

## **Study of financial forecasting techniques on Corporate Balance Sheet in Indian Context: A model of financial trend analysis**

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### **Abstract**

**Purpose/Aim:** Investigating the uses and forecast analysis of financial forecasting techniques on balance sheet

**Methodology:** Descriptive research design

Non-probability sampling (convenience sampling)

Tools: - T-test (Dependent sample)(Before and After Forecast)

- Trend Analysis (Sales Method)

Sample: Data from Online Financial Sources

Source of Data: Secondary data (Quantitative data)

**Implications:** This study will contribute to the management about the working of financial forecasting on past and how past data can be relevant to predict the future trend about company.

This research will also consider the models of forecasting of financial figure to predict/forecast a figurative model and also check the variances.

**Originality/Uniqueness:** This research is based on the Indian Corporate Houses considering ten companies of listed category of NSE market.

Uniqueness of this research is to evaluate the effectiveness of model under certain constraints

**Keywords:** Balance Sheet, Percentage Method, Trend

### **INTRODUCTION**

Business forecasting is of extreme importance to managers at practically all levels. It is required for top managers to make long-term strategic decisions. Middle management uses sales forecasts to develop their departmental budgets. Every other plan, such as a production plan, purchasing plan, manpower plan, and financial plan, follows from sales forecasting. The course is designed for business professionals, such as a director of forecasting and planning, forecast manager, director of strategic planning, director of marketing, sales manager, advertising manager, CFO, financial officer, controller, treasurer, financial

analyst, production manager, brand/product manager, new product manager, supply chain manager, logistics manager, material management manager, purchasing agent, scheduling manager, and director of information systems.

The goal of this course is to provide a working knowledge of the fundamentals of business forecasting that can be applied in the real world regardless of firm size. This course explains basic forecasting methodology and its practical applications. All aspects of business forecasting are discussed making this course a comprehensive, valuable reference.

What is unique about this course is threefold. First, this course is practically oriented. It will try to avoid theoretical, rigorous, and mathematical discussions. It will directly get into how to use it, when to use it, what it is used for, and what resources are required of it. It will include many practical examples, applications, illustrations, guidelines, measures, checklists, rules of thumb, “tips,” graphs, diagrams, and tables to aid comprehension of the subject.

Secondly, it incorporates the use of computer technology, especially the PC. Actual computer printouts obtained via spreadsheet programs, such as Microsoft Excel, Lotus 1-2-3, Quattro Pro, Spreadsheet-based add-ins (such as Budget Maestro), and popular software packages, such as SPSS, Minitab, and SAS, are displayed and explained.

Thirdly, the course goes much beyond just sales forecasting. It encompasses a wide range of topics of major importance to practical business managers, including economic forecasting, cash flow forecasting, cost prediction, earnings forecasts, bankruptcy prediction, foreign exchange forecasting, interest rate forecasting, and much more.

Management in both private and public organizations and in both manufacturing and service organizations typically operate under conditions of uncertainty or risk. Probably the most important function of business is forecasting. A forecast is a starting point for planning. The objective of forecasting is to reduce risk in decision making. In business, forecasts are the basis for capacity planning, production and inventory planning, manpower planning, planning for sales and market share, financial planning and budgeting, planning for research and development and top management’s strategic planning. Sales forecasts are especially crucial aspects of many financial management activities including budgets, profit planning, capital expenditure analysis, and acquisition and merger analysis. A 2016 survey done by the Hackett Group ([www.thehackettgroup.com](http://www.thehackettgroup.com)) show that forecasting is top priority to many companies. Figure 1.1 presents the percent of companies that consider each area as “strategic” or “critical.”

