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Editorial

It gives me immense pleasure to present before you Vol. VII, No. 2 of Business Spectrum, the peer reviewed fully referred UGC-listed e-Journal of IAA South Bengal (Midnapore) Branch. Although we are in late, we are trying to regularize the Journal without compromising its quality. In this issue we have accommodated six qualitative articles on different areas of business.

Dr. Deepankar Sinha & Dr. Jayanta Kumar Seal in their article entitled 'EFFICIENCY ACCOUNTING IN PORTS: IDENTIFYING THE KEY-PERFORMANCE INDICATORS' had mentioned that ports are key economic entities in any global trade. Their paper identified the dimensions of port performance and suggested the key-performance- indicators (KPI) to evaluate the decisions taken by the port planners and future decisions required to be taken by them. The four dimensions as they mentioned are customer, cost, contribution and climate. The KPIs against these dimensions have been suggested and an integrated KPI proposed in this paper.

CMA Sudarshan Maity & Dr. Tarak Nath Sahu in their article titled 'PRE-MERGER PERFORMANCE MEASURES OF STATE BANK OF INDIA AND ITS ASSOCIATE BANKS USING DATA ENVELOPMENT ANALYSIS' had mentioned that before mergers took place most of the associate banks of SBI operated at efficient level and the mergers will help to decrease unhealthy competition between SBI and its associate banks, mitigate the risk and better focus on defaulter.

Dr. Amalendu Samanta & Dr. Arindam Das in their article entitled 'VALIDITY OF BEHAVIOURAL MODELS ON DIVIDEND PAYOUT: A CASE OF INDIAN BANKING SECTOR' had mentioned that in banking industry, dividend policy is best explained by explicit depreciation model proposed by Brittain and Indian banks are regular dividend payers and avoid dividend reduction.

Mr. Debabrata Jana in his article titled 'IDENTIFICATION OF FACTORS AFFECTING DIVIDEND: A STUDY OF FMCG COMPANIES IN INDIA' had mentioned that there are six factors viz. return on assets, earning per share, CR, DER, FSZ and FGR which have significant relationship with the dividend payout ratio of the selected FMCG companies in India.

Ms. Ritu Pareek in her article titled 'CORPORATE SUSTAINABILITY AND ITS RELATIONSHIP WITH FINANCIAL PERFORMANCE: SELECTED REVIEWS AND EMPIRICAL FINDINGS' had assembled the observations and findings of a few conceptual as well as empirical studies on Corporate Sustainability.

Mr. Shantanu Ghosh in his article titled 'ELECTORAL BONDS – AN INNOVATIVE STEP TOWARDS TRANSPARENCY' had mentioned that electoral bond is one of the major steps taken by the present government to counter the black money involved in financing of Indian politics. In his paper he analyzed the background of this measure and provided recommendations on its emergence.

Before I conclude I profusely thank to the paper writers, reviewers, desk editor and executive editor for their hearty co-operation in bringing out this volume of Business Spectrum.

Professor Samir Ghosh

EFFICIENCY ACCOUNTING IN PORTS: IDENTIFYING THE KEY-PERFORMANCE INDICATORS

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Abstract

Ports are key economic entities in any global supply chain. IMO (International maritime Organisation, 2018) estimates that world's 90 percent of trade happens through maritime route. The ports in India have not been able to feature the top 20 twenty ports in the world. The rank of the country in ease-of-doing-business (100 out of 190 countries, in the report of EoDB – 2018; PIB, 2017) and logistics-performance-index (35 as in 2016, World Bank, 2017) is not impressive. The country planners are making all attempts to improve the scenario. One such attempt is the launching of Sagarmala project. However, similar investments have not yielded right results. Hence any investment needs to be directed towards the right cause. This paper identifies the dimensions of port performance and suggests the key-performance- indicators (KPI) to evaluate the decisions taken by the port planners and future decisions required to be taken by them. The result of the analysis shows that the port needs to take 4-C approach. These are the four dimensions namely, customer, cost, contribution and climate. The KPIs against these dimensions have been suggested and an integrated KPI proposed in this paper.

Keywords: *Port, Efficiency, Dