48.10 | 0.01 |
| 2005 | 47.60 | 52.20 | 0.91 |
| 2006 | 37.00 | 56.20 | 0.66 |

Source: Annual Report, KUKL

The IC ratio of KUKL is very much poor which is calculated in above table. Its IC ratio in 2001 is highly negative i.e. 2.07:1 and 2002 is 0.56:1. Similarly 0.05:1, 0.008:1, 0.911:1 and 0.65:1 in 2003, 2004, 2005 and 2006 respectively. Due to the heavy loss during the FY 2001 its average IC ratio is badly affected to 0.0209:1. It shows that KUKL has only Re 0.020 to pay the interest of Re 1. This is worse condition for creditors and shareholders too.

4.1.3 Turnover/ Activity/ Efficiency Ratio

To find out the efficiency on utilization of its resources, the following ratio analysis items are used under this group:

- 1) Inventory Turnover Ratio (IT Ratio)
- 2) Debtor Turnover Ratio (DT Ratio)
- 3) Average collection Period (ACP)
- 4) Fixed Assets Turnover Ratio (FAT Ratio)
- 5) Total Assets Turnover Ratio (TAT Ratio)
- 6) Capital Employed Ratio (CR Ratio)

4.1.3.1 Inventory Turnover Ratio (IT Ratio)

This ratio measures how many times the average stock is sold during the year. It is calculated as :

$$\text{Inventory Turnover Ratio} = \frac{\text{Sales}}{\text{Closing Stocks}}$$

Table 4.9
IT Ratio of NEA

(NRs. in million)

| Year | Sales | Closing Stocks | Ratio |
|-------------|--------------|-----------------------|--------------|
| 2001 | 5396.70 | 740.00 | 7.29 |
| 2002 | 6856.00 | 982.30 | 6.98 |
| 2003 | 8160.80 | 960.90 | 8.49 |
| 2004 | 9476.20 | 7058.10 | 8.95 |
| 2005 | 11012.60 | 1017.20 | 10.82 |
| 2006 | 11814.60 | 1204.70 | 9.87 |

Source: Annual Report, NEA

A high inventory turnover is indicative of efficient inventory management and low inventory turnover implies excessive inventory levels that warranted by production and sales activities.

It Ratio of NEA in 2001 is 7.29 times and in 2002 it is 6.97 times. Similarly it is 8.49, 8.95, 10.8 and 9.8 times in 2003, 2004, 2005 and 2006 respectively. The inventory turnover ratio of NEA is satisfactory and it indicates that stock management in NEA is good.

Table 4.10
IT Ratio of KUKL

(NRs. in million)

| Year | Sales | Closing Stocks | Ratio |
|------|--------|----------------|-------|
| 2001 | 287.81 | 334.50 | 0.86 |
| 2002 | 382.52 | 323.10 | 1.18 |
| 2003 | 421.62 | 309.30 | 1.36 |
| 2004 | 462.59 | 311.20 | 1.71 |
| 2005 | 513.33 | 290.60 | 1.77 |
| 2006 | 530.81 | 299.00 | 1.55 |

Source: Annual Report

The inventory turnover ratio of KUKL in 2001 is 0.86 times is very poor. Though it is in improving yet improvement is also nominal. ITR in 2002, 2003, 2004, 2005 and 2006 is 1.18, 1.36, 1.71, 1.77 and 1.55 times respectively. Inventory management of KUKL is not satisfactory and it directly affects the overall performance of corporation.

4.1.3.2 Debtors Turnover Ratio (DT Ratio)

This ratio indicates the velocity of debt- collection of a firm. In other words, it indicates the number of times average debtors are turned over during a year. It is calculated as follows:

$$\text{Debtors Turnover Ratio} = \frac{\text{Sales}}{\text{Closing Debtors}}$$

Table 4.11
DT Ratio of NEA

(NRs. in million)

| Year | Sales | Closing Debtors | Ratio |
|-------------|--------------|------------------------|--------------|
| 2001 | 5390.70 | 1530.90 | 3.53 |
| 2002 | 6856.00 | 1525.50 | 4.49 |
| 2003 | 8160.80 | 1678.50 | 4.86 |
| 2004 | 9476.20 | 2284.90 | 4.14 |
| 2005 | 11012.60 | 3380.20 | 3.26 |
| 2006 | 11814.60 | 3773.20 | 3.13 |

Source: Annual Report

The higher debtor turnover ratio indicates efficient collection of debts. It shows the short period collection of cash from debtor.

DT Ratio of NEA during the study period is satisfactory. It's DT Ratio in 2001 is 3.53 times and in 2002 is 4.49 times. Similarly its DT Ratio is 4.86, 4.14, 3.25 and 3.13 in 2003, 2004, 2005 and 2006 respectively. Though its DT Ratio seems satisfactory it is decreasing every year which shows NEA is not maintaining good management to sustain and decrease the collection period from debtors.

Table 4.12
DT Ratio of KUKL

(NRs. in million)

| Year | Sales | Closing Debtors | Ratio |
|-------------|--------------|------------------------|--------------|
| 2001 | 287.81 | 255.60 | 1.13 |
| 2002 | 382.52 | 364.60 | 1.05 |
| 2003 | 421.62 | 465.10 | 0.91 |
| 2004 | 530.81 | 550.80 | 0.96 |
| 2005 | 513.33 | 576.30 | 0.89 |
| 2006 | 462.59 | 686.70 | 0.67 |

Source: Annual Report

DTR of KUKL seems poor during the study period and it is also decreasing yearly. DTR of KUKL in the year of 2001, 2002, 2003, 2004, 2005 and 2006 is 1.13 times, 1.05 times, 0.91 times, 0.96 times 0.89 times and 0.67 times respectively. It shows the deteriorating condition of collection from the debtors. Debts are not being collected rapidly. Its debt collection period is increasing yearly.

4.1.3.3 Average Collection Period (AC Period)

Average Collection period is calculated to know the average number of days/months for a firm has to wait before trade debtors are converted into cash. It is calculated as follows:

$$\text{Average Collection Period} = \frac{\text{Days in a year (No. of working days)}}{\text{Debtors Turnover Ratio}}$$

Table 4.13
AC Period of NEA

(NRs. in million)

| Year | Sales | DTR | ACP(Days) |
|-------------|--------------|------------|------------------|
| 2001 | 5396.70 | 3.52 | 103.69 |
| 2002 | 6856.00 | 4.49 | 81.29 |
| 2003 | 8160.80 | 4.86 | 75.10 |
| 2004 | 9476.20 | 4.14 | 88.16 |
| 2005 | 11012.60 | 3.25 | 112.30 |
| 2006 | 11814.60 | 3.13 | 116.61 |

Source: Annual Report, NEA

While calculating ACP of NEA the following results have been obtained. ACP in 2001, 2002, 2003, 2004, 2005 and 2006 are 104, 81, 75, 88, 112 and 117 days respectively. The ACP is worst in the year 2006 which is 117 days. Lower ACP is good for organization. NEA does not have good ACP because its lowest ACP is 75 days during the year 2003 which indicates that debtors are paying the due only after

75 days which is very long period. Long ACP effects profitability of organization adversely.

Table 4.14
AC Period of KUKL

(NRs. in million)

| Year | Sales | DTR | ACP(Days) |
|-------------|--------------|------------|------------------|
| 2001 | 287.81 | 1.12 | 326.00 |
| 2002 | 382.52 | 1.04 | 351.00 |
| 2003 | 421.62 | 0.90 | 406.00 |
| 2004 | 530.81 | 0.96 | 380.00 |
| 2005 | 513.33 | 0.89 | 410.00 |
| 2006 | 462.59 | 0.67 | 544.00 |

Source: Annual Report, KUKL

ACP of KUKL seems very worse from the above calculation table. The worst ACP of KUKL is 544 days in 2006. Even its lowest ACP is also 326 days. Higher ACP indicates long period in the collection of dues from debtors. KUKL's ACP shows that it can't collect due even in one year which is very critical condition for any organization.

4.1.3.4 Fixed Assets Turnover Ratio (FAT Ratio)

The fixed assets turnover ratio indicates that extent to which the investment in fixed assets contributes towards sales. This ratio measures the efficiency with which the firm is utilizing its investment in fixed assets. It also indicates the adequacy of sales in relation to the investment in fixed assets. This ratio is determined by dividing sales (Net) by net fixed assets (i.e. the depreciated value of fixed assets, i.e. gross assets less depreciation)

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Net Fixed Assets}}$$

Table 4.15
FAT Ratio of NEA

(NRs. in million)

| Year | Sales | Net Fixed Assets | Ratio |
|-------------|--------------|-------------------------|--------------|
| 2001 | 5396.70 | 31222.80 | 0.17 |
| 2002 | 6856.00 | 35195.70 | 0.19 |
| 2003 | 8160.80 | 37103.70 | 0.22 |
| 2004 | 9476.20 | 58538.20 | 0.16 |
| 2005 | 11012.60 | 56949.00 | 0.19 |
| 2006 | 11814.60 | 57597.70 | 0.21 |

Source: Annual Report, NEA

Increment in FAT Ratio indicates the improved work efficiency and financial condition. It shows the efficiency of a concern on utilizing its fixed assets. From the above table it is observed that fixed assets of NEA increased except last two FY of studied periods. Its FAT Ratio is 0.17, 0.19, 0.21, 0.16, 0.19 and 0.20 in 2001, 2002, 2003, 2004, 2005 and 2006 respectively. Its highest FAT Ratio is 0.20 (i.e. 20%) in FY 2006. It shows that NEA utilized its fixed assets quite in better way in comparison to previous year but its utilization seems poor. NEA lacks proper policy and sources of fund to expand the service which is one of the major causes for low FAT Ratio.

Table 4.16
FAT Ratio of KUKL

(NRs. in million)

| Year | Sales | Net Fixed Assets | Ratio |
|-------------|--------------|-------------------------|--------------|
| 2001 | 287.81 | 1920.10 | 0.15 |
| 2002 | 382.52 | 2036.50 | 0.19 |
| 2003 | 421.62 | 2063.70 | 0.21 |
| 2004 | 530.81 | 2109.60 | 0.25 |
| 2005 | 513.33 | 2768.90 | 0.18 |
| 2006 | 462.59 | 2759.20 | 0.17 |

Source: Annual Report, NEA

FAT ratio of KUKL in 2001 is 0.14 in 2002 are 0.18, in 2003 is 0.20, in 2004 is 0.25, in 2005 is 0.18 and in 2006 is 0.16. Its FAT ratio is decreasing every year except in FY 2004 its highest FAT Ratio is also only 0.25 in 2004 and lowest FAT Ratio is 0.14 in 2001. This data shows KUKL is not able to utilize its fixed assets properly. Its increment in fixed assets is also nominal except in FY 2005. During FY 2005 also KUKL did not consider to utilize fixed assets. Its intension seemed only to increase fixed asset rather than efficient utilization.

4.1.3.5 Total Assets Turnover Ratio (TAT Ratio)

TAT Ratio shows the relationship between sales and total assets. Higher ratio indicates the better utilization of total assets of the organization.

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

Table 4.17
TAT Ratio of NEA

(NRs. in million)

| Year | Sales | Total Assets | Ratio |
|------|----------|--------------|-------|
| 2001 | 5396.70 | 53145.20 | 0.11 |
| 2002 | 6856.00 | 60425.20 | 0.11 |
| 2003 | 8160.80 | 67574.70 | 0.12 |
| 2004 | 9476.20 | 71251.00 | 0.13 |
| 2005 | 11012.60 | 73908.00 | 0.15 |
| 2006 | 11814.60 | 79568.30 | 0.15 |

Source: Annual Report, NEA

TAT Ratio of NEA is not good during the study period. Its TAT Ratio in FY 2001 is 0.10 in FY 2002 is 0.11 and 0.12 in FY 2003. Similarly it is 0.13 in 2004, 0.14 in 2005 and also 0.14 in FY 2006. It shows the increment in TAT Ratio but increment is not satisfactory. To improve the Ratio of total assets to turnover NEA should utilize

its total assets efficiently. But more or less the TAT Ratio is improving gradually which shows NEA is improving efficiently utilization of total assets.

Table 4.18
TAT Ratio of KUKL

(NRs. in million)

| Year | Sales | Total Assets | Ratio |
|-------------|--------------|---------------------|--------------|
| 2001 | 287.81 | 3691.20 | 0.08 |
| 2002 | 382.52 | 4028.30 | 0.09 |
| 2003 | 421.62 | 4193.70 | 0.11 |
| 2004 | 530.81 | 4325.50 | 0.12 |
| 2005 | 513.33 | 4393.40 | 0.11 |
| 2006 | 462.59 | 4543.90 | 0.10 |

Source: Annual Report, KUKL

TRT Ratio of KUKL shows in above table are not satisfactory throughout the study period i.e. 2001 to FY 2006. Its TRT Ratio is 0.07, 0.09, 0.10, 0.12, 0.11 and 0.10 in the year 2001, 2002, 2003, 2004, 2005 and 2006 respectively. KUKL increased its investment in total assets every year. Its total assets of Rs. 3691.2 million increased to Rs. 4543.9 million which is 1.23 times larger during the period of five years.

Highest TRT Ratio of KUKL is 0.12 in FY 2004 which is not maintained and decreased to 0.11 in 2005 and further decreased to 0.10 in FY 2006 which shows KUKL is lacking efficient management to utilize total assets.

4.1.3.6 Capital Employed Turnover Ratio (CET Ratio)

Capital Employed is the amount entrusted by the owners and long-term loan financiers to the firm. It includes the amount of owner's equity and debenture, bond and long-term loan. The amount of capital Employed represents the net current assets (current assets minus current liabilities) and long-term assets of the firm. Capital Employed turnover Ratio is calculated to know the effectiveness in utilizing the capital Employed by dividing Sales By Capital Employed as follows:

$$\text{Capital Employed Turnover Ratio} = \frac{\text{Sales}}{\text{Capital Employed}}$$

Table 4.19
CET Ratio of NEA

(NRs. in million)

| Year | Sales | Capital Employed | Ratio |
|-------------|--------------|-------------------------|--------------|
| 2001 | 5396.70 | 48895.07 | 0.11 |
| 2002 | 6856.00 | 55936.70 | 0.12 |
| 2003 | 8160.80 | 62503.80 | 0.13 |
| 2004 | 9476.20 | 66547.10 | 0.14 |
| 2005 | 11012.60 | 68022.00 | 0.16 |
| 2006 | 11814.60 | 72063.00 | 0.16 |

Source: Annual Report, NEA

During the study period of FY 2001 to 2006, Capital Employed Turnover Ratio (CETR) of NEA does not seem sound. Its CET Ratio in 2001 is 0.11:1 in 2002 is 0.122:1, in 2003 is 0.13:1 in 2004 is 0.142:1, in 2005 is 0.161:1 and in 2006 is 0.1639:1. Though its CET Ratio is in increasing trend at increment is very nominal. Average CET Ratio 0.1382:1 shows the fact that the profitability of organization is not good. Because higher CET Ratio brings high profitability in organization. To take the organization towards profitability utilization and good management of capital employed is necessary in NEA

Table 4.20
CET Ratio of KUKL

(NRs. in million)

| Year | Sales | Capital Employed | Ratio |
|-------------|--------------|-------------------------|--------------|
| 2001 | 287.81 | 3482.90 | 0.08 |
| 2002 | 382.52 | 3570.30 | 0.11 |
| 2003 | 421.62 | 3667.70 | 0.11 |
| 2004 | 530.81 | 3666.80 | 0.14 |
| 2005 | 513.33 | 3657.70 | 0.14 |
| 2006 | 462.59 | 3686.20 | 0.30 |

Source: Annual Report, KUKL

CET Ratio of KUKL within FY 2001 to 2006 is very poor. Its CET Ratio is decrease up to 0.08:1 in 2001 which shows the worse position of profit in the organization. Its CET Ratio in 2002 is 0.107:1 and 0.114:1, 0.126:1, 0.140:1 and 0.1439:1 in 2003, 2004, 2005 and 2006 respectively. Similarly average CET Ratio is 0.1191:1 shows the worse profitability. In short it can be concluded that utilization of capital in KUKL is poor.

4.1.4 Profitability Ratio

This Ratio is calculated in relation to Sales and Investment. Different ratio calculated under this group is:

- i) Operating Profit Ratio (Op Ratio)
- ii) Net Profit Ratio (NP Ratio)
- iii) Operating Expenses Ratio (OE Ratio)
- iv) Return On Assets (ROA)
- v) Return On Shareholders Equity (ROSE)

4.1.4.1 Operating Profit Ratio (OP Ratio)

One of the most common ratios in operational analysis is the calculation of operating profit as a percentage of net sales. A firm should have a reasonable operating profit margin to ensure adequate coverage for operating expenses of the firm and sufficient return to the owners of the business. Operating profit ratio expresses the relationship between operating profit and sales and is usually expressed in percentage. The operating profit should be adequate to cover operating expenses and to provide fixed charge, to pay dividend and build up reserves. And it is calculated by dividing operating profit by net sales as follows:

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Sales}}$$

Table 4.21
OP Ratio of NEA

(NRs. in million)

| Year | Sales | Operating Profit | Ratio |
|-------------|--------------|-------------------------|--------------|
| 2001 | 5396.70 | 2601.40 | 0.48 |
| 2002 | 6856.00 | 3607.10 | 0.55 |
| 2003 | 8160.80 | 2440.90 | 0.30 |
| 2004 | 9476.20 | 2427.30 | 0.25 |
| 2005 | 11012.60 | 4332.40 | 0.39 |
| 2006 | 11814.60 | 3936.60 | 0.33 |

Source: Annual Report, NEA

This ratio expresses the relationship between operating profit and sales. The higher ratio indicates the efficient condition of the organization.

Above table shows the operating profit of NEA is not satisfactory except the FY 2001 and 2006 which is 0.48 and 0.52 respectively. Operating profit at least should be more than 40% (i.e. 0.4) but all ratios in rest year is below the standard which 0.29 in 2003, 0.25 in 2004, 0.39 in 2005 and 0.33 in 2006. There is continuous fluctuation in operating profit ratio and decreasing condition too.

Table 4.22
OP Ratio of KUKL

(NRs. in million)

| Year | Sales | Capital Employed | Ratio |
|-------------|--------------|-------------------------|--------------|
| 2001 | 287.81 | (41.50) | (0.144) |
| 2002 | 382.52 | 40.90 | 0.106 |
| 2003 | 421.62 | (17.00) | (0.040) |
| 2004 | 530.81 | (16.20) | (0.0305) |
| 2005 | 513.33 | 39.00 | 0.0759 |
| 2006 | 462.59 | 49.00 | 0.105 |

Source: Annual Report, KUKL

Above table shows the miserable condition of operating profit ratio of KUKL. There is negative ratio (i.e. loss) in 2001 (i.e. 0.14) in 2003 is (0.04) in 2004 is (0.030) where there is positive ratio that is also very poor which is 0.102 in 2002, 0.07 in 2005 and 0.105 in 2006. As we know the operating ratio must be more than 40% (i.e. 0.40) for smooth operation but the operating ratio of KUKL is very poor that show it need overall management to improve profitability. Similarly sales should be increased and operating expenses should be decreased.

4.1.4.2 Net Profit Margin/ Ratio (NP ratio)

The Net Profit Margin shows the relationship between net profit and sales. The higher ratio shows the efficiency of the organization. It is calculated as follows:

$$\text{Net Profit} = \frac{\text{NPAT}}{\text{sales}}$$

Table 4.23
NP Ratio of NEA

(NRs. in million)

| Year | Sales | NPAT | Ratio |
|------|----------|-----------|--------|
| 2001 | 5396.70 | (96.00) | (0.01) |
| 2002 | 6856.00 | 185.20 | 0.02 |
| 2003 | 8160.80 | (51.00) | (0.00) |
| 2004 | 9476.20 | (860.70) | (0.09) |
| 2005 | 11012.60 | (1953.70) | (0.17) |
| 2006 | 11814.60 | (1788.90) | (0.15) |

Source: Annual Report, NEA

The NP Margin of above table presents the very poor condition of net profit of NEA. There is negative NP ratio (i.e. loss) in every except FY 2002. The ratio of NP in 2002 is only 0.027 which is not satisfactory because NP ratio should be at least 12% (i.e. 0.12) to the sales. Here NP ratio NEA are (0.017), (0.027), (0.091), (0.177) and (0.15)

in 2001, 2002, 2003, 2004, 2005 and 2006 respectively. This ratio reflects that NEA is suffering from heavy loss.

Table 4.24
NP Ratio of KUKL

(NRs. in million)

| Year | Sales | NPAT | Ratio |
|-------------|--------------|-------------|--------------|
| 2001 | 287.81 | (42.40) | (0.15) |
| 2002 | 382.52 | (25.10) | (0.06) |
| 2003 | 421.62 | (30.30) | (0.07) |
| 2004 | 530.81 | (47.70) | (0.08) |
| 2005 | 513.33 | (4.60) | (0.00) |
| 2006 | 462.59 | (19.20) | (0.04) |

Source: Annual Report, KUKL

Above table shows the NP ratio of KUKL, which is as were as NP ratio of NEA. Its all NP ratio are negative which indicates KUKL is never in profit during the study period of 5 yrs. i.e. from 2001 to 2006. Its NP ratio in 2001 is (0.147), in 2002 (0.065) in 2003 (0.072), in 2004 (0.089) in 2005 (0.009) and in 2006 (0.0415). It shows that KUKL is suffering from fatal and continuous loss.

4.1.4.3 Operating Expenses Ratio (OE Ratio)

This ratio measures relationship between sales and operating expenses. Higher ratio indicates high operating expenses and low profitability. It is calculated as follows:

$$\text{OE Ratio} = \frac{\text{Operating Expenses}}{\text{Sales}}$$

Table 4.25
OE Ratio of NEA

(NRs. in million)

| Year | Sales | OE | Ratio |
|-------------|--------------|-----------|--------------|
| 2001 | 5396.70 | 2082.10 | 0.38 |
| 2002 | 6856.00 | 2324.60 | 0.34 |
| 2003 | 8160.80 | 4576.80 | 0.56 |
| 2004 | 9476.20 | 5886.70 | 0.62 |
| 2005 | 11012.60 | 5408.70 | 0.49 |
| 2006 | 11814.60 | 6726.10 | 0.57 |

Source: Annual Report, NEA

Above table shows the OE Ratio of NEA. Its OE Ratio during 2001, 2002, 2003, 2004, 2005 and 2006 is 0.35, 0.34, 0.56, 0.62, 0.49 and 0.57 respectively. OE Ratio 0.62 (i.e. 62%) during the FY 2004 shows NEA has very high operating expenses which adversely affect the profitability.

