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Market-Neutral Strategy for Portfolio Construction: A Study on Stocks Listed with NSE

Rajib Bhattacharya and Shuvashish Roy

Abstract

The increasing volatility in stock, commodities and foreign exchange markets compel investors and scholars to look for strategies which would immunize the investors against the unprecedented movement of the markets. This quest led to discovery of several market-neutral investment strategies of which a very popular one is Pairs Trading. It essentially involves taking opposite positions in two highly correlated assets. This study is on identifying pairs of stocks in the Indian markets which are suitable for pairs trading. The method of cointegration, both in long and short run, have been utilized in this study. Related statistical concepts of autocorrelation and stationarity have also been used in the study.

Keywords: *Pairs Trading, Co Integration, Autocorrelation, Stationarity*

Introduction

Investors across the world employ a wide array of strategies with common objective of maximizing profits and minimizing risks. In recent times large institutional investors, hedge funds etc have focused largely on quantitative and algorithmic trading and they have come up with increasingly complex strategies with varied levels of success. In early 1980s a quantitative research group called Nunzio Tartaglias quantitative technique using group within Morgan Stanley came up with a market neutral strategy called pairs trading strategy. Pairs trading as a strategy is popular among individual as well as institutional investors. Nobel laureates Myron Scholes and Robert C. Merton were some of its well known practitioners.

Pairs trading exploits market inefficiencies. An investor identifies two assets such as both of them carry same amount of inherent risk due to having same characteristics or due to being in same industry etc. By employing statistical tools like correlation, cointegration etc, it is verified whether they have a history of moving together i.e. generating similar returns in long run. Thus any deviation in their returns is a short term anomaly and will be rectified in the long run. Thus trading position is opened when prices of two assets diverge beyond a threshold point, to take advantage of relative mispricing by going long on underperforming

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asset and short selling the relative outperformer. Trading position is closed when the prices of the two assets start to converge again by reversing the previous transaction and generating arbitrage profit. Market frictions such transaction costs, financing costs, taxes etc can erode the profit generated. Pairs trading is thus a kind of arbitrage strategy but not a pure arbitrage as it has some inherent risks like for example due to inefficiencies of the market, divergence of price of two assets generating similar returns in the past may widen instead of converging in the long run, or counterparty for trade is unavailable etc. Thus it can be inferred that pairs trading is a kind of statistical arbitrage as it uses different statistical tools to form an asset pair and generating signals for opening and closing trade. Pairs trading can also be classified as market neutral as it has exposure to market risk on both long and short positions. By having simultaneous exposure on both long and short positions the upside and downside risk of movement of market in any one direction is eliminated. Thus the returns have no correlation with benchmark index and it behaves like a beta-zero portfolio or in other words systematic risks are eliminated substantially.

There are three main methods used in pairs trading:

1. Distance method :- Under distance method, the co-movement of a pair is measured by distance or the sum of square of distance between two normalised price series;
2. Cointegration method :- Under cointegration method, two integrated non-stationary stock price series are combined to form a stationary portfolio time series;
3. Stochastic spread method :- The stochastic spread method is based on mean reversion of spread in a continuous time setting. Here spread means difference between prices of two stocks

Pairs trading is an almost four decades old strategy which has remained popular till now due to its being relatively easier to understand and execute It does not require frequent intra-day trading thus allowing automation. It can be used by individuals and institutional investors having widely different investment styles.

Objectives of the Study

The objectives of this study were three-fold:

Firstly, the sectors in the Indian economy had to be identified with the highest returns with more weight on recent returns

Secondly, the companies in each such identified sector had to be identified with positive returns on year-to-date, half-year-to-date, quarter-to-date and month-to-date basis.

Thirdly, pairs suitable for pairs trading had to be identified.

The third objective was the main objective for the study and the first two were the ancillary objectives.

Suvey of Literarture

Modern Portfolio Theory pioneered by Harry Markowitz in his paper "Portfolio Selection" in 1952 provides the framework for portfolio selection by an investor based on his expected returns and risk appetite through mean-variance analysis. But this model encountered some

problems afterwards. Portfolio diversification became a problem because most assets in a market or most markets for that matter became highly correlated in the long run and calculations for portfolio constructed with more than three assets became highly complex and tedious. Thus hedge funds and other large financial institutions with high risk appetite were looking for different strategies for arbitrage and a quantitative technique using group of Morgan Stanley came up with the concept of pairs trading in early 1980s where they formed portfolios with highly correlated assets as opposed to Markowitz model which suggested that portfolio should be diversified i,e constructed with assets that had negative correlation.

Survey of literature revealed that cointegration method for pairs trading became increasingly popular method of pairs trading in the last decade. Cointegration method was applied to a wide variety of assets like commodity, currency, equity, exchange traded funds etc. Jose Balarezo (2010) in his thesis used cointegration method in combination with modern portfolio theory to build a portfolio with Exchange Traded Funds (ETF) of USA and fifteen other countries to form an internationally diversified portfolio from the point of view of an individual investor situated in USA The performance of this portfolio was compared against the benchmark which was a portfolio constructed based on modern portfolio theory. Thirty nine pairs of portfolios were created and tested. For thirty six pairs, the portfolio created with cointegration method outperformed the portfolios created by only modern portfolio method. Dunis & Shone (2011) in their paper examined the possibility of optimisation of currency portfolio using cointegration method. Their benchmark was EUR/USD for portfolios constructed using USD & EUR and GBP/USD for sterling portfolios. They formed major currency pair tracking portfolio mimicking index tracking equity portfolios. They then compared out-of-sample performances of these portfolios to simple benchmark techniques of optimisation. The results showed that cointegrted portfolios showed lower volatility than the benchmark and thus offered better risk adjusted return in the long run. Bansal & Kiku (2011) in their paper compared optimal asset allocation based on the error-correction vector autoregression (EC-VAR) speci?cation with that of traditional VAR. The EC-VAR model which incorporated cointegration for constructing portfolio was able to outperform traditional VAR based portfolio in midterm to long term range. Caldeira & Moura (2013) in their research used data of closing prices of fifty stocks with largest weights in the Ibovespa index from Sao Paulo Stock Exchange in the beginning of each trading period of four months duration. These were selected as they were highly liquid and so transaction cost was low. As constituents of the index changed every four months the stocks in the sample was also changed and the data was adjusted for dividends and stock splits. Stocks from both same and different sectors were used to form pairs using cointegration method. From all possible pairs, twenty with highest Sharpe ratio was selected and traded for four months. The results show that pairs selected through cointegration had a higher Sharpe ratio than the benchmark and hence a higher risk adjusted performance and also relatively low levels of volatility and no signi?cant correlation to Ibovespa, con?rming its market neutrality. Do & Faff (2016) in their paper used a relative arbitrage strategy involving cointegration on empirical data of US equity market. Over the sample period, the performance of relative value arbitrage was profitable among pairs of close economic substitutes and for pairs which were not close economic substitute, it converged towards contrarian trading of individual stocks. Harlacher (2016) in his dissertation, analysed an algorithmic strategies based on cointegrated pairs of assets which were stocks of

S&P 500 and found they had only a marginal correlation with the market in terms of returns. In addition they yielded higher average returns than the benchmark and lower volatility. Lin selected pairs based on cointegration on securities listed with NYSE and were ranked based on their performance during formative period. From them top five pairs were selected to form a portfolio with weightage changing over time i.e. dynamic allocation. The performance of the portfolio was measured against a benchmark which was a portfolio with even weightage and baseline t-bill. They were able to beat portfolio with even weightage and stay competitive with 3 month t-bill baseline. On the other hand Bolgun et al (2009) in their paper used a dynamic pairs trading model based on distance method to construct a portfolio from stocks of companies included in ISE-30. It was not sector specific study and the constituents of was subject to change every quarter. The stocks which were part of the index at the beginning of the study were tracked and adjusted for corporate action and VAR analysis was carried out to determine risk. The results showed the benchmark underperformed against pairs portfolio both in terms of return and volatility. The pairs trading strategy was most potent when the market was volatile and did not show any clear trend. More favourable results were obtained with tighter constrains but profits were eroded due to trade restrictions and commissions but performance analysis clearly showed that pairs trading strategy yielded excess returns and less volatility than the market portfolio. Habibi & Pakizeh (2017) in their paper carried out an empirical analysis of pairs trading strategy across different asset classes which included stocks of Tehran Stock Exchange, S&P 500 and also commodities. They used both distance method and cointegration methods of pairs trading and compared the results. The results showed distance method yielded highest average returns and portfolio constructed using distance method had the highest Sharpe Ratio i,e best risk adjusted returns. Thus they concluded distance method was more effective for pairs trading involving different asset classes.

In most of the research literature surveyed, it was found that majority of them had access to huge amount of data related to prices of both equity and non equity assets. They used dynamic asset allocation for the portfolio that involved complex calculations and had long investment horizons. Thus this method is suitable for investors with long investment horizon having access to huge amount of data and specialised software with inclination towards low-risk moderate gains.

Methodology for the Study

Data Collection

The data used in the study was entirely secondary in nature. The data was collected from Ace Equity © data product. Data pertaining to the financial year ended 2018-19 were taken for a cross sectional study.

Research Methods

The weighted average of month-to-date, quarter-to-date, half year-to-date and year-to-date returns for the financial year 2018-19 of different sectors of Indian economy have been computed with shorter time periods being accorded higher weights and on the basis of that, the sectors have been ranked. Stocks listed with NSE have been considered for the study.

The top five sectors were selected. In each sectors only those companies were selected which posted positive returns for month-to-date, quarter-to-date, half year-to-date and year-to-date

periods.

The daily adjusted closing prices of the selected stocks were checked for stationarity using the Augmented Dickey Fuller Test at 5% level of significance to filter out those stocks whose prices were non-stationary.

The hypotheses framed were:

H0: There price data is non-stationary

H1: The price data is stationary

In each sector all possible pairs were tested for long-term cointegration by subjecting them to Johansen Test at 1% level of significance.

The hypotheses framed were:

H0: There no co-integration between the pair of price data

H1: There co-integration between the pair of price data

If long term cointegration was not found in any pair, the pairs were subjected to Vector Auto Regression (VAR) for short-term cointegration.

The appropriate lags were selected by applying four criteria i.e. Akaike Information Criteria, Hannan-Quinn Criteria, Schwarz Crietra and Final Prediction Error to identify the minimum lag. In case of there were different minimum lags suggested by the four criteria, all the different lags were used to frame the equations for VAR.

For the two regression equations for each pair, the equation with higher adjusted R2 was selected and the residuals were subjected to Box-Ljung portmanteau test for autocorrelation at 5% level of significance. If the residuals were found to be autocorrelated, the test failed and the pair was found suitable for short-term cointegration.

The hypotheses framed were:

H0: There no autocorrelation in the residuals

H1: There is autocorrelation in the residuals

Data Presentation and Analysis

Table 1: Month-to-Date, Quarter-to-Date, Half Year-to-Date and Year-to-Date for the Year 31/03/2019

Weights	*0.4*	*0.3*	*0.2*	*0.1*	
Sectors	RETMTD	RETQTD	RETHTD	RETYTD	WTRET
Miscellanreous	-66.58%	-64.04%	-64.04%	-64.04%	-0.65056
Agri	-26.15%	-31.99%	-31.99%	-31.99%	-0.29654
Alcohol	-4.54%	-7.95%	-7.95%	-7.95%	-0.06586
Automobile & Ancillaries	-29.40%	-32.17%	-32.17%	-32.17%	-0.31062
Aviation	-5.93%	-8.51%	-8.51%	-8.51%	-0.07478

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Weights	*0.4*	*0.3*	*0.2*	*0.1*	
Banks	-1.27%	2.24%	2.24%	2.24%	0.00836
Capital Goods	-23.82%	-23.38%	-23.38%	-23.38%	-0.23556
Chemicals	7.51%	5.31%	5.31%	5.31%	0.0619
Construction Materials	-14.67%	-17.31%	-17.31%	-17.31%	-0.16254
Consumer Durables	3.90%	-2.68%	-2.68%	-2.68%	-0.00048
Containers & Packaging	-42.70%	-47.92%	-47.92%	-47.92%	-0.45832
Diamond & Jewellery	1.14%	3.21%	3.21%	3.21%	0.02382
Diversified	-27.76%	-30.03%	-30.03%	-30.03%	-0.29122
Electricals	-48.02%	-42.80%	-42.80%	-42.80%	-0.44888
ETF	-9.77%	-7.56%	-7.56%	-7.56%	-0.08444
Finance	7.87%	8.58%	8.58%	8.58%	0.08296
FMCG	16.18%	16.37%	16.37%	16.37%	0.16294
Footwear	95.72%	82.07%	82.07%	82.07%	0.8753
Healthcare	-5.81%	-6.60%	-6.60%	-6.60%	-0.06284
Hospitality	-37.47%	-33.41%	-33.41%	-33.41%	-0.35034
Industrial Gases & Fuels	-8.75%	-12.96%	-12.96%	-12.96%	-0.11276
Infrastructure	-18.68%	-13.69%	-13.69%	-13.69%	-0.15686
Insurance	16.08%	19.97%	19.97%	19.97%	0.18414
Logistics	-27.75%	-29.40%	-29.40%	-29.40%	-0.2874
Manufacturing	-17.63%	-21.02%	-21.02%	-21.02%	-0.19664
Media & Entertainment	-51.49%	-51.24%	-51.24%	-51.24%	-0.5134
Metals & Mining	-33.25%	-31.38%	-31.38%	-31.38%	-0.32128
Miscellaneous	-19.31%	-21.53%	-21.53%	-21.53%	-0.20642
Oil & Gas	10.78%	14.22%	14.22%	14.22%	0.12844
Paper	-56.05%	-55.82%	-55.82%	-55.82%	-0.55912
Photographic Products	-38.30%	-43.79%	-43.79%	-43.79%	-0.41594
Plastic Products	-17.87%	-19.49%	-19.49%	-19.49%	-0.18842
Power	-14.26%	-18.29%	-18.29%	-18.29%	-0.16678
Real Estate	-22.92%	-24.61%	-24.61%	-24.61%	-0.23934
Retailing	21.52%	21.59%	21.59%	21.59%	0.21562
Ship Building	-24.38%	-26.18%	-26.18%	-26.18%	-0.2546
Software & IT Services	22.34%	34.88%	34.88%	34.88%	0.29864
Telecom	-36.29%	-44.84%	-44.84%	-44.84%	-0.4142
Textiles	-35.59%	-40.13%	-40.13%	-40.13%	-0.38314
Trading	-19.27%	-15.18%	-15.18%	-15.18%	-0.16816