**FIGURE 1.1  
FORECASTING IS TOP PRIORITY**

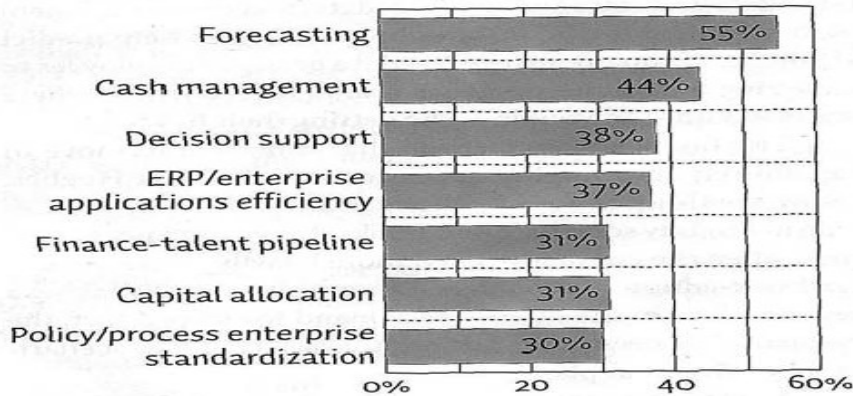
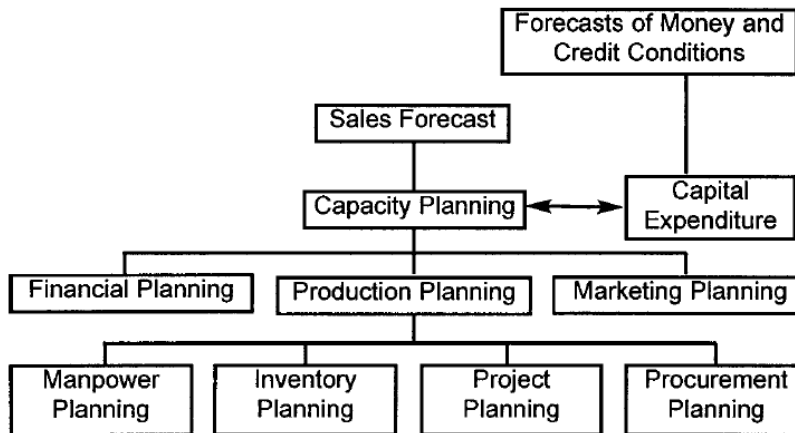


Fig 1.2: illustrates how sales forecasts relate to various managerial functions of business

**FIGURE 1.2  
SALES FORECASTS AND MANAGERIAL FUNCTIONS**



## WHO USES FORECAST?

Forecasts are needed for marketing, production, purchasing, manpower, and financial planning. Further, top management needs forecasts for planning and implementing long-term strategic objectives and planning for capital expenditures. Marketing managers use sales forecasts to: (1) determine optimal sales force allocations, (2) set sales goals, and (3) plan promotions and advertising. Other things such as market share, prices, and trends in new product development are required.

Production planners need forecasts in order to:

- Schedule production activities

## FORECAST VARIABLES AND TIME HORIZON

Forecast Horizon	Time Span	Examples of Things That Must Be Forecasted	Some Typical Units of Forecasts
Long-range	Years	New product lines Old product lines Factory capacities	Dollars Dollars Gallons, hours, pounds, units, or customers per time period
		Capital funds Facility needs	Dollars Space, volume
Medium-range	Months	Product groups Departmental capacities	Units Hours, strokes, pounds, gallons, units, or customers per time period
		Work force Purchased materials Inventories	Workers, hours Units, pounds, gallons Units, dollars
Short-range	Weeks	Specific products Labor-skill classes Machine capacities	Units Workers, hours Units, hours, gallons, strokes, pounds, or customers per time period
		Cash Inventories	Dollars Units, dollars

- Order materials
- Establish inventory levels
- Plan shipments

Production/operations managers need long-range forecasts to make strategic decisions about products, processes, and facilities. They also need short-range forecasts to assist them in making decisions about production issues that span only the next few weeks. Long-range forecasts usually span a year or longer and estimate demand for entire product lines, such as lawn products. Medium-range forecasts usually span several months and group products into product families, such as lawn mowers. Short-range forecasts usually span a few weeks and focus on specific products

Some other areas that need forecasts include material requirements (purchasing and procurement), labor scheduling, equipment purchases, maintenance requirements, and plant capacity planning. Managers are also interested in forecasting costs, prices, and delivery times.

Forecasts of cash flows and the rates of expenses and revenues are needed to maintain corporate liquidity and operating efficiency. In planning for capital investments, predictions about future economic activity are required so that returns or cash inflows accruing from the investment may be estimated.

Forecasts must also be made of money, credit conditions, and interest rates so that the cash needs of the firm may be met at the lowest possible cost. The finance and accounting functions must also forecast interest rates to support the acquisition of new capital, the collection of accounts receivable to help in planning working capital needs, and capital equipment expenditure rates to help balance the flow of funds in the organization. Sound predictions of foreign exchange rates are increasingly important to financial managers of multinational companies (MNCs)

## **FORECASTING METHODS**

There is a wide range of forecasting techniques a company may choose. Additionally, there are basically two approaches to forecasting: qualitative and quantitative.

### **QUALITATIVE APPROACH - FORECASTS BASED ON JUDGMENT AND OPINION.**

- Executive opinions
- Delphi technique
- Sales force polling
- Consumer surveys

### **QUANTITATIVE APPROACH**

#### **a. Forecasts based on historical data**

- Naive methods
- Moving averages
- Exponential smoothing
- Trend analysis
- Decomposition of time series

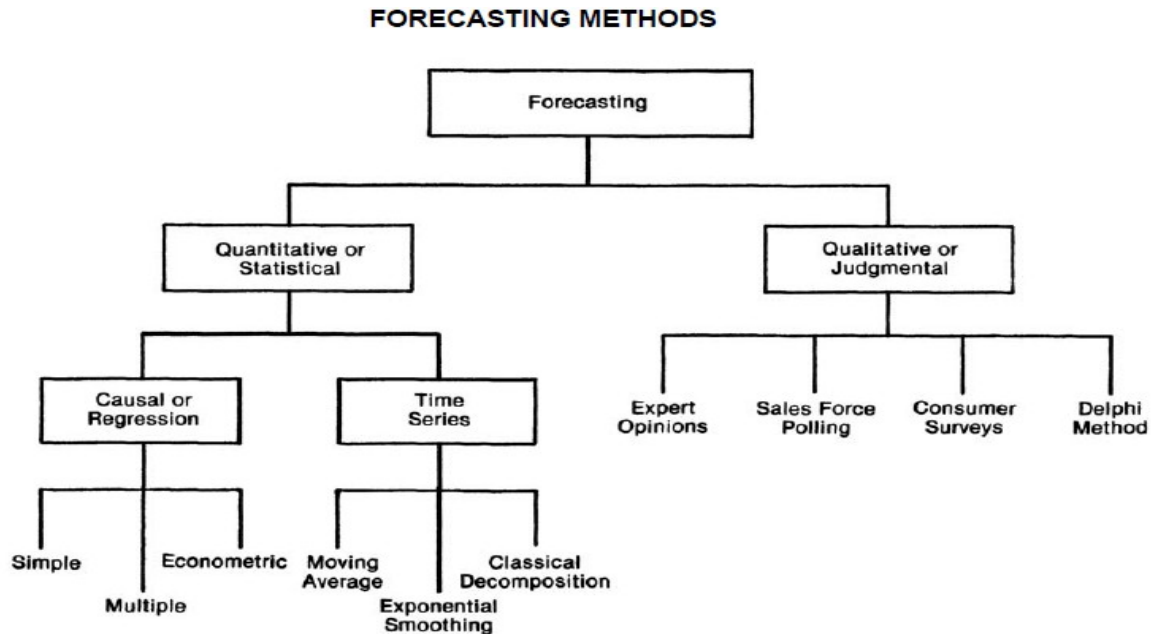
#### **b. Associative (causal) forecasts**

- Simple regression
- Multiple regressions
- Econometric modelling

#### **c. Indirect methods**

- Market surveys

- Input-output analysis
- Barometric forecasting
- Forecasts based on consumer behaviour - Markov approach



In this research paper, the researcher want to explore the financial statement analysis by using quantitative techniques (on sales basis) to predict the future valuation of financial statement and also stating the variance from the actual.

Researcher for doing the valuation has picked Ten Top Listed Companies on the basis of Market Size on 10 th April 2017 to predict the pattern of 2016-17 from the past evaluation.

The sample for this survey is chosen on convenience basis as its pattern is applicable in many industries on sales basis.

## OBJECTIVES & HYPOTHESIS

Following are the objectives of the research

Objectives:

1. Is to evaluate the effectiveness of forecasting method on the basis of sales on financial statement
2. Is to evaluate the difference between actual and forecasting figures

## HYPOTHESIS

Is there any significant difference between forecast balance sheet and actual balance sheet on the basis of % sales method or not.