Table 4.26
OE Ratio of KUKL

(NRs. in million)

| Year | Sales | OE | Ratio |
|-------------|--------------|-----------|--------------|
| 2001 | 287.81 | 329.30 | 1.14 |
| 2002 | 382.52 | 341.60 | 0.89 |
| 2003 | 421.62 | 438.60 | 1.04 |
| 2004 | 462.59 | 478.80 | 1.03 |
| 2005 | 513.33 | 474.30 | 0.92 |
| 2006 | 530.81 | 481.60 | 1.10 |

Source: Annual Report, KUKL

Above table shows the OE Ratio of KUKL. Its OE Ratio during 2001, 2002, 2003, 2004, 2005 and 2006 is 1.14, 0.89, 1.04, 1.03, 0.92 and 1.1 respectively. High operating ratio shows the high expenses which is up to 114% in KUKL. This is very miserable condition for any organization.

4.1.4.4 Return on Assets (ROA)

It measures the productivity of the assets. It is measured in terms of relationship between net profit and assets. The income figure used in computing this ratio should be operating income. This ratio is calculated by applying the following formula:

Table 4.27
ROA of NEA

(NRs. in million)

| Year | NPAT | Interest | NPAT + Interest | Total Assets | ROA |
|-------------|-------------|-----------------|----------------------------|---------------------|------------|
| 2001 | (96.00) | 1143.30 | 1045.30 | 53145.20 | 1.97% |
| 2002 | 185.20 | 1244.30 | 1429.50 | 60425.20 | 2.36% |
| 2003 | (51.00) | 1188.20 | 1137.20 | 67574.70 | 1.68% |
| 2004 | (860.70) | 1395.50 | 534.80 | 71251.00 | 0.75% |
| 2005 | (1953.70) | 2973.40 | 1019.70 | 73908.00 | 1.38% |
| 2006 | (1788.90) | 3369.20 | 1580.30 | 79568.3 | 1.98% |

Source: Annual Report, NEA

Above calculation table shows the ROA of NEA. Its ROA in 2001, 2002, 2003, 2004, 2005 and 2006 is 1.97, 2.36, 1.68, 0.75, 1.38 and 1.98 percentages respectively. Percentages of ROA are very poor in NEA. A high ROA shows the better profitability of the organization. But the ROA of NEA is very low. Its highest ROA is 2.36% and lowest ROA is just 0.75%. It implies that NEA is earning 2.36% in investment Re 1 asset in maximum and Rs 0.75 in minimum.

Table 4.28
ROA of KUKL

(NRs. in million)

| Year | NPAT | Interest | NPAT + Interest | Total Assets | ROA |
|-------------|-------------|-----------------|------------------------|---------------------|------------|
| 2001 | (42.40) | 13.80 | 28.60 | 3691.20 | (0.77%) |
| 2002 | (25.10) | 57.70 | 32.60 | 4028.30 | 0.81% |
| 2003 | (30.30) | 32.00 | 1.70 | 4193.70 | 0.04% |
| 2004 | (47.70) | 48.10 | 0.40 | 4325.50 | 0.009% |
| 2005 | (4.60) | 52.20 | 47.60 | 4393.40 | 1.08% |
| 2006 | (19.20) | 56.20 | 37.00 | 4543.90 | 0.81% |

Source: Annual Report, KUKL

Above table gives the ROA of KUKL. Due to the regular loss, its ROA is very worse. Its ROA in 2001, 2002, 2003, 2004, 2005 and 2006 is (0.77), 0.81, 0.04, 0.009, 1.08 and 0.81. Its lowest ROA is (0.77%) in 2001. It is due to heavy loss. Its highest ROA is very nominal i.e. 1.08% in 2005. The calculated ROA of KUKL is almost worse and KUKL should generate profit and decrease interest to increase ROA.

4.1.4.5 Return on Shareholders Equity (ROSE)

This Ratio indicates the profitability of the owner's investment. This is the most commonly used ratio for measuring the return on owner's investment and calculated as follows:

$$\text{Return on Shareholders Equity} = \frac{\text{Net Profit after Tax}}{\text{Shareholders Equity}}$$

Table 4.29
ROSE of NEA

(NRs. in million)

| Year | NPAT | Shareholders Equity | ROSE |
|-------------|-------------|--------------------------------|-------------|
| 2001 | (96.00) | 13188.10 | (0.73%) |
| 2002 | (185.20) | 14319.80 | 1.29% |
| 2003 | (51.00) | 15424.60 | (0.33%) |
| 2004 | (860.70) | 16929.00 | (5.08%) |
| 2005 | (1953.70) | 17223.40 | (11.34%) |
| 2006 | (1788.90) | 18534.30 | (9.65%) |

Source: Annual Report, NEA

Return on Shareholders Equity in NEA is very worse. Due to the loss it is always negative. ROSE is positive only during the year of 2000 and it is also very poor. Its ROSE during the study period of 2001, 2002, 2003, 2004, 2005 and 2004 is (0.73%) 1.29, (0.33%), (5.08%), (11.34%) and (9.65%). High loss during the year result high negative ROSE of (11.34%). This position of the organization reveals that price of shareholders insecure. This position is very critical for any organization.

Table 4.30
ROSE of KUKL

(NRs. in million)

| Year | NPAT | Shareholders Equity | ROSE |
|-------------|-------------|--------------------------------|-------------|
| 2001 | (42.40) | 2005.60 | (2.11%) |
| 2002 | (25.10) | 1918.90 | (1.31%) |
| 2003 | (30.30) | 1847.50 | (1.64%) |
| 2004 | (47.70) | 1772.20 | (2.69%) |
| 2005 | (4.60) | 1713.90 | (0.27%) |
| 2006 | (19.20) | 1645.00 | (1.17%) |

Source: Annual Report, KUKL

Above calculation shows the very critical condition of ROSE in KUKL. Regular loss causes the negative ROSE which shows the decrease of share price. KUKL is ROSE during the study period is always negative. Its ROSE is (2.11%), 1.31%), (1.64%), (2.69%), (0.27%) and 1.17%) during 2001, 2002, 2003, 2004, 2005 and 2006 respectively. This situation is critical and serious for any organization. Overall management of KUKL is responsible for this situation which is needed to be reformed.

4.2 Statistical Tools

Beside financial tools, statistical tools are used to measure the relation of different variables. Under statistical tools Mean, Standard Deviation (SD) Correlation, Coefficient of Variance (CV), Probable Error (PE) and Regression Analysis between selected variables is used which are as follows.

4.2.1 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between sales and Profit After Tax (NPAT) of NEA

Table 4.31
Sales and NPAT of NEA

(NRs. in million)

| Year | Sales (X) | NPAT (Y) | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ 000000 | $(Y - \bar{Y})^2$ 000000 |
|--------------|-----------------|------------------|---------------|---------------|-----------------------------|-----------------------------|
| 2001 | 5396.70 | (96.00) | (3389.45) | 664.85 | 11.49 | 0.442 |
| 2002 | 6856.00 | 185.20 | (1930.15) | 946.05 | 3.37 | 0.895 |
| 2003 | 8160.80 | (51.00) | (625.35) | 709.85 | 0.39 | 0.504 |
| 2004 | 9476.20 | (860.70) | 690.05 | (99.85) | 0.48 | 0.012 |
| 2005 | 11012.60 | (1953.70) | 2226.45 | (1192.85) | 4.96 | 1.43 |
| 2006 | 11814.60 | (1788.90) | 3028.45 | (1028.05) | 9.17 | 1.06 |
| Total | 52716.90 | (4565.10) | | | 30.21 | 4.33 |

$$\bar{X} = 8786.15$$

$$\bar{Y} = -760.85$$

| | |
|---------|---------|
| SD of X | 2243.86 |
| SD of Y | 849.58 |
| Corral. | -0.90 |
| CV of X | 2.5 |
| CV of Y | -11.16 |
| PE | 0.049 |
| Reg. | -2.39 |

The above table shows the Mean, standard Deviation (SD), Coefficient of Variation (CV) of sales (\bar{X}) and NPAT (\bar{Y}) of NEA. Mean sales (\bar{X}) is Rs. 8786.15 million and mean NPAT (\bar{Y}) is Rs. -760.85 million. Standard Deviation of Sales is Rs 2243.86 million and SD of NPAT is RS 849.58 million. Similarly, CV of sales is 2.55 percent and CV of NPAT is -11.16 percent. CV of NPAT seems negative which shows its variability is less than the sales. A distribution with greater CV is said to be less consistent or more variable.

To analyze the relationship between Sales and NPAT, another statistical tool i.e. correlation of coefficient is also used. Karl Pearson's coefficient of Correlation is used to find the relationship between sales and NPAT. Coefficient of correlating is denoted by 'r'.

Correlation between sales (X) and NPAT (Y) is (0.90) which shows the negative correlation of these two variables. It gives the result that NPAT doesn't change in the same direction as the change of sales.

To test the significance of 'r' we take help of probable Error (PE). If the 'r' is greater than 6PE, the value of 'r' is significant.

From the above table, we've PE=0.049

Again,

$$6PE= 0.2963$$

Our calculation shows that $t < 6PE$ (i.e. $-0.905 < 0.2963$) which implies that the value of r is insignificant and NPAT goes in the same direction of sales.

4.2.2 Regression analysis between Sales and NPAT

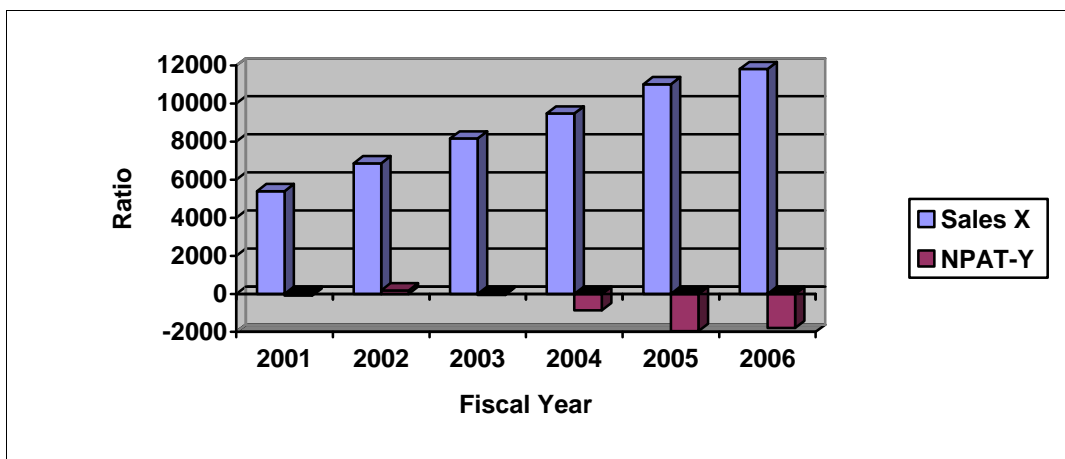
A regression line can be fitted to show the relation between Sales and NPAT. In this analysis, Sales is taken as basic Variable (X) and NPAT is taken as depended variable (Y).