Table 2: Ranking of the Sectors on the Basis of Weighted Returns

Sectors	*WTRET*	*Rank*
Footwear	0.87530	1
Software & IT Services	0.29864	2
Retailing	0.21562	3
Insurance	0.18414	4
FMCG	0.16294	5
Oil & Gas	0.12844	6
Finance	0.08296	7
Chemicals	0.06190	8
Diamond & Jewellery	0.02382	9
Banks	0.00836	10
Consumer Durables	-0.00048	11
Healthcare	-0.06284	12
Alcohol	-0.06586	13
Aviation	-0.07478	14
ETF	-0.08444	15
Industrial Gases & Fuels	-0.11276	16
Infrastructure	-0.15686	17
Construction Materials	-0.16254	18
Power	-0.16678	19
Trading	-0.16816	20
Plastic Products	-0.18842	21
Manufacturing	-0.19664	22
Miscellaneous	-0.20642	23
Capital Goods	-0.23556	24
Real Estate	-0.23934	25
Ship Building	-0.25460	26
Logistics	-0.28740	27
Diversified	-0.29122	28
Agri	-0.29654	29
Automobile & Ancillaries	-0.31062	30
Metals & Mining	-0.32128	31
Hospitality	-0.35034	32
Textiles	-0.38314	33
Telecom	-0.41420	34
Photographic Products	-0.41594	35
Electricals	-0.44888	36
Containers & Packaging	-0.45832	37
Media & Entertainment	-0.51340	38
Paper	-0.55912	39
Miscellanreous	-0.65056	40

Table 3: Consistency of Positive Returns of the Stocks Considered for Pair Trading

Sector	*Company*	*MTD*	*QTD*	*HTD*	*YTD*
Footwear	Bata	+ve	+ve	+ve	+ve
	Relaxo Footwear	+ve	+ve	+ve	+ve
Software & IT Industries	AJEL	+ve	+ve	+ve	+ve
Retailing	Aditya Birls F	+ve	+ve	+ve	+ve
	AFL	+ve	+ve	+ve	+ve
	Avenue Supermar	+ve	+ve	+ve	+ve
Insurance	ICICI Lombard	+ve	+ve	+ve	+ve
	HDFC Life	+ve	+ve	+ve	+ve
	ICICI Prudential	+ve	+ve	+ve	+ve
	SBI Life Insurance	+ve	+ve	+ve	+ve
FMCG	Varun Beverages	+ve	+ve	+ve	+ve
	Britannia	+ve	+ve	+ve	+ve

Table No. 4: Results of ADF Tests for Testing Stationarity or Otherwise of the Prices of the Selected Seven Stocks

Stocks	*Dickey-Fuller Statistic*	*p-Value*	*Null Hypotheses*	*Nature of time series of daily closing prices*
ABFRL	-0.1535	0.5674	Accepted	Non-Stationary
AFL	0.9858	0.9123	Accepted	Non-Stationary
DMART	0.4363	0.7554	Accepted	Non-Stationary
ICICG	1.8146	0.9827	Accepted	Non-Stationary
HDFC	1.2047	0.9403	Accepted	Non-Stationary
ICIP	-0.3366	05091	Accepted	Non-Stationary
SBIL	0.6900	0.8363	Accepted	Non-Stationary

Source: Author's own calculations

As all the price series are non-stationary, it may be proceeded with to explore possibility of pair trading with each of these stocks.

For long-term cointegration, Johansen Test is performed. The synopsis of the tests is appended below.

Table No. 5: Results of Johansen Tests for Long Term Cointegration Between Possible Pair of Stocks

Pairs		*Test Statistic*	*Tabular Value at 5%*	*Null*	*Inference*
ABFRL & AFL	r = 1	1.18	9.24	Accepted	
	r = 0	8.11	15.67	Accepted	
ABFRL & DMART	r = 1	3.74	9.24	Accepted	
	r = 0	7.28	15.67	Accepted	
AFL & DMART	r = 1	4.66	9.24	Accepted	
	r = 0	6.37	15.67	Accepted	
ICIG & HDFC	r = 1	2.06	9.24	Accepted	
	r = 0	9.88	15.67	Accepted	
ICIG & ICIP	r = 1	3.45	9.24	Accepted	
	r = 0	12.46	15.67	Accepted	
ICIG & SBIL	r = 1	4.70	9.24	Accepted	
	r = 0	6.09	15.67	Accepted	
HDFC & ICIP	r = 1	1.26	9.24	Accepted	
	r = 0	10. 53	15.67	Accepted	
HDFC & SBIL	r = 1	2.65	9.24	Accepted	
	r = 0	19.12	15.67	Accepted	
ICIP & SBIL	r = 1	0.73	9.24	Accepted	
	r = 0	11.33	15.67	Accepted	

No Long Term Cointegration is present. Hence Long-Term pairing cannot be done with any of these pair of stocks.

Now it was imperative to be studied whether short-term cointegration exists so that short term pairing can be done. Accordingly VAR testing is proceeded to.

Table No. 6: Results of ADF Tests for Stationarity and Otherwise, for the Residuals of Regressions Between Possible Pair of Stocks

Pair	*Dickey-Fuller Statistic*	*p-Value*	*Null Hypotheses*	*VAR*	*Feasibility of pair Trading*
ABFRL & AFL	-2.3507	0.0198	Rejected	Not Applicable	Feasible
ABFRL & DMART	-1.8686	0.0623	Accepted	Applicable	Not Feasible
AFL & DMART	-1.5275	0.1295	Accepted	Applicable	Not Feasible
ICIG & HDFC	-1.5448	0.1240	.Accepted	Applicable	Not Feasible
ICIG & ICIP	-2.3322	0.0256	Rejected	Not Applicable	Feasible
ICIG & SBIL	-1.9722	0.0482	Rejected	Not Applicable	Feasible
HDFC & ICIP	-2.0829	0.0381	Rejected	Not Applicable	Feasible
HDFC & SBIL	-4.2243	0.0100	Rejected	Not Applicable	Feasible
ICIP & SBIL	-3.0026	0.0234	Rejected	Not Applicable	Feasible

Source: Author's own calculations

The Johansen Tests confirmed that no long-term cointegration could be observed between the selected pairs.

However, short-term cointegration was observed in the pairs ABFRL-AFL, ICIG-ICIP, ICIG & SBIL, HDFC & ICIP, HDFC & SBIL, ICIP & SBIL.

Conclusion

Considering the selected sectors and the selected stocks, pair can be done for short term using cointegration methods in the Retail sector with stocks of ABFRL.

Pair can be done for short term using cointegration methods in the retail sector with stocks of ABFRL & AFL. The same can also be done in the insurance sector with stocks of ICIG-ICIP, ICIG & SBIL, HDFC & ICIP, HDFC & SBIL, ICIP & SBIL.

Scope for Further Studies

This paper has studied only equity stocks of five sectors and performed cointegration tests taking two stocks at a time.