For this purpose, researcher is using Paired T Test mean method to check the effectiveness of before(predicted) and after(Actual) values on the ten top companies of NSE on the basis of Market Capitalization

## DATA ANALYSIS

In this the forecast balance sheet figures of 2016-17 is calculated on the basis of last three year average performance as it is designed by M.Luther in Microsoft Excel TM

Table1 : Paired Samples Statistics					
Pair 1	Forecasted Balance Sheet 16-17 (In Mn Crores)	444773.1745	Mean	N	Std. Deviation
	Actual Balance Sheet 16-17 (In Mn Crores)	486799.5190	10	824960.84170	260875.52402
TABLE 2 : Paired Samples Correlations					
		N	Correlation	Sig.	
Pair 1	Forecasted Balance Sheet 16-17 (In Mn Crores) & Actual Balance Sheet 16-17 (In Mn Crores)	10	.994	.000	

TABLE 3 : Paired Samples Test									
Mean		Paired Differences					t	df	Sig. (2-tailed)
		Std. Std. Error Mean Deviation		95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	Forecasted Balance Sheet 16-17 (In Mn Crores) – Actual Balance Sheet 16-17 (In Mn Crores)	-42026.34449	117294.79245	37091.87018	-125933.98430	41881.29532	-1.133	9	.286

**The analysis of Paired T Test reveals in following table(s):**

**Table 1** talk about paired sample statistics, which reveals high standard error of mean in actual balance sheet as compared to forecasted ones. Mean value improved in case of ten companies' final statement in actual figures.

**Table 2** talks about paired sample correlation which is quite high as the prediction is based on sales, its prediction figure is very close to actual ones, but yes there may be deviations due to small sample.

**Table 3** talks about paired sample statistics-Student distribution test, which showcase that  $T$  calculated  $>$   $T$  critical, there is significant difference in terms of Balance sheet figure when we compare between actual and forecasted ones.

Table 4 : Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Forecasted Sales	81563.63	8	57843.065	20450.612
	Actual Sales	90238.8388	8	77953.09648	27560.58157

Table 5 :Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Forecasted Sales & Actual Sales	8	.958	.00

Table 6 : Paired Samples Test									
Mean		Paired Differences					t	Df	Sig. (2-tailed)
		Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	Forecasted Sales - Actual Sales	-8675.20675	27935.15390	9876.56838	-32029.57987	14679.16636	-.878	7	.409

**The analysis of Paired T Test reveals in following table(s):**

**Table 4** talks about paired sample statistics, which reveals high standard error of mean in actual sales as compared to forecasted sales on percentage basis. Mean value improved in case of ten companies' sales in actual figures.



**Table 5** talks about paired sample correlation which is quite high as the prediction is based on sales, its prediction figure is very close to actual ones, but yes there may be deviations due to small sample.

**Table 6** talks about paired sample statistics-Student distribution test, which showcase that  $T$  calculated  $> T$  critical, there is significant difference in terms of Sales figure when we compare between actual and forecasted ones.

## CONCLUSION AND RECOMMENDATION

After analyzing the data the following conclusion can be drawn:

- % Sales method is one of the methods which can give high degree positive relationship between actual and forecast ones, but the significant difference remains because of small sample & oscillation effect.
- The method for computing the percentage impact can be increased if number of past years is also inculcated, but nevertheless there is significant relationship (at 0.05% level of significance)
- Effect of sales on financial statement is high as compare to other factors, so the data validity is high due to higher dependency as correlation is high on prediction and actual figures.
- The effectiveness of result depend upon common factor between the data-her in this case researcher have considered the top ten companies of NSE on the basis of market size.
- Scope/Recommendation for the study can be the followings:
  - Number of companies can be added more to increase the validity of data on the basis of low standard error.
  - The valuation of forecasted figures can be better predicted if at a time on Industry is targeted instead of Top Ten Companies on Valuation Basis.
  - Only % sales method is not enough, multiple other trend analysis can be used to check the accuracy of the data.
  - Only one year revelation is not valid on all grounds, multiple year prediction can give more accuracy and variation range on the basis of time factor.
  - Long term trend analysis can also consider short term fluctuation to make it more predictable.

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