The line of best fit is

$$X = 6956.77 + (2.39) Y$$

This equation shows that the value of NPAT (i.e. Y) changes by 2.39 units when the value sales (i.e. X) change by one unit.

Figure No. 4.1
Bar Diagram of Sales and NPAT of NEA



The above diagram gives the clear picture of Sales and NPAT during the study period of 2001 to 2006. On the basis of diagram we can say that a sale is in increasing trend but NPAT is fluctuating and decreasing too.

4.2.3 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between sales and Total Assets of NEA.

Table 4.32
Sales and Total Assets of NEA

(NRs. in million)

| Year | Sales (X) | T. Assets (Y) | X- \bar{X} | Y- \bar{Y} | (X- \bar{X}) ² 000000 | (Y- \bar{Y}) ² 000000 |
|--------------|-----------------|------------------|--------------|-------------------|--|--|
| 2001 | 5396.70 | 53145.20 | (3389.45) | (14500.20) | 11.49 | 210.26 |
| 2002 | 6856.00 | 60425.20 | (1930.15) | (72220.20) | 3.37 | 52.13 |
| 2003 | 8160.80 | 67574.70 | (625.35) | (70.70) | 0.39 | 49.99 |
| 2004 | 9476.20 | 71251.00 | 690.05 | 3605.60 | 0.48 | 13.00 |
| 2005 | 11012.60 | 73908.00 | 2226.45 | 6262.60 | 4.96 | 39.22 |
| 2006 | 11814.60 | 79568.30 | 3028.45 | (1028.0511922.90) | 9.17 | 142.16 |
| Total | 52716.90 | 405872.40 | | | 30.21 | 456.77 |

| | |
|-----------|---------|
| \bar{X} | 8786.15 |
| \bar{Y} | 67645.4 |
| SD of X | 2243.86 |
| SD of Y | 8725.14 |
| Corral. | 0.025 |
| CV of X | 12.89 |
| CV of Y | 0.98 |
| PE | 0.0083 |
| Reg. | 0.25 |

Calculation of above table shows the Mean, Standard Deviation and Coefficient of Variation of Sales (X) and total assets (Y). Mean Sales and total Assets (TA) is Rs. 8786.15 million and Rs. 67645.4 million respectively. SD of Sales is Rs. 2243.86 million. Similarly CV of Sales is 2.55 percent and CV of total Assets is 12.89. A distribution with greater CV is said to be more heterogeneous or more variable than

other. Here CV of Total Assets is higher than the CV of sales. It shows total assets is more variable than the sales.

Correlation between sales and Total Assets is 0.98 implies that there is highly positive correlation. We also have that $6 PE = 0.05$ which is less than 'r' and it proves the significance of 'r'.

4.2.4 Regression Analysis between Sales and Total Assets

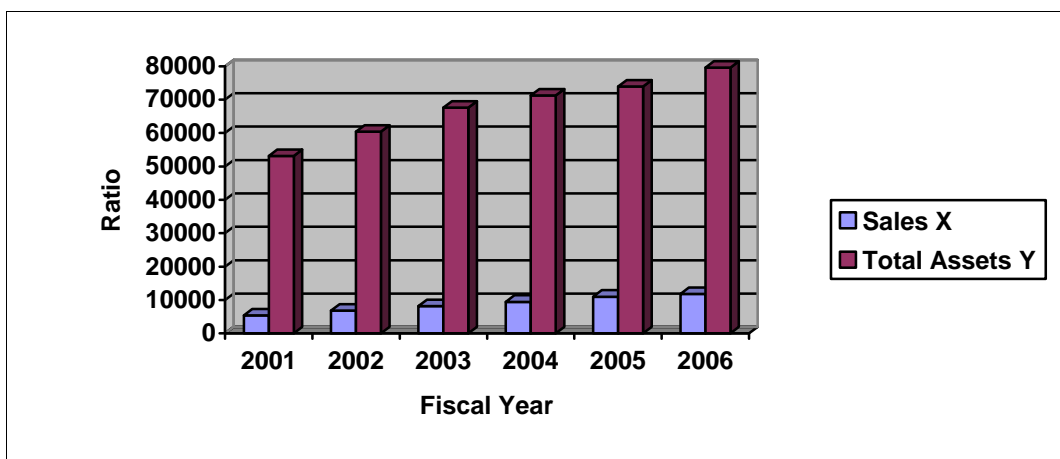
A regression line can be fitted to shows the relationship between sales and total assets. In the analysis, Sales is taken as basic variable (X) and total assets is taken as depended variable (Y).

The line of best fit is,

$$X = -8344.17 + 0.25 Y$$

The regression line shows the relation between Sales and Total Assets. It reflects that change of sales by one unit cause the change in total assets by 0.25 unit.

Figure No. 4.2
Bar Diagram of Sales and Total Assets



The above diagram gives the position of sales and total assets of NEA during five years study period. Sales seem very lower in comparison of total assets but it verifies the calculation of co-relation that both variables are increasing in same direction.

4.2.5 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between Total Debt and Shareholders Equity of NEA.

Table 4.33

Total Debt and Shareholders' Equity of NEA

(NRs. in million)

| Year | Total Debt (X) | Shareholder Equity (Y) | X- \bar{X} | Y- \bar{Y} | (X- \bar{X}) ² 000000 | (Y- \bar{Y}) ² 000000 |
|--------------|------------------|------------------------|--------------|--------------|--|--|
| 2001 | 28173.80 | 13188.10 | (15086.55) | (2748.45) | 227.60 | 7.55 |
| 2002 | 34644.20 | 14319.90 | (8616.15) | (1616.65) | 74.24 | 2.61 |
| 2003 | 41778.40 | 15424.60 | (1481.95) | (511.95) | 2.19 | 0.26 |
| 2004 | 46178.40 | 16929.00 | 2918.05 | 992.45 | 8.52 | 0.98 |
| 2005 | 51230.80 | 17223.40 | 7970.45 | 1286.85 | 63.53 | 1.66 |
| 2006 | 57556.50 | 18534.30 | 14296.15 | 2597.75 | 204.38 | 6.75 |
| Total | 259562.10 | 95619.30 | | | 580.46 | 19.82 |

| | |
|-----------|----------|
| \bar{X} | 43260.35 |
| \bar{Y} | 15936.55 |
| SD Of X | 9830 |
| SD of Y | 1820 |
| Corral. | 22.72 |
| CV of X | 11.42 |
| CV of Y | 0.99 |
| PE | 0.10 |
| Reg. | 5.37 |

The above table gives the various statistical data. The table gives Mean, Standard Deviation (SD), Co-efficient of Variance (CV) of Total Debt and Shareholders Equity.

Mean of total debt (\bar{X}) is Rs. 4326.35 million and Mean of Shareholders Equity (\bar{Y}) is Rs. 15936.65 million. Standard Deviation (SD) of total Debt is Rs. 9830 million and SD of Shareholders Equity is Rs. 1820 million. Similarly, CV of Total Debt is 22.72 percent and CV of Shareholders' Equity is 11.42 percent.

A distribution with greater CV is said to be more heterogeneous or more variable. CV of total Debt is higher so it is less consistent than Shareholders' equity.

To analyze relationship between these two variables, Correlation Coefficient is calculated which is 0.9924. It implies that there is highly positive correlation between Total Debt and Shareholders' Equity.

To test the significance of 'r' we have to compute PE and if $r > 6PE$ value of 'r' is significant.

We have $PE = 0.0041$ and $6PE = 0.0249$. Since $r > 6PE$ (i.e. $0.9924 > 0.0249$) the value of r is significant. So, we can say that trend of Shareholders Equity goes in the same direction of Total Debt.

4.2.6 Regression analysis between Total Debt and Shareholders Equity

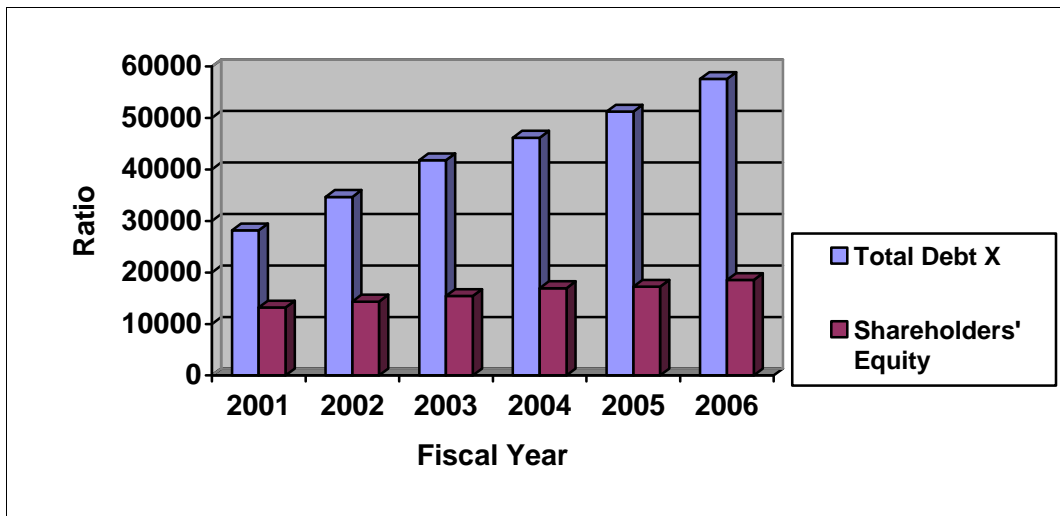
The following result has been obtained by using regression analysis between Total Debt (X) and Shareholders Equity (Y).

$$X = -42331.67 + 5.37Y$$

The above regression line shows that the change of total debt of one unit brings the change in total shareholder equity by 5.37 units.

Figure No. 4.3

Bar Diagram of Total Debt and Shareholder Equity



Condition Total Debt and Shareholders Equity can be seen from above diagram where Total debt is very high and shareholders equity is low.

Regular increment of Total Debt can be seen but position of Shareholders Equity is with nominal increment. It reduced the profitability due to high interest expenses. Anyway the diagram proves the calculation of co-relation is significant because both variable are going in same direction.

4.2.7 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between Current Assets and Current Liabilities of NEA.