Further studies can be done on other sectors of investors' choice. Studies may also be carried out to examine if more than two assets are cointegrated. For example, studies could be carried out to see if more than two different ETFs tracking a common underlying e.g. gold are cointegrated.

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A Research on Corporate Dividend Policy of Giant Public Companies in India

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Abstract

Emphasis on the attainment of national goals through registering speedy growth in the sector 'industry' in a predominantly agriculture country like India constitutes now an integral part of the long-term strategy accepted as part of planned programs finally devised in tune with the Fundamental Directive Rights and Principles of State Policy enunciated in the Indian Constitution on the one hand, and the objective of establishing a Socialistic Pattern of Society, on the other. It is not only persuasive but conceptually sound as the same is backed by the empirical evidence obtainable on the experiences relating to the history of development of a large number of developed countries of the world. Subservient to the political philosophy of Socialistic Democratic Sovereign Republic the concept of 'mixed economy' i.e., promotion of both public and private sectors has come to be accepted as a part of operational policy vide Industrial Policy Resolution of 1956. This Resolution however underlines the need for prevention of private monopolies and concentration of economic power alongside stressing the role of Cottage and Small-Scale Industries in the development of the national economy and by promoting balanced industrial development in different regions of India.

Keywords: *Fundamental Directive Rights, Principles of State Policy, Socialistic Democratic Sovereign Republic, Mixed Economy, Industrial Policy Resolution*

Introduction

Economic growth, be it a case of any sector, is an extremely intricate phenomenon. Thus, it is influenced by more than one category of interrelated variables which may be broadly relate to physical, technological, financial, structural, and institutional aspects of an economy. While it is difficult to identify the most crucial factors contributing to the maximization of growth in different segments, it is widely accepted that the availability of adequate and timely finance on appropriate terms is of paramount significance. The financial resources needed by an industrial enterprise fall in two categories: short-term, and intermediate and long-term. The main sources of short-term capital include accounts payables and accruals and borrowings from banks. The share capital, debenture capital, borrowings from public and financial

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institutions both in and outside the country, and retained earnings constitute the main sources of long-term capital. In case of the enterprises belonging to public, joint and cooperative sector the budgetary allocation and subscriptions by the State further play a significant role in point of arranging long-term resources in contrast to those available for their counterparts operating in private sector. It may however be observed in this context that the position of enterprises belonging to public sector, including those of joint and cooperative sectors, entirely differs from that of the private sector. For public sector enterprises, both the Centre and State Governments take enough care in point of making available the requisite funds either through budgetary allocation or through giving appropriate directives to the public finance institutions including the commercial banking system - a chunk portion of which is now owned and managed by the state; this fact is well corroborated by steadily increasing public outlays earmarked for the financing of such enterprises in our Five Year Plans. The procurement of funds by the private corporate sector too did not pose any serious problem until the close of 1970. As a matter of fact, till then there was no difficulty for the established companies of this sector in gathering the needed capital, may it be of short-term or of long-term nature. And, both banks and industrial finance institutions use to come to their rescue like 'shock absorbers' during depressed money and capital market conditions. However, this situation underwent drastic changes during the period of last one decade or so due to the stress on the promotion of 'balanced growth' in the planning system on the one hand, and acute oil crisis and registering 3 of an almost two digital inflation every year, on the other. These features of the economy necessitated a number of changes both in the then existing regulatory frame work meant for the sector industry as also in the lending policies of the finance institutions. It provoked rethinking in the government circle which could be gauged from the fact that a number of Study Groups/Committees came to be constituted by the Government intersidereal 1967-79. The important among these include the Industrial Licensing Policy Inquiry Committee (1969) popularly known A- 5 as Dutt Committee, Tandon Committee (1974), Sachar Committee (1977) and Chore Committee (1979). Of all the recommendations made by different Study Groups/Committees, the recommendation of the Chore Committee may be reiterated here. It is as thus the corporate sector must reduce its overall dependence on commercial banking system and finance institutions in point of obtaining funds. This Group pertinently stressed the need of reducing the overdependence of the medium and large borrowers-both in the public and private sectors - on bank finance for their production/ trading purposes.

Literature Review

An analysis of dividend behavior in terms of two principles, namely marginal' and 'liquidity' was undertaken by MoAman J. Buchannan in 1938. Explaining the marginal principle, he pointed out that the earnings on the funds reinvested by the company would be higher than the returns that the stockholders would earn although it is difficult to measure and compare such returns.

Buchanan, however, observed that this aspect has rather played little role in decision making process as it concerns with dividend distribution. It is cash position of the firm which always dominates the scene.

Jan Timbergen (1939) on the basis of all required proofs reached to the conclusion that in a dynamic world dividend distribution or payout ratio is affected by current and lagged profits

as well as by surpluses.

For nearly two decades the empirical studies centered around John Lintnusi' s hypothesis that dividends represent primary and active decision variable, while retained earnings are largely a by-product of dividend action taken in terms of well-established practices and policies; corporate management set a target dividend payout ratio and try their best to maintain it. The dynamics of decision-making process rests on partial adjustment mechanism. A change in dividend in any period is linked to the discrepancy between dividends that are commensurable with the desired payout ratios for given level of profits and dividend payouts in the previous periods This hypothesis of Lintner implies the stability of dividend behavior, which in his opinion, is the result of several considerations of management and shareholders', preferences. This stability is to be achieved by partial adaptation of dividends to some desired payout norm in relation to earning. While counting the prominent determinants of dividend payment, under the specific conditions of payout and adjustment norms, Lintner stressed on 'current earnings' representing capacity to pay dividends. These norms are the consequence of a variety of factors covering companies' experience, their objectives and nature of operations.

Edwin Kuh attempted a very incisive analysis of corporate dividend policy on the proposition that internal finance is widely preferred by the firms. Accordingly, theory of investment must consider the availability of internal finance which implies relationship between planned investments and dividend policy. This link is found in the behavior of the 'speed of-adjustment coefficient' and the ' targeted payout ratio'. The firms that adjust their dividends according to Lintner' A model and capital stock according to Chenery' a model are free to select coefficients compatible to the financing of their investments with retained earnings on a continual basis. The hypothesized link between dividend and investment decisions has, however, not been confirmed by empirical evidences; the speed-of-adjustment coefficients for the dividend models having found larger than the capital 1 6 stock models.

Corporate dividends were treated better by H. Mazumdar. Employing data included in the Taxation Enquiry Report for the period 1946-51, and the Combined Balance Sheet data for the period 1950-55 as published by RBI and accepting the hypothesis of S. P .Dobrovolsky ' s analysis of dividend behavior, he pointed out that the dividend behavior can be explained in terms of current profits, the preceding years' dividends and the current requirement for expansion. In his considered opinion, current profits are the most strategic variable in so far as the dividend behavior is concerned. Furthermore, dividends are steadier than retained earnings finding which proves that dividend decision is not of a residual nature. At best, albeit, Mazumdar discussed the dividend behavior in an indirect way and without providing necessary statistical proofs.

V. K. Sastry ' s unpublished doctoral dissertation on 'Dividends, Investments and External Financing Behavior of Corporate Sector in India' tested several alternative hypotheses concerning with the dividend behavior. It is a cross-section study of firms across the concerned industries for the period 1955-60. It reached to the conclusion that current profits act as an important variable affecting their dividends and savings. No doubt, the basic Lintner hypothesis provides a satisfactory explanation to the dividend behavior but gross profits after tax is a refined variable than net profits after tax. The two stage least squares estimation attempted to analyze the interaction between dividend, external finance and investment

confirms that investment expenditure exerts negative influence on dividends. Surely, Sastry study is a major contribution to the analysis of dividend behavior in India, its conclusions need asseveration again. Based upon a sample of 28 companies from the Chemical Industry, D.Dakshinamurthy and V.V.L. Narashimha Rao observed that Cash Flow Model provides better explanation to the corporate dividend behavior in sharp contrast to Lintner's Basic Model and Explicit Depreciation Model. The extent to which the mobilization and generation of savings are influenced by dividend behavior did not, however, attracted the attention of the author.

B.S.Bhatia and R.Singh evaluated the dividend policy of Indian enterprises by selecting a sample of 50 companies and the period 1966-68. They employed all available sophisticated statistical tests on profits, dividends and market price of their shares and found that a similarity is witnessed in the dividend behavior of these companies on the basis of cross-section analysis.

They inferred that the companies must permit the distribution of regular dividends at a steadily rising rates and should aim at the establishment of a stable dividend rate over the year* for it alone can assist them in raising additional capital, enhance their reputation and increase the value of their securities. They were also of the opinion that regularity of dividend payment and the uniformity of its rate are the two basic guides for the distribution of dividends. No universal relationship among the three factors, namely, dividends, profits and market price of share could, however, be established by them.

Quite recently P. K. Khtuiana has also analyzed 'Corporate Dividend Policies and Practices' on the basis of a sample of 65 companies from 5 major industrial classes with a view to identify and determine the significance of variegated economic variables for explaining the observed variations in dividend payments for a period of 15 years, 1962-77. The contribution of this study lies in the explanation provided for various factors influencing the dividend practices as also in suggesting a rational dividend policy under different business situations which may result in the maximization of owners' wealth. The feasibility of the recommended rational dividend policy for the various business undertakings cannot however be regarded as the one on which eyebrows cannot be raised.

Objectives of the Study

- To discovering the relationships found between payout ratios and profits on the one hand, and profits and dividends, on the other.
- To tracing out the strategic factors which influence the dividend decisions.
- To examining the impact of issuance of bonus shares on the dividend rates.

Methodology

This study has been completed primarily on the basis of secondary data, though the primary data have also been used to fill up the deficiencies observed in the secondary information and to strengthen our findings on the subject. The main sources from which we have collected secondary data include Annual Reports of Sample Companies, the Stock Exchange Official Directory, Bombay, Directory of Joint Stock Companies in India, 1980, Registration and Liquidations of Joint Stock Companies in India 1980-82 and 1983-84, Madras Stock Exchange Official Year Book, Kothari Economic and Industrial Guide of India, Drafts of Five Year Plans,

National Accounts Statistics: 1970-71 to 1982-83, Economic Surveys, Reserve Bank of India's Monthly Bulletins, Financial Statistics of Joint Stock Companies in India and important works produced by Western and Indian researchers as have already been mentioned by us in the preceding chapter under the heading 'Perlustration of the Existing Literature'. Certain gaps in the secondary information were filled in by establishing personal contacts with the concerned executives of the various sample companies.

Results

Dividends are paid out of the net earnings of the firm to the equity shareholders. Generally, the entire amount of net profits is not distributed to the existing shareholders in a going and expanding concern; a portion of net profits is ploughed back by its transfer to the fund of 'reserve and surpluses' for financing the worthwhile investment projects in future. How much amount would actually be utilized for cash dividend distribution is determined by the Corporate Managements as a matter of their prerogative; although in practice, those in charge of corporate finance make their recommendations and the necessary feed-back, and the Board of Directors take a g decision on it. This feed-back normally cover the details of the company's current and forecasted earnings; its estimates of cash flow and liquidity and also the finance needed for meeting the working capital requirements; the available investment projects and their net present worth; the sources, cost and the amount of the funds that could be raised through money and capital market/external sources for meeting the short and long-term capital needs and their likely impact on the company's capital structure, debt capacity and ownership and managerial structure, interest rate structure; the dividend practices that are being followed by other firms in the concerned industry; relevant legal and tax provisions; and, the restrictions, if any, which are found existing as part of any debt contract already entered into. Analyzing of this information is however not an easy task. Quite often the variables involved are complex and conflict with each other.

The decision in respect to the proportion of the net earnings to be distributed to the equity shareholders is captioned as 'Dividend Policy'. Alternatively, it refers to the stipulation of payout or retention ratio. The amount of net earnings which is retained in the enterprise provides an important source of funds for financing the lucrative expansion /modernization/ diversification programs, aside aggrandizement in the working capital funds. Quantum wise retained earnings have directly financed the creation of nearly one-fifth portion of the assets in the Indian private corporate sector which is not very significant in contrast to the portion of the assets financed by borrowings; While there is found divergence in opinions on the point of the impact of dividend policy on the market price of the firm's share and, thereby, the owners' wealth, it is empirically established, both in and outside the country that both are intimately related. The positive or negative impact of the dividend policy of a firm on its owners' wealth would, however, depend on how well it is conceived keeping in view the ownership and firm's other interests. A sound dividend policy aids in building up of the confidence of the existing and prospective shareholders, investors and creditors in the firm resulting into an improvement of its overall debt-capacity and credit rating.

Discussion

The modernity, substantial degree of self-reliance, diversification and use of high level of technology that are now observed in our industrial sector have been the consequential impacts

of the pivotal role played by the corporate sector during the planned era. The Industrial Policy Resolution of 1956, as modified from time to time, conceptualized an articulated framework for the Government's industrial policies which aimed at accelerated growth of output and employment and at achieving certain socio-economic objectives, such as, regional dispersal of growth, promotion of village and small industries, prevention of monopolies and concentration of economic power in fewer hands by allowing the public corporate sector to play a catalyst role in attaining a realistic structure of 'mixed economy' on the one hand and, Socialistic Pattern of Society, on the other. In years ahead sector industry, as envisaged by our planners, it would continue to play a pioneering role in accomplishing the determined targets of overall economic growth, though the current emphasis is on better efficiency, reduction of cost, improvement of quality through execution of latest technological developments and paying greater attention of the economies included in competition.