Table 4.34
Current Assets and Current Liabilities of NEA

(NRs. in million)

| Year | Current Assets (X) | Current Liabilities (Y) | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ 000000 | $(Y - \bar{Y})^2$ 000000 |
|--------------|--------------------|-------------------------|---------------|---------------|-----------------------------|-----------------------------|
| 2001 | 5053.20 | 4786.30 | (1688.82) | (1415.11) | 2.85 | 2.003 |
| 2002 | 5761.20 | 5477.20 | (980.82) | (724.22) | 0.96 | 0.524 |
| 2003 | 6313.60 | 6113.80 | (428.42) | (87.62) | 0.18 | 0.008 |
| 2004 | 7322.00 | 5948.10 | 579.98 | (253.32) | 0.34 | 0.064 |
| 2005 | 7690.50 | 6639.30 | 948.48 | 437.88 | 0.90 | 0.191 |
| 2006 | 8311.60 | 8243.80 | 1569.58 | 2042.38 | 2.46 | 4.171 |
| Total | 40452.10 | 37208.50 | | | 7.69 | 6.961 |

| | |
|-----------|---------|
| \bar{X} | 6742.02 |
| \bar{Y} | 6201.42 |
| SD Of X | 1132.6 |
| SD of Y | 1077.19 |
| Corral. | 19.67 |
| CV of X | 17.36 |
| CV of Y | 0.90 |
| PE | 0.50 |
| Reg. | 0.94 |

NEA's Mean, Current Assets (CA) is Rs. 6742.01 million and Mean Current Liabilities (CL) is Rs. 6201.41 million. Similarly above table shows the Standard Deviation of CA and CL which is Rs. 1326.4 million and Rs. 1077.11 million respectively. Coefficient of Variation (CV) of CA is 19.67% and CV of CL is 17.36% shows that CA of NEA is more variable than CL because a distribution with greater CV is said to be more heterogeneous than other. To analyze relationship between these two variables correlation of coefficient is also calculated which 0.984 is. It shows that there is highly positive correlation between CA and CL.

Since, $r > 6PE$ (i.e. $0.98 > 0.30$) it implies that the values of r is significant. In other words, Current Liabilities goes in the same direction as the current assets go.

4.2.8 Regression Analysis between Current Assets and Current Liability

The following result of the line of best fit is obtained from the regression between CA and CL assuming CA as basic Variable (X) and CL as depended variable (Y).

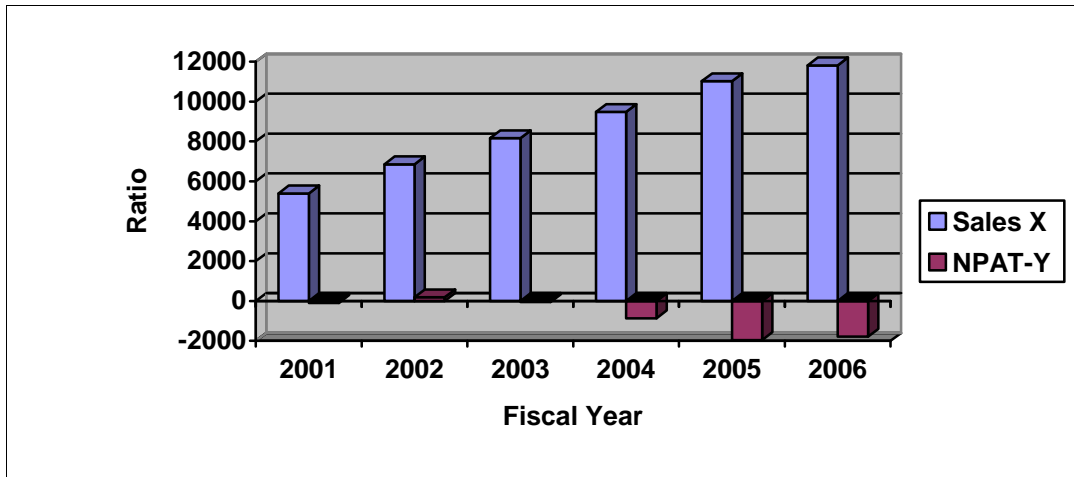
The line of best fit is,

$$X = 852.52 + 0.94Y$$

This line shows that change in current asset by one unit brings the change in current liability by 0.94 units.

Figure No. 4.4

Bar Diagram of Current Assets and Current Liabilities



Current Assets and current liability both are in increasing trend according to diagram presented above. Position of Current Assets is equal to Current Liability which is below the standard. During 2004 position of CA and CL is almost equal.

4.2.9 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between Sales and Net Profit After Tax (NPAT) of KUKL.

Table 4.35
Net Profit and NPAT of KUKL

(NRs. in million)

| Year | Sales (X) | NPAT (Y) | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ 000000 | $(Y - \bar{Y})^2$ 000000 |
|--------------|----------------|-----------------|---------------|---------------|-----------------------------|-----------------------------|
| 2001 | 287.81 | (42.40) | (145.30) | (14.18) | 21113.05 | 201.17 |
| 2002 | 382.52 | (25.10) | (50.59) | 3.11 | 2559.68 | 9.71 |
| 2003 | 421.62 | (30.30) | (11.49) | (2.08) | 132.09 | 4.34 |
| 2004 | 462.59 | (47.70) | 29.47 | (19.48) | 868.88 | 379.59 |
| 2005 | 513.33 | (4.60) | 80.22 | 23.61 | 6434.72 | 557.75 |
| 2006 | 530.81 | (19.20) | 97.69 | 9.02 | 9544.65 | 81.30 |
| Total | 2598.68 | (169.30) | | | 40653.07 | 1233.87 |

| | |
|-----------|---------|
| \bar{X} | 433.11 |
| \bar{Y} | (28.21) |
| SD Of X | 82.31 |
| SD of Y | 14.34 |
| Corral. | 0.58 |
| CV of X | 19.00 |
| CV of Y | (50.82) |
| PE | 0.18 |
| Reg. | 3.34 |

The result calculated above shows the Mean, SD and CV of Sales (X) and NPAT (Y). Mean of sales (\bar{X}) and NPAT (\bar{Y}) is 433.11 million and (28.216) million respectively. SD of sales is 82.31 million and SD of NPAT is 14.34 million CV of sales is 19.00% and CV of NPAT is (50.82%). It shows that NPAT of KUKL is more consistent than sales value due to its smaller CV. Correlation between sales and NPAT is 0.5828 which implies that there is positive correlation between these two variables. It implies than NPAT change to the same direction as the change in Sales. Now, the significant of 'r' is tested with the help of PE.

We've PE= 0.181808

Again,

$$\begin{aligned} 6PE &= 6 \times 0.181808 \\ &= 1.090 \end{aligned}$$

Here $r < 6PE$ (i.e. $0.5828 < 1.090$) which give the result that r is in significant change in NPAT do not go to the same direction as the change of sales. In other words, NPAT is not depended upon sales only there are other variables which affect the organization NPAT.

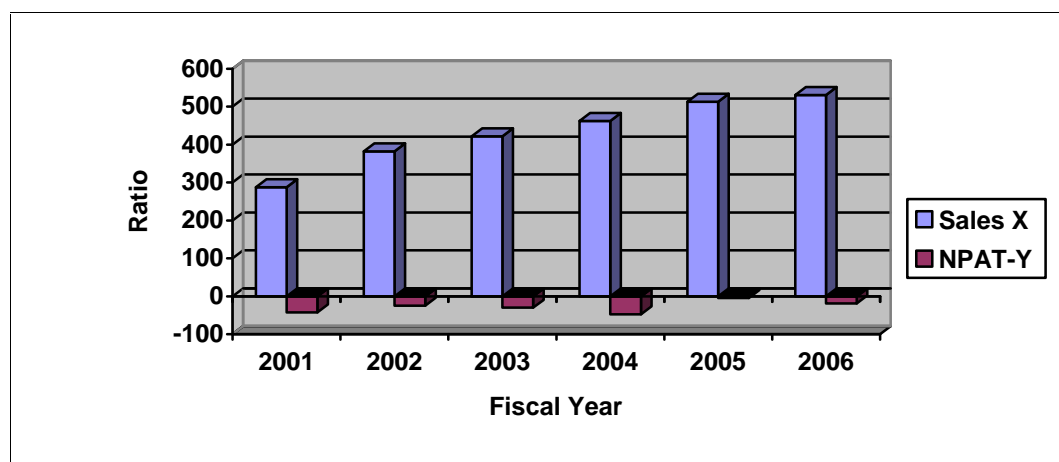
4.2.10 Regression between Sales and NPAT

A regression line can be fitted to show the relation between Sales and NPAT. In this analysis Sales is taken as basic variables (X) and NPAT is taken a depended variable (Y). The line of best fit is

$$X = 527.51 + 3.34Y$$

The line reflects the relationship between Sales and NPAT. Change of one unit in sales brings the change of 3.34 units in NPAT.

Figure No. 4.5
Bar Diagram of Sales and NPAT



Above diagram reveals the condition of Sales and NPAT of KUKL which is very miserable. Though sales is in increasing condition at NPAT is negative it is due to other factor such as high operating expenses, poor utilization of resources etc. This diagram also verifies the calculation of co-relation that there is negative relation between these two variables.

4.2.11 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between Sales and Total Assets of KUKL

Table 4.36
Sales and Total Assets of KUKL

(NRs. in million)

| Year | Sales (X) | TA (Y) | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ 000000 | $(Y - \bar{Y})^2$ 000000 |
|--------------|----------------|-----------------|---------------|---------------|-----------------------------|-----------------------------|
| 2001 | 287.81 | 3691.20 | (145.30) | (504.80) | 2.11 | 25.48 |
| 2002 | 382.52 | 4028.30 | (50.59) | (167.70) | 0.25 | 2.812 |
| 2003 | 421.62 | 4193.70 | (11.49) | (2.30) | 0.013 | 0.01 |
| 2004 | 462.59 | 4325.50 | 29.48 | 129.50 | 0.089 | 1.68 |
| 2005 | 513.33 | 4393.40 | 80.21 | 197.40 | 0.64 | 3.89 |
| 2006 | 530.81 | 4543.90 | 97.69 | 347.90 | 0.95 | 12.10 |
| Total | 2598.68 | 25176.00 | | | 4.07 | 45.97 |

| | |
|-----------|--------|
| \bar{X} | 433.11 |
| \bar{Y} | 4196 |
| SD Of X | 82.31 |
| SD of Y | 276.8 |
| Corral. | 0.99 |
| CV of X | 82.31 |
| CV of Y | 6.59 |
| PE | 0.0048 |
| Reg. | 0.29 |

Above calculation shows the Mean, SD and CV of Sales and Total Assets of KUKL sales is assumed as X and Total Assets is Y. Mean of Sales is Rs.433.11 million and mean of total assets is Rs. 4196 million. SD of Sales and Total Assets is Rs 82.31 million and Rs. 276.8 million respectively. CV of sales 19% and CV of total assets is 6.59% which shows total assets is more consistent than sales because of its smaller CV because a distribution with greater CV is said to be more variable than other. Correlation between these two variables is 0.9911 which implies that there is positive correlation between sales and Total Assets. The total assets increase in the same direction as the change in sales.

Now, to test the significance of correlation (r) we use PE which is 0.004

Again,

$$\begin{aligned} 6PE &= 6 \times 0.0048 \\ &= 0.029059 \end{aligned}$$

Since $r > 6PE$ i.e. $(0.9911 > 0.02059)$ the value of is significant. So we can conclude that change in the sales and total assets will go in same direction. In other words, increase in sales cause the increase in Total Assets in the same direction and vice versa.

4.2.12 Regression analysis between Sales and Total Asset.

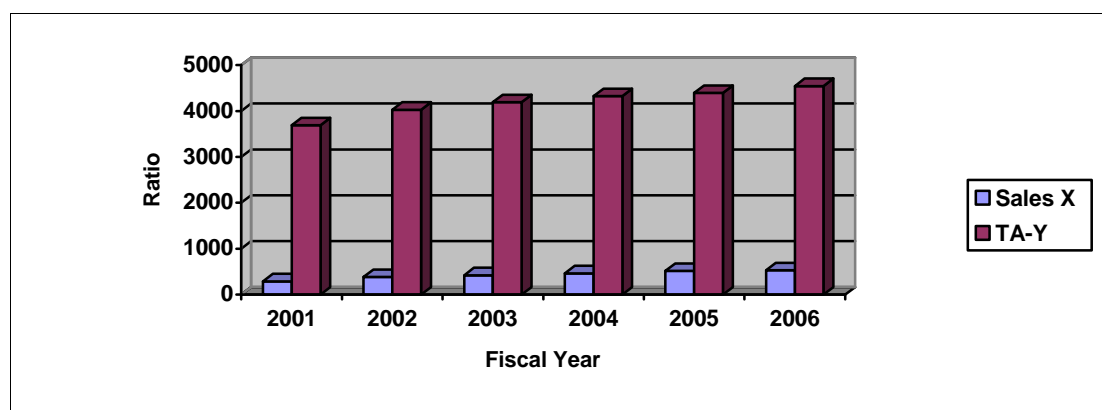
The following result has been obtained by regression analysis of Sales (X) and Total Assets (Y)

$$X = 803.45 + 0.29Y$$

This line of best fit reflects that the change in Sales by one unit causes the change of 0.29 units in Total Assets.

Figure No. 4.6

Bar Diagram of Sales and Total Assets



Relation between Sales and Total Assets can be seen from the above diagram. Total Assets and Sales both are in increasing trend but ratio of increment is nominal. Besides this Total Assets are not properly used to generate sales yet diagram proves that both variables go in same direction.

4.2.13 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between Total Debt and Shareholders Equity of KUKL.

Table 4.37

Total Debt and Shareholders' Equity of KUKL

(NRs. in million)

| Year | Total Debt (X) | S. Equity (Y) | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ 000000 | $(Y - \bar{Y})^2$ 000000 |
|--------------|-----------------|-----------------|---------------|---------------|-----------------------------|-----------------------------|
| 2001 | 1857.70 | 2005.60 | (549.80) | 188.42 | 30.22 | 3.55 |
| 2002 | 2109.50 | 1918.90 | (298.00) | 101.72 | 8.88 | 1.03 |
| 2003 | 2346.20 | 1847.50 | (61.30) | 30.32 | 0.38 | 0.09 |
| 2004 | 2553.20 | 1772.20 | 145.70 | (44.98) | 2.12 | 0.20 |
| 2005 | 2679.50 | 1713.90 | 272.00 | (1.3.28) | 7.39 | 1.06 |
| 2006 | 2898.90 | 1645.00 | 491.40 | (172.18) | 24.15 | 2.96 |
| Total | 14445.00 | 10903.10 | | | 73.15 | 8.91 |

| | |
|-----------|---------|
| \bar{X} | 2407.5 |
| \bar{Y} | 1817.18 |
| SD Of X | 349.17 |
| SD of Y | 121.86 |
| Corral. | -0.99 |
| CV of X | 14.5 |
| CV of Y | 6.706 |
| PE | 0.00062 |
| Reg. | -2.86 |

To know the relationship between total debt and shareholders equity above data are calculated in which total debt is represented by (X) and shareholders equity by (Y). Mean SD and CV of X and Y is 2407.5 million and 1817.18 million 349.17 million and 121.86 million and 14.50 percent and 6.70 percent respectively. Smaller CV of Y i.e. shareholders equity shows that it is more homogeneous of uniform than total debt. In other words total debt is more fluctuating variables than shareholders equity. Correlation coefficient is 0.9988 which implies there is high negative relation between these two variables. To test the significance of correlation coefficient we use PE which is 0.00062.

If r is greater than $6PE$ value of r is significant

Here $r > 6PE$ (i.e. $0.998 > 0.0037$) proves that there is negative correlation between total debt and shareholders equity. These two go on reverse direction of each other.

4.2.14 Regression analysis between Total Debt and Shareholders' equity

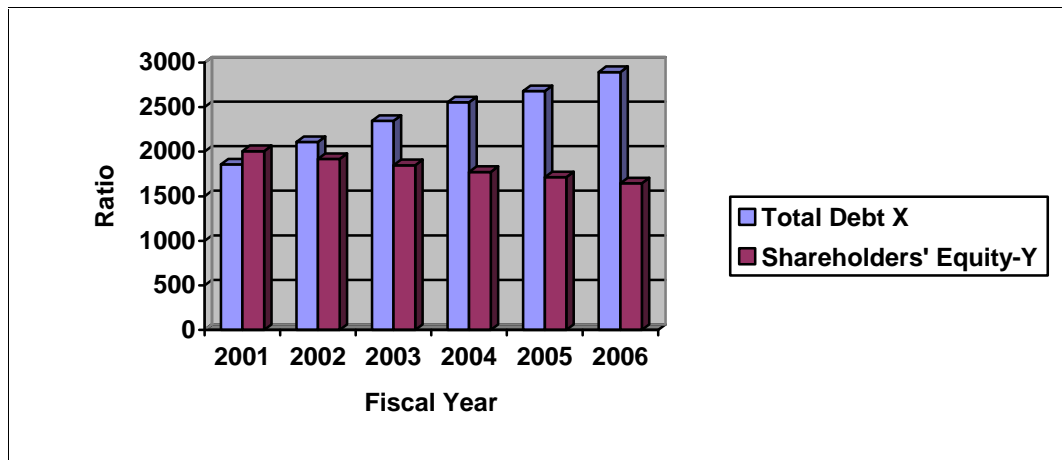
Taking Total Debt as basis variables (X) and Shareholders Equity as depended variables (Y) the following result have been obtained by regression analysis.

$$X = 7608.34 + (2.86) Y$$

This analysis shows shareholders Equity is changed by 2.86 units when total Debt is changed by one unit.

Figure No. 4.7

Bar Diagram of Total Debt and Shareholders Equity



Debt was smaller than equity during the initial stage of study period but condition turned to the opposite at the end of study period. Above diagram presents that the total assets is increasing but Shareholders Equity is decreasing regularly which proves the significance of correlation that there is negative relation between these two variables.

4.2.15 Calculation of Mean, Standard Deviation (SD), Co-efficient Variance (CV), Probable Error (PE), Correlation and Regression Analysis between Current Assets and Current Liability of KUKL.

Table 4.38

Current Assets and Current Liabilities of KUKL

(NRs. in million)

| Year | Current Assets (X) | Current Liability (Y) | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ 000000 | $(Y - \bar{Y})^2$ 000000 |
|--------------|--------------------|-----------------------|---------------|---------------|-----------------------------|-----------------------------|
| 2001 | 863.33 | 208.30 | (206.65) | (365.77) | 427.05 | 1337.85 |
| 2002 | 1001.20 | 458.00 | (68.78) | (116.07) | 47.31 | 134.72 |
| 2003 | 1077.91 | 526.00 | 7.92 | (48.07) | 0.63 | 26.11 |
| 2004 | 1061.31 | 658.70 | (8.67) | 84.63 | 0.75 | 71.63 |
| 2005 | 1141.26 | 735.70 | 71.28 | 161.63 | 50.81 | 261.25 |
| 2006 | 1274.88 | 857.70 | 204.89 | 283.63 | 419.83 | 84.48 |
| Total | 6419.89 | 3444.40 | | | 946.38 | 2633.03 |

Source: Annual Report

| | |
|-----------|----------|
| \bar{X} | 1069.98 |
| \bar{Y} | 574.07 |
| SD Of X | 125.59 |
| SD of Y | 209.49 |
| Corral. | 0.96 |
| CV of X | 11.73 |
| CV of Y | 36.49 |
| PE | 0.295522 |
| Reg. | 0.57 |

Result of above table shows Mean, SD and CV of CA and CL of KUKL. Similarly it shows the correlation between these two variables mean CA is 1069.98 million and Mean CL is 574.06 million and SD of CA and CL is 125.59 million and 209 million respectively. CV of CA is 11.73% and CV of CL is 36.49% which implies that CA is more consistent of less variable than CL because of its lower CV. Relation between CA and CL is measured through correlation coefficient which is 0.963. It shows there is highly positive correlation between CA and CL and change in CL goes in same direction of change in CA. To test the significance of r we use PE. If $r > 6PE$, r is significant

Now $PE = 0.0197$

$6PE$

$= 6 \times 0.0197$

$= 0.1184$

Here

$r > 6PE$ (i.e. $0.9634 > 0.1184$) which give the result of significance of r. It conclusion we can say there is highly positive correlation between CA and CL. In other words, these two variables go in the same direction.

4.2.16 Regression Analysis between Current Assets and Current Liability

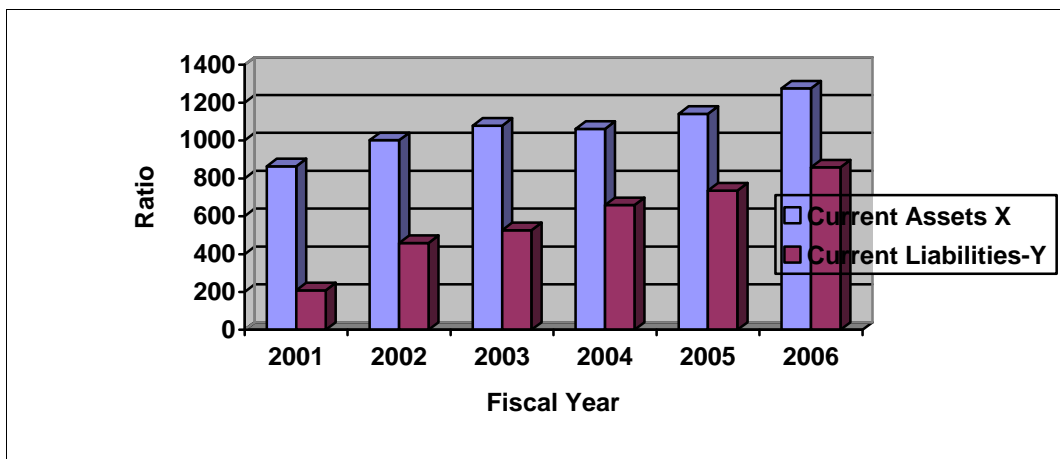
The following result of the line of best fit is obtained from the regression between Current Assets (X) and Current Liability (Y).

$$X=738.38 + 0.57Y$$

This line of best fit shows that the Current Liability is changed by 0.57 units when Current Assets is changed by one unit.

Figure No. 4.8

Bar Diagram of Current Assets and Current Liability



Above diagram reveals the condition of Current Assets and Current Liability of KUKL during the study period of six years i.e. 2001 to 2006. Current Assets and Current liability both are in increasing trend and going in same direction which is already proved by correlation coefficient.

4.3 Major Findings of the Study

The major finding of this study as related in analysis are summarized here under.

4.3.1 Liquidity Ratio

4.3.1.1 Current Ratio

The Current Ratio of NEA is not satisfactory throughout the study period. It is found 1.08:1 in average, which is below the standard. This shows Current Liability is not covered by Current Assets Average Current Ratio of KUKL is 2016:1, which depicts sound liquidity position. KUKL is able to meet the short term through its Current Assets.

4.3.1.2 Quick Ratio

Average Quick Ratio of NEA is 0.53:1, which is not satisfactory. The standard of quick ratio is 1:1 and position of quick ratio of NEA is half of the standard. Quick ratio of KUKL during the study period is sound with average of 1.39:1. It can easily meet the Current Liabilities with quick assets.

4.3.2 Leverage Ratio

4.3.2.1 Debt Equity Ratio (D/E Ratio)

D/E Ratio of NEA is not satisfactory during the study period. Its D/E ratio shows NEA is using large portion of external sources in capital formation, which affects the profitability of organization adversely due to high expenses on interest. Debt-Equity Ratio of KUKL is satisfactory during the study period with an average of 1.34:1.

4.3.2.2 Debt to Total Capital Ratio (DTC Ratio)

DTC Ratio of NEA is satisfactory. The study shows NEA has 69.5% of long-term debt in capital structure. DTC Ratio of KUKL is also satisfactory Average DTC ratio 50.1% shows it has idle capital structure.

4.3.2.3. Interest Coverage Ratio (IC Ratio)

The study shows the IC ratio is not satisfactory. NEA is not able to pay its interest through its gross profit. KUKL has very poor IC Ratio. Its continuous loss and high interest amount IC ratio is badly affected.

4.3.3 Activity/ Turnover/ Efficiency Ratio

4.3.3.1 Inventory Turnover Ratio (IT Ratio)

IT ratio of NEA during the study period is sound. The study shows NEA has good stock management. IT ratio of KUKL is very poor. On the basis of study we can say that stock management is very poor in KUKL.

4.3.3.2 Debtor Turnover Ratio (DT Ratio)

DT ratio of NEA is satisfactory during the study period. But its decreasing trend shows that cash collection period is increasing every year, which is not good for any organization. KUKL has very poor DTC ratio with minimum 0.67 times and maximum 1.12 times during the study period. It shows very worse condition for organization.

4.3.3.3 Average Collection Period (ACP)

NEA does not have good ACP during study period. Its 116.61 days of ACP in maximum shows that NEA can collect its credit sales very hardly. ACP of KUKL very worse with maximum of 544 days and minimum of 326 days. It collects its dues more than one year in average. The organizations are not able to collect its dues efficiently.

4.3.3.4 Fixed Assets Turnover Ratio (FAT Ratio)

FAT ratio of NEA is not good which indicates the organization work inefficiency during the study period. NEA has lack of efficiency in utilizing of total assets in generating sales. Unsatisfactory FAT ration is seen in KUKL. Highly fluctuating FAT ratio with minimal value indicates the organization inefficiency in utilization of fixed assets.

4.3.3.5 Total Assets Turnover Ratio (TAT Ratio)

Tat Ratio of NEA shows the work inefficiency of the organization. But more or less increasing TAT ratio improves condition in management of total asset. KUKL has poor TAT ratio which indicates inefficient utilization of total asset to generate the sales. Organization is not efficient in utilization of total asset.

4.3.3.6 Capital Employed Turnover Ratio (CET Ratio)

As other ratio the CET Ratio of NEA is also not satisfactory during the study period. Lower CET Ratio of organization shows the inefficient utilization of capital employed to generate sales. Similarly, KUKL also has poor CET ratio which indicates the poor profitability of organization due to the poor utilization of capital employed to generate sales

4.3.4 Profitability Ratio

4.3.4.1 Operating Profit Margin Ratio (OP Ratio)

Operating of NEA is poor. Fluctuating trend with decrement, net profit of NEA is affected adversely. NEA has generated poor operating profit. Miserable condition of OP Ratio of KUKL is seen during the study period. KUKL suffered a loss in three years and nominal operating profit in rest three years, which affected net profit badly.

4.3.4.2 Net Profit Ratio (NP Ratio)

Due to the nominal OP Ratio of NEA, NP- Ratio is also affected adversely. Except in FY 2002, NP ratio is negative, which indicates NEA is suffering from continuous loss. NP ratio of KUKL is always negative during the study period which means KUKL is always in loss. Its poor OP ratio and high operating expenses including interest and NP ratio negative.

4.3.4.3 Operating Expenses Ratio (O/E Ratio)

Operating Expenses ratio of NEA is very much fluctuating which is 0.62 in maximum and 0.38 in minimum. This ratio shows the unsatisfactory result. Because operating expenses up to 62% indicates very poor performance of any organization. KUKL has very high OE ratio, which is 1.14 in maximum and 0.29 in minimum. Operating expenses up to 114% is very worse condition.

4.3.4.4 Return on Assets (ROA)

ROA of NEA is poor during the study period. Highest ROA is only 2.36%, which reflects that return from utilization of assets in NEA is very nominal. ROA is low even negative in one year during the study period in KUKL. Poor utilization of asset and low net profit is the causing efficient asset management.

4.3.4.5 Return on Shareholders Equity (ROSE)

Except in FY 2002 all ROSE of NEA are negative, which is very miserable condition. This is the case of low and negative EPS in organization. It reveals that NEA is failed to generate profit to shareholder.

KUKL has the worst ROSE. It has always negative ROSE during the study period. This is critical and serious situation for any organization.

4.3.5 Finding of Statistical Tools

To analyze the relationship between sales and NPAT correlation of coefficient is used. On the basis of study, correlation between sales and NPAT of NEA is positive. Similarly on the basis of coefficient of variation (CV) sales is more consistent than NPAT. Correlation coefficient between sales and total asset seems highly positive, which implies that sales and total assets charge in same direction but on the basis of CV sales is less variables than total assets. Correlation between current asset and current liability is also highly positive which implies that the changing trend of

current asset and current liability is same. On the basis of CV current asset is more variable than current liability.

Similarly correlation between total debt and shareholders equity is also calculated. The correlation between these two variables is 0.99, which is highly positive and have same direction of change. High CV of total debt reflects it is more variable in comparisons of shareholders equity.

Correlation of KUKL is also calculated among those variable, which were taken in NEA. Correlation of coefficient of KUKL between sales and NPAT 0.58 reflect moderate relation and same trend of increase and decrease. Higher CV of sales shows more variable trend of sales than NPAT. Similarly 0.99 value of correlation between sales and total asset represents highly positive correlation between these variables and lower CV of total asset shows the lower variability of PT than sales. Correlation between current asset and current liability is 0.96 in KUKL, which is also highly positive correlation and higher CV of current assets is the evidence having more variable trend than current liability. All list, correlation of total debt and shareholders equity shows the highly negative correlation between these variable with the value of -0.99. This indicates that debt goes in opposite direction of Shareholders Equity and on the basis of CV total debt is more heterogeneous in nature.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The intent of the study is to evaluate the comparative financial position of Public Enterprises (PEs) of Nepal with reference to Nepal Electricity Authority (NEA) and Kathmandu Upatyaka Khanepani Limited (KUKL).

NEA is a leading corporation in power production, transmission and distribution. Under Nepal Electricity Act 2041, it is established on 1st Bhadra 2042 B.S. It was established following the amalgamation of then Electricity Department Nepal, Electricity Corporation and number of boards related to the power sector.

KUKL is established in 2030 B.S. under Development Board Act named as water Supply and Sewerage Board. It was converted into Kathmandu Uptyaka Khanepani Limited (KUKL) from Water Supply and sewerage Board on 15 Falgun 2046.

The history of all these three Public Enterprises is already reflected in the first chapter. In this chapter statement of problem, importance of the study, limitations of the study and organizations of the study are included. Besides these development of public enterprises in Nepal up to Ninth Plan and targets and plans during tenth plan is also included.

Different books, documents, dissertations, financial journals, previous studies are reviewed in the second chapter similarly introduction meaning and use of financial tool is mentioned.

Research methodology is described in the third chapter. Introduction, research design, population and sample, time period covered, sources of data, data analysis tools, research variables are included in this chapter.

The fourth chapter includes the analysis and presentation of data. Liquidity position long term solvency position, efficiency position and profitability position of NEA and KUKL is analyzed using financial tools. Mean value, standard deviation, consistency and variability, correlation and regression between different variables are analyzed and interpreted with the help of statistical tools. Similarly diagram of different variables are also presented.

The final chapter includes the summary, conclusion and recommendations. A brief summary is drawn from previous chapters. On the basis of chapter four, conclusions are drawn and on the basis of conclusions some suggestions are recommended. Besides these, bibliography, copy of financial reports and appendix are also included in last section of the study.

5.2 Conclusion

Based on the major findings it is found that there are various problems in public enterprises in Nepal. These problems are different in nature and importance. On the basis of the research, the following conclusions are drawn.

NEA has poor liquidity position whereas KUKL has satisfactory liquidity position to meet the current obligations.

1. NEA is using large amount of external source in its capital structure due to which interest expenses is high. Capital structure of KUKL seems somehow better than the capital structure of NEA but it does not have ideal debt equity relation.
2. NEA and KUKL are not able to meet their internal expenses through operating profit. Due to high interest expenses net profit of this organization also affected adversely.
3. NEA has satisfactory inventory turnover but KUKL has poor proper stock management is lacking in KUKL.
4. Increasing trend of debt collection period in NEA shows lack of clear policy and action plan for debt collection. The debt collection period in KUKL is very worse.

5. Assets utilization in NEA and KUKL is inefficient. Fixed assets and current assets are not utilized properly due to which overall performance is affected adversely.
6. Use of capital to generate the sales is not satisfactory in NEA and KUKL. Efficient utilization of capital is lacking in these both organizations.
7. NEA is not generating operating profit in satisfactory way. Fluctuation and decreasing trend proves the high operating expenses and system loss. KUKL has almost all negative operating profit which, no doubt, due to poor stock management, inefficient asset utilization and high operating expenses.
8. There is always loss in NEA except one year. Similarly KUKL is always in loss during the study period. This situation is not result of only one factor. It is result of high operating expenses, high system loss, inefficient utilization of assets longer period of debt collection and so forth.
9. Continuous loss caused the decrement of return to shareholders in NEA and KUKL. It is seen that investment is not secure in NEA and KUKL but good return to creditors.

Besides these, other problems faced by these three PEs drawn separately as follows:

NEA and its major problems

- There is low efficiency in utilization of asset.
- It is facing serious problem of outstanding debt collection. Debtor's turnover is slow and average collection period is very high.
- NEA has poor utilization of assets in generation of sales revenue.
- There is no efficient cost control mechanism, which results high operating expense.
- Electricity leakage, theft and wastage are very high, which is major reason reducing the profit earning capacity.
- NEA has high debt composition in capital structure, which adds the burden of interest.

The Major problems of KUKL

- It is failed to maintain periodic performance report systematically.

- KUKL is suffering from high amount of fixed and operating cost.
- KUKL has very high account collection period and lower debtor's turnover period, which is burden for the organization.
- Utilization of asset is inefficient and return on asset and investment almost is negative.
- Shortage of water for rapidly growing population.
- Very old network system in use, which is causing leakage percentage (system loss) very high.
- Poor cost control system.
- HR management.

5.3 Recommendations

Based on the conclusions and finding of the study of financial performance of three PEs, some suggestions have been recommended to improve financial position. It is hoped that these recommendations will prove to be useful to management of the organizations and concerned institutions and individuals as well.