In the context, therefore, it would be interesting to present an overview of the composition of our corporate sector. Basically, the Indian corporate sector is comprised of large number of companies which have come to registered under the Companies Act, 1956 under its different Clauses. Registration wise, these companies fall under three categories: companies limited by share, companies with unlimited liability and companies limited by guarantee; the total number of all the three categories of companies have increased to 73,404 as at the close of March 31, 1982 from 28,077 at the beginning of April 1960, thereby, indicating an average annual percentage increase of 7.34 over a period of twenty-two years. In terms of the ownership and nature of membership, all companies are classified into government and non-government companies and public and private companies, respectively. The number of government companies rose to 894 (with a total paid up capital of Rs.12,789.1 crores) from 125 (with Rs. 477.2 crores) and those belonging to non-government segment to 70,795(with Rs. 4083.0 crores) from 26,772 (with Rs. 1,141.5 crores) during the aforesaid period, thereby, an overall increase of 769 (6.15 times) and 44,023 (1.64 times) in the number of government and non-government companies, respectively. Of the total increase of 769 in the number of government companies, the public limited companies increased by 335 (9.05 times) and the private limited companies by 434 (4.93 times) in contrast to an increase of 2,379 (0.33 times) in the former and 41,644 (2,12 times) in the latter in case of non-government companies. It means that the increase in the number of private limited companies has been more spectacular both in the case of government and non-government companies. It may further peruse in the table under reference that numerical growth in the companies has been at a higher pace since 1970s. In regard to the growth witnessed in the paid-up capital it may be mentioned that in the case of government companies it rose to Rs.12,401.9 crores (26 times) and by Rs. 2,941.5 crores (0.72 times) for the companies belonging to the non-government sector during the period under review. Of Rs.12,401.9 crores, public limited companies account for Rs. 1,239.7 crores (47.7 times) and the rest Rs. 11,162.2 crores (24.75 times) by private limited companies. Similarly, of the increase of Rs.2,941,5 crores relating to non-government sector Rs.2,208.4 crores (2.71 times) concerns with the private limited companies and Rs. 733.1 (2.24 times) to public limited companies. Thus, it is noticed that the growth of paid-up capital has been rather impressive between 1970-71 and 1981-82-a trend which clearly seems to be the result of rapid growth in the number of companies Furthermore, the government companies have eclipsed the nongovernment companies in

point of their growth measured in terms of their number and paid-up capital. This outcome is however, not to be surprised at in view of the Government of India s policy to encourage the public sector in its Five-Year Plans.

Even so it does not subside the significance of the companies t of the private corporate sector from the angle of the role it is playing in attaining the cherished goals for the sector industry albeit operating under variety of strict regulatory controls of the government. Thus, the private sector industrial units generate almost an identical amount of savings (Rs.1,038 crores i.e., 4.53 per cent of the total savings of Rs. 22,895 crores) and the aggregate distribution (Rs.4,160 cores) by way of profits and dividends to the factors of production far exceeds than that of the private sector enterprises; it being Rs. 1,119 crores i.e., 4.89 per cent for the former and Rs. 3,061 crores for the latter. The Return on Investment (ROI) for the private sector, as is well known to all, leaves the public corporate sector much behind in this regard. Moreover, from the viewpoint of the study of dividend decision, it is the undertakings of the private corporate sector which matters most for the simple reasons that the public sector enterprises in India have been set up primarily not with the objective of maximizing profits and owners' wealth.

Epitome of Deterministic Trends in Payout Ratios, Profits, Dividends and Retaining Earnings and Significant Relationships:

The trends observed in respect to payout ratios, profits, dividends retained earnings, it may be mentioned at the outset that our actual analysis is based on ninety-three sample companies; eight companies have consciously been excluded. As many as five companies, namely,'Bhadrachalam Paper Boards Limited','J.K.Industries Limited','Mandovi Pellets Limited','Manglore Chemicals and Fertilizers Limited' and 'Southern Petrochemical Industries Corporation Limited', did not pay any dividend in any of the years covered by this Study and thus making them rather trifling from the view point of analysis. 'The Hindustan Construction Company Limited' and 'Renusagar Power Company Limited' are wholly owned subsidiary companies of the 'Premier Construction Company Limited' and 'Hindustan Aluminum Corporation Limited' respectively. Hence, we have included in our analysis the concerned parent companies alone.

Table 1: Averages of Profits, Dividends, Retained Earnings and Payout Ratios (1960-61 to 1981-82)

Year	*Profit*		*Dividend*		*Ret. Earnings*		
	% of Equity Capital	*% of Net Worth*	*% of Equity Captial*	*% of Net Worth*	*% of Equity Capital*	*% of Net Worth*	*Pay Out*
First Half: (1960-61 to 1970-71)							
1960-61	19.80	13.85	12.45	8.21	7.35	5.14	63
	(20.89)	(13.00)	(12.02)	(7.48)	(8.87)	(5.42)	(58)
1961-62	20.65	14.46	12.54	8.78	8.11	5.68	61
	(19.25)	(11.91)	(11.82)	(7.31)	(7.43)	(4.60)	(61)
1962-63	18.09	12.73	11.33	7.97	6.76	4.76	63
	(16.82)	(10.47)	(10.77)	(6.70)	(6.05)	(3.77)	(64)
1963-64	19.90	13.91	11.82	8.26	8.08	4.65	59
	(18.89)	(11.54)	(11.16)	(6.82)	(7.73)	(4.72)	(59)

Year	*Profit*		*Dividend*		*Ret. Earnings*		
	% of Equity Capital	*% of Net Worth*	*% of Equity Captial*	*% of Net Worth*	*% of Equity Capital*	*% of Net Worth*	*Pay Out*
1964-65	20.82 (19.16)	15.66 (11.44)	12.79 (11.34)	8.78 (6.78)	8.03 (7.82)	6.88 (4.66)	56 (59)
1965-66	24.57 (17.14)	16.27 (10.86)	13.44 (10.37)	8.90 (6.57)	11.13 (6.77)	7.37 (4.29)	55 (60)
1966-67	24.44 (16.68)	17.07 (11.36)	17.77 (9.64)	8.22 (6.56)	12.67 (7.04)	8.85 (4.80)	48 (58)
1967-68	20.10 (13.0)	15.34 (9.12)	11.31 (9.07)	7.85 (6.53)	8.79 (3.95)	7.49 (2.77)	51 (70)
1968-69	21.63 (12.54)	14.63 (8.78)	10.96 (8.90)	7,41 (6.24)	10.67 (3.64)	7.22 (2.54)	51 (71)
1969-70	26.71 (17.68)	17.41 (12.25)	11.62 (9.73)	7.58 (6.74)	15.09 (7.95)	9.83 (5.51)	44 (55)
1970-71	31.14 (19.32)	19.33 (13.00)	12.72 (10.63)	7.91 (7.11)	18.39 (8.69)	11.42 (4.85)	41 (55)
Second Half: (1971-72 to 1980-82)							
1971-72	29.43 (20.95)	17.32 (13.94)	13.27 (10.09)	7.81 (6.71)	16.16 (13.94)	9.51 (7.23)	45 (48)
1972-73	27.90 (20.78)	16.74 (13.62)	14.05 (10.52)	8.43 (6.90)	13.85 (10.26)	8.31 (6.72)	50 (51)
1973-74	28.09 (24.34)	16.39 (15.44)	11.76 (9.43)	6.86 (5.98)	16.33 (14.91)	9.53 (9.46)	42 (39)
1974-75	38.37 (31.40)	21.40 (18.76)	11.49 (8.65)	6.41 (5.21)	26.88 (22.75)	14.99 (13.55)	30 (28)
1975-76	30.94 (18.10)	16.66 (11.07)	13.05 (10.02)	7.00 (1.13)	17.89 (8.08)	9.60 (4.94)	42 (55)
1976-77	31.94 (16.69)	17.30 (10.47)	13.24 (10.61)	7.17 (6.66)	18.17 (6.08)	10.13 (3.81)	41 (64)
1977-78	32.32 (19.03)	16.81 (11.92)	13.32 (10.95)	6.94 (6.86)	19.00 (8.08)	9.91 (5.06)	41 (58)
1978-79	34.23 (25.35)	17.31 (15.50)	14.29 (11.78)	7.22 (7.21)	19.94 (13.57)	10.09 (8.29)	42 (47)
1979-80	40.75 (34.21)	19.37 (19.54)	15.03 (12.54)	7.14 (7.16)	25.74 (22.33)	12.23 (12.38)	37 (37)
1980-81	43.83 (37.15)	20.26 (19.95)	15.58 (13.07)	7.20 (7.02)	28.25 (24.08)	13.06 (12.93)	36 (35)
1981-82	48.16 (NA)	2.10 (NA)	16.19 (NA)	7.09 (NA)	31.97 (NA)	14.01 (NA)	34 (NA)