1) Efficient Utilization of Asset

Efficient utilization of asset can generate additional income without addition cost. Therefore especially NEA and KUKL should pay attention to improve the utilization aspect of their assets. This is more important in case of acquisition of asset in future. Asset with higher capacity utilization factor should be selected to improve the earning capacity. Efficient decision making process makes this task easier.

2) Adaptation of cost control system

It is seen that operating cost of NEA and KUKL is very high. Due to this net profit is adversely affected. Increase in price (Serving cost) is not solution to this problem. Increase of sales, collection of debt in time and efficient management of system loss reduce the cost, which should be adopted.

3) SWOT Analysis

All of these PEs lacking in SWOT (Strength, Weakness, Opportunities and Threats) analysis to improve the overall performance these organizations should give attention to SWOT analysis.

4) Preparation of Action Plan

All three PEs should prepare an action plan for overall improvement of organization. Debt collection period is serious and common problems of this organization. Debt (dues/bill) can be collected through different collection measures such as encouragement of lump sum, payment through attractive discount, use of mobile collection, centre to long distance customer etc. In addition, the collection of outstanding bill can be increased by indirect measure like sufficient counter facility, payment through bank and regular monitoring.

5) Improvement in Human resource Management

Human resource is the key resources in any organization. NEA and KUKL should emphasize to appoint efficient, qualified and right human resources. A spiritual, motivated, skillful, honest and delight staff is that asset which leads the organization towards the goal. 'Right person in right time in right job' is the most important asset. Therefore, these organizations should always try to maintain its staff on high spirit by providing.

- Right appointment (Selection and recruitment)
- Motivation
- Training and development
- Promotional opportunities and
- Motivation through different financial and non-financial incentive.

6) Other Suggestions

- Financial position of the organization should be timely evaluated.

- Most of the Nepalese PEs is suffering from unhealthy working condition. It is suggested to create a healthy working environment of mutual trust and co-operation.
- PEs is suffering from direct or indirect government interferences. For the improvement on performance, interferences should be minimized.
- Continuous flow of information among various levels of management and various groups of employees should be established.
- The goal, objective, strategies should be properly communicated to lower level.

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APPENDIX

Current Ratio of NEA

(NRs. in million)

| Year | Current Assets | Current Liabilities | Current Ratio |
|-----------------------------------|----------------|---------------------|---------------|
| 2001 | 5053.20 | 4786.30 | 1.05 |
| 2002 | 5761.10 | 5477.20 | 1.03 |
| 2003 | 6313.60 | 6113.80 | 1.03 |
| 2004 | 7322.00 | 5948.10 | 1.23 |
| 2005 | 7690.50 | 6639.30 | 1.15 |
| 2006 | 8311.60 | 8243.80 | 1.00 |
| Average Current Ratio =1.08 times | | | |

Source: Annual Report, NEA

Current Ratio of KUKL

| Year | Current Assets | Current Liabilities | Current Ratio |
|-----------------------------------|----------------|---------------------|---------------|
| 2001 | 863.3 | 208.30 | 4.14 |
| 2002 | 1001.20 | 458.00 | 2.18 |
| 2003 | 1077.91 | 526.00 | 2.04 |
| 2004 | 1061.31 | 658.70 | 1.61 |
| 2005 | 1141.26 | 735.70 | 1.55 |
| 2006 | 1274.88 | 857.70 | 1.48 |
| Average Current Ratio =2.16 times | | | |

Source: Annual Report, KUJL

IC Ratio of KUKL

(NRs. in million)

| Year | NPBIT | Interest | Ratio |
|------|-------|----------|-------|
| 2001 | 28.60 | 13.80 | 2.07 |
| 2002 | 32.60 | 57.70 | 0.56 |
| 2003 | 1.70 | 32.00 | 0.05 |
| 2004 | 0.40 | 48.10 | 0.01 |
| 2005 | 47.60 | 52.20 | 0.91 |
| 2006 | 37.00 | 56.20 | 0.66 |

Source: Annual Report, KUKL

Sales and NPAT of NEA

(NRs. in million)

| Year | Sales (X) | NPAT (Y) | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ 000000 | $(Y - \bar{Y})^2$ 000000 |
|--------------|-----------------|------------------|---------------|---------------|-----------------------------|-----------------------------|
| 2001 | 5396.70 | (96.00) | (3389.45) | 664.85 | 11.49 | 0.442 |
| 2002 | 6856.00 | 185.20 | (1930.15) | 946.05 | 3.37 | 0.895 |
| 2003 | 8160.80 | (51.00) | (625.35) | 709.85 | 0.39 | 0.504 |
| 2004 | 9476.20 | (860.70) | 690.05 | (99.85) | 0.48 | 0.012 |
| 2005 | 11012.60 | (1953.70) | 2226.45 | (1192.85) | 4.96 | 1.43 |
| 2006 | 11814.60 | (1788.90) | 3028.45 | (1028.05) | 9.17 | 1.06 |
| Total | 52716.90 | (4565.10) | | | 30.21 | 4.33 |

| | |
|-----------|---------|
| \bar{X} | 8786.15 |
| \bar{Y} | -760.85 |
| SD of X | 2243.86 |
| SD of Y | 849.58 |
| Corral. | -0.90 |
| CV of X | 2.5 |
| CV of Y | -11.16 |
| PE | 0.049 |
| Reg. | -2.39 |

Sales and Total Assets of NEA

(NRs. in million)

| Year | Sales (X) | T. Assets (Y) | X-\bar{X} | Y-\bar{Y} | (X-\bar{X})² 000000 | (Y-\bar{Y})² 000000 |
|--------------|----------------------|--------------------------|-------------------------------|-------------------------------|--|--|
| 2001 | 5396.70 | 53145.20 | (3389.45) | (14500.20) | 11.49 | 210.26 |
| 2002 | 6856.00 | 60425.20 | (1930.15) | (72220.20) | 3.37 | 52.13 |
| 2003 | 8160.80 | 67574.70 | (625.35) | (70.70) | 0.39 | 49.99 |
| 2004 | 9476.20 | 71251.00 | 690.05 | 3605.60 | 0.48 | 13.00 |
| 2005 | 11012.60 | 73908.00 | 2226.45 | 6262.60 | 4.96 | 39.22 |
| 2006 | 11814.60 | 79568.30 | 3028.45 | (1028.0511922.90) | 9.17 | 142.16 |
| Total | 52716.90 | 405872.40 | | | 30.21 | 456.77 |

| | |
|-----------|---------|
| \bar{X} | 8786.15 |
| \bar{Y} | 67645.4 |
| SD of X | 2243.86 |
| SD of Y | 8725.14 |
| Corral. | 0.025 |
| CV of X | 12.89 |
| CV of Y | 0.98 |
| PE | 0.0083 |
| Reg. | 0.25 |

Total Debt and Shareholders' Equity of NEA

(NRs. in million)

| Year | Total Debt (X) | Shareholder Equity (Y) | X- \bar{X} | Y- \bar{Y} | (X- \bar{X}) ² 000000 | (Y- \bar{Y}) ² 000000 |
|--------------|------------------|------------------------|--------------|--------------|--|--|
| 2001 | 28173.80 | 13188.10 | (15086.55) | (2748.45) | 227.60 | 7.55 |
| 2002 | 34644.20 | 14319.90 | (8616.15) | (1616.65) | 74.24 | 2.61 |
| 2003 | 41778.40 | 15424.60 | (1481.95) | (511.95) | 2.19 | 0.26 |
| 2004 | 46178.40 | 16929.00 | 2918.05 | 992.45 | 8.52 | 0.98 |
| 2005 | 51230.80 | 17223.40 | 7970.45 | 1286.85 | 63.53 | 1.66 |
| 2006 | 57556.50 | 18534.30 | 14296.15 | 2597.75 | 204.38 | 6.75 |
| Total | 259562.10 | 95619.30 | | | 580.46 | 19.82 |

| | |
|-----------|----------|
| \bar{X} | 43260.35 |
| \bar{Y} | 15936.55 |
| SD Of X | 9830 |
| SD of Y | 1820 |
| Corral. | 22.72 |
| CV of X | 11.42 |
| CV of Y | 0.99 |
| PE | 0.10 |
| Reg. | 5.37 |

FORMULA USED FOR THE CALCULATION OF NECESSARY DATA:

i.
$$\text{Current Ratio} = \frac{\text{Current Ratio}}{\text{Current Liability}}$$

ii.
$$\text{Current Ratio} = \frac{\text{Quick Assets}}{\text{Current Liability}}$$

iii.
$$\begin{aligned} \text{Debt Equity Ratio} &= \frac{\text{Long Term Debt}}{\text{Share Holder's Equity}} \\ &= \frac{\text{Term Debt}}{\text{Share Holder's Equity}} \end{aligned}$$

iv.
$$\text{Debt to Total Capital Ratio} = \frac{\text{Long Term Debt}}{\text{Capital Employed}}$$

v.
$$\text{Debt to Capital Ratio} = \frac{\text{Long Term Debt}}{\text{Capital Employed}}$$

OR

$$= \frac{\text{Total Debt}}{\text{Capital Employed} + \text{Current Liability}}$$

vi.
$$\text{Interest Coverage Ratio} = \frac{\text{NPBIT}}{\text{Interest}}$$

vii.
$$\text{Fixed Coverage Ratio} = \frac{\text{Net Profit Before Interest and Tax}}{\text{Fixed Charge}}$$

viii.
$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

OR

$$\text{IT Ratio} = \frac{\text{Net Sales}}{\text{Closing Stock}}$$

ix.
$$\text{DT Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Debtors}}$$

OR

$$= \frac{\text{Sales}}{\text{Closing Stock}}$$

x.
$$\text{ACP} = \frac{\text{Debtors} \times (12 \text{ months}/52 \text{ weeks}/365 \text{ days})}{\text{Credit Sales}}$$

OR

12 months/52 weeks/365 days

Debtors Turnover

OR

$\frac{\text{Debtors}}{\text{Sales/Day}}$

xi. $\text{FAT Ratio} = \frac{\text{Net Sales}}{\text{Net Fixed Asset}}$

xii. $\text{Total Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Total Asset}}$

xiii. $\text{CET Ratio} = \frac{\text{Sales}}{\text{Capital Employed}}$

xiv. $\text{GP Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$

xv. $\text{NP Ratio} = \frac{\text{Net Profit After Tax}}{\text{Net Sales}} \times 100$

xvi. $\text{Operating Ratio} = \frac{\text{Operating Expenses}}{\text{Net Asset}}$

xvii. $\text{ROA} = \frac{\text{NPAT}}{\text{Total Asset}}$

OR

$$= \frac{\text{NPAT} - \text{Pref.Dividend}}{\text{Total Asset}}$$

OR

$$= \frac{\text{NPAT} \Gamma \text{Interest}}{\text{Total Asset}}$$

OR

$$\frac{\text{NPAT} - \text{Pref.Dividend}}{\text{Total Tangible Asset}}$$

xviii. $\text{ROSE} = \frac{\text{Net Profit After Tax}}{\text{Shareholders' Equity}}$

OR

$$= \frac{\text{Net Profit After Tax} \Gamma \text{Interest}}{\text{Shareholders' Equity}}$$