Year	*Profit*		*Dividend*		*Ret. Earnings*		
	% of Equity Capital	*% of Net Worth*	*% of Equity Captial*	*% of Net Worth*	*% of Equity Capital*	*% of Net Worth*	*Pay Out*
Overall Averages							
First Half	23.61 (17.07)	15.94 (11.21)	12.01 (10.29)	8.11 (6.75)	11.60 (6.78)	7.83 (4.46)	51 (60)
Second Half	36.48 (25.39)	18.62 (15.41)	14.04 (10.95)	11.16 (6.64)	22.44 (14.44)	11.46 (8.77)	38 (43
Total Period	32.63 (22.43)	17.97 (13.99)	13.44 (10.70)	7.39 (6.68)	19.24 (11.72)	10.58 (7.31)	41 (48)
Annual Average Increase							
First Half	5.21 (-0.68)	3.60 (0.00)	0.22 (-1.05)	-0.83 (-0.40)	13.65 (-0.18)	11.11 (-0.96)	
Second Half	5.79 (7.73)	1.98 (4.31)	2.00 (2.95)	-0.84 (0.46)	8.89 (12.17)	4.30 (7.88)	
Total Period	6.51 (3.70)	2.38 (2.55)	1.31 (0.42)	-0.85 (-0.29)	15.23 (8.17)	7.84 (6.60)	
Standard Deviations							
First Half	3.65 (2.49)	1.81 (1.31)	0.74 (1.01)	0.50 (0.37)	3.48 (1.65)	2.06 (0.92)	7.16 (5.13)
Second Half	6.46 (6.78)	1.82 (3.29)	1.40 (1.30)	0.50 (0.60)	5.60 (6.37)	2.07 (3.36)	5.22 (0.74)
Total Period	8.18 (6.23)	2.27 (3.10)	1.40 (1.17)	0.71 (0.50)	7.16 (5.81)	2.81 (3.15)	9.33 (11.08)
Coefficient of Variation							
First Half	16.21 (14.33)	11.70 (11.71)	6.09 (9.62)	6.02 (5.41)	33.32 (23.97)	28.57 (21.15)	13.30 (8.41)
Second Half	18.40 (27.35)	9.97 (21.90)	10.18 (12.06)	6.94 (9.09)	26.24 (45.14)	18.76 (47.72)	13.06 (23.25)
Total Period	28.39 (29.79)	13.45 (23.77)	10.84 (10.97)	9.18 (7.47)	45.05 (55.95)	30.85 (46.38)	19.88 (20.55)

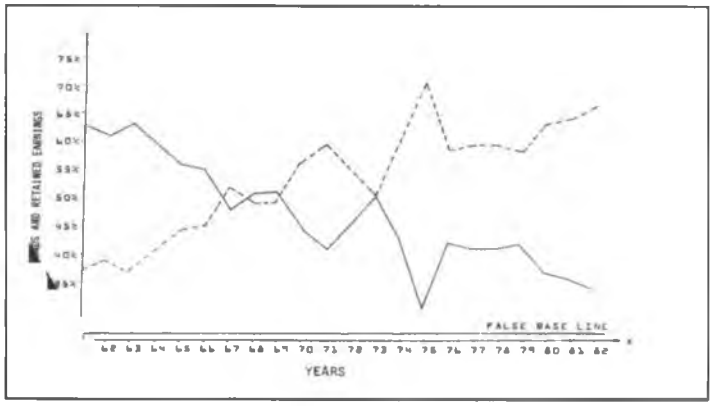
Macro-Trends

Macro-Trends Payout Ratio (PO)

As may be seen in Table 1 that the average Po for the 'Total Period' stood at 41; it being 51 for the First Half, and 38 for the Second Half which implies that there has been more emphasis on the retention of earnings in {Second Half in contrast to the larger distribution of earnings by way of dividends during the First Half. The year wise details of the PO for the different years of our Total Period may be seen in Column 8 and Column 15 of the table under reference; the

highest and the lowest PO being 63 and 30 during the year 1960-61 & 1962-63 and 1974-75, respectively. On the whole these indicate a steadily declining trend in the PO over the years.

Figure 1: Distribution of Profits by Sample Companies



- Equity dividends as percentage of profits

- Retained earnings as percentage of profits

The Columns 2 and 9 and Columns 4 and 11 of table under analysis contain the year wise averages of Profit and Dividend. A perusal of these reveals that while Profit registered an average annual increase of 6.51 per cent during the Total Period, the De rose only at an average annual increase of bare 1.31 per cent; the values of regression coefficients of Profit and Dividend computed as part of time-series analysis also bear out the similar trends; the values of regression coefficients of Profit and Dividend being + 0.009 and +0.002, respectively. In the First Half, however, these rates have been 5.21 per cent and 0.22 per cent, respectively; the corresponding figures for the Second Half being 5.79 per cent and 2.00 per cent, respectively. In more explicit terms, while the rise in Profit have relatively been at a faster rate during the Second Half on the First Half, the average rates of Dividend increased suddenly during the period of Second Half as against an almost static position observed in this regard during the First Half; the average rate of Dividend having varied between 10.96 and 12.79 in the First Half and between 11.49 and 16.19 in the Second Half. Again, the reason for the above trends has been that the retention ratios during the First Half have relatively been lower when compared with those of the Second Half - a fact which is i further obvious from the averages of the Return of earnings shown vide Columns 6 and Column 13 of the table being analyzed. Thus, the pattern of the averages of Profit and Dividend and Return of earnings fully supports the trends observed on the basis of payout ratios.

Table 2: Relationship between Payout Ratio (PE) and Profit (PE) (1960-61) to (1981-82)

Period	*'r'*	*'r^2'*
First Half	-0.86 (-0.71)	0.74 (0.50)
Second Half	-0.79 (-0.85)	0.63 (0.73)
Total Period	-0.89 (-0.92)	0.80 (0.84)

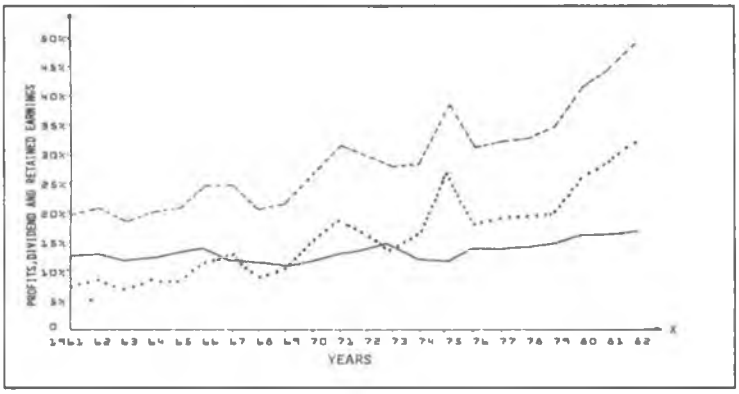
Table 3: Relationship between Profits (PR) and Dividend (DE) (1960-61) to (1981-82)

Sl.No	*Data Source/ Period*	*'r'*	*'r^2'*
1	Sample Companies		
	First Half	0.33	0.11
	Second Half	0.68	0.46
	Total Half	0.77	0.56
2	Cross-Section Analysis		
	1960-61	0.83	0.69
	1972-73	0.49	0.25
	1974-75	0.38	0.15
	1981-82	0.64	0.38
3	RBI Data		
	First Half	0.89	0.80
	Second Half	0.47	0.21
	Total Period	0.50	0.25

Relationship of PE with PO and DE and Cross-Section Analysis

The relationship between Po and Pe is measured in terms of the values of coefficient of correlation ('r') and their expression with the help of coefficient of determination ('r '). The values of 'r' worked out for the Total Period = -0.89, First Half = -0.86, and Second Half = -0.79 and of '' at 0.80, 0.74, 0.63 for the aforesaid periods, respectively. These indicate that there exists high degree of inverse relationship between Po and Pe meaning thereby that with the increase in Pe, Po would decrease and vice-versa. As against this a positive relationship is noticed between Pe and De as can be adjudicated by the relevant values of 'r' viz., +0.77 for the Total Period, +0.33 for the First Half and +0.63 for the Second Half. The values of 'r2, viz., 0.59 for the Total Period, 0.11 for the First Half, and 0.46 for the Second Half show that De is not fully explained by Pe Relatively, higher stability has been observed in Pe and De during the First Half as compared to Second Half since the values of standard deviation stood at 3.65 & 0.74 and 6.46.& 1.40, respectively.

Figure 2: Trends in Profits (PE), Dividends (DE) and Retained Earnings (RE) as Percentage of Equity Capital of Sample Companies



- Profit's net of taxes and preference dividends as percentage of equity capital
- Equity dividends as percentage of equity capital
- Retained earnings as percentage of equity capital

It is clear that while in the First Half sample companies favored a stable dividend practice, they switched over to the practice of step-up dividend practice during the Second Half. There is found a high degree of inverse relationship between payout ratios and profits, and a positive relationship is discernible between profits and dividends, although the increase in dividends over the Total Period has been less than the proportionate increase registered in profits. The retention of larger amounts of profits by the companies with themselves, especially during the Second Half in accordance with the Government's keenness to attain self-reliance in point of finances and thus reduce their dependence on banks and other finance intermediaries, has perhaps been the most significant factor contributing to the latter part of this relationship.

Factors Affecting the Dividend Decision

The trend analysis undertaken in the preceding Section clearly proves that: (a) profits (P), and (b) the dividend rates of previous years (henceforth called 'lagged dividends = D)are the two key variables influencing the dividend decisions in almost all the sample companies. This Section further examines the extent to which these variables are important for the purposes of dividend decisions with the help of a regression model developed by reckoning profits and dividends as percentages of equity capital.

Impact of Issuance of Bonus Shares on Dividend Rates

True that profits (Pt) and lagged dividends (D are the major determinants of dividend decision, issuance of bonus shares as explained in Chapter One, has its own role in influencing the actual dividend rates. Accordingly, an exercise has been undertaken in this direction by compiling year- wise information's on the issuance of bonus shares during the Total Period by the sample companies and assessing the impact of the issuance of bonus shares on dividend rates by analyzing the figures pertaining to the equity capital, reserve position, amount capitalized by way of issuance of bonus shares, bonus share ratio, payout ratios and profits earned of the preceding and succeeding years to the year in which the bonus shares have been issued by selecting a sample of five companies at random basis out of those which issued bonus shares in each of the selected years, namely, 1966-67, 1974-75, 1977-78 and 1980-81 ; these years represent those periods in which the maximum number of respondent companies resorted to the issuance of bonus shares. 78 companies issued bonus shares in different years through capitalizing nearly Rs. 494 crores - the number of bonus issues being 230. The year-wise perusal indicates that while no company resorted to bonus issue during the year 1960-61, bonus issues stood at the maximum of 29 during 1966-67. Prior to 1966-67, the number of bonus issues seems to have been conserved on account of imposition of a tax on bonus shares in 1957 at 12.5 %, which was subsequently raised to 30 per cent but was withdrawn in the year 1966, only once during the period 1960-61 to 1981-82. As regards bonus ratio, it may be mentioned chat 27 companies out of the 78-bonus share.; issuing companies repeated the same bonus-share ratio two or more times indicating thereby a tendency among the bonus issuing companies to follow a specific pattern evolved by their managements.

The 'McDowell and Company Limited' in the year 1974-75 with high bonus share ratio (1:1), possessing a weak equity structure and having a record of high profits accompanied with a past record of low dividend rates has attempted to maintain the dividend rate after the issuance of bonus shares. The tendency of maintaining dividend rate has also been witnessed for 'The Birla Jute Manufacturing Company Limited', 'The Standard Mills Company Limited' and ' Polyolefins Industries Limited' for the years 1966-67 for the first two companies, and 1974-75 for the latter which have issued bonus shares at a low rate (1:4 or less) and created a record of earning steadily rising profits for themselves. The dividend rates seem to have not been purposely increased at whenever bonus has been kept higher levels; however, the dividend rate has been increased by 'The Actual Products Limited' (1974-75), 'Escorts Limited' (1974-75), 'Glaxo Laboratories (India) Limited' (1977-78), 'Ceat Tyres of India Limited' (1980-81) and 'I.T.C.Limited' (1980-81) whenever they have issued bonus shares either in low ratio or in relatively moderate ratio (1:2) and the managements have forecasted a record of rising profits after the issuance of bonus shares.

Conclusion

The terminal generalized inferences of the study on all considerations allow us nothing but to conclude that there can be no other optimal dividend policy which we may recommend, irrespective of the diversified characters that are witnessed in Indian Corporate Sector on the basis of ownership and management - public, private, cooperative, joint sector, multinationals, size - large, medium and small scale enterprises; and longevity - old and established, relatively new and new, excepting the one of 'Regular or Stable Dividend Practice' with 'Irregular Issues of Bonus Shares'. However, it is suggested from the angle of long-term perspective. This recommendation of ours, as is based on the findings of this work, suffers from some serious drawbacks. It does not take into account the expectations of the existing and prospective investors. They are in favor of a 'Regular or Stable Dividend Practice' accompanied with 'Regular Issue of Bonus Shares', although they would not mind situational adjustments in it in the years warranted by persuasive unfavorable conditions. Another circumstance where the shareholders are prepared to accept any variation in the aforesaid policy in when the dividend distribution is restricted consequential to certain governmental regulations. Hence, we may conclude this study by voting for a 'Regular Dividend Practice' accompanied with Issues of Bonus Shares' at the permissible time-intervals, which, of course, is a slight modification to what over study suggests.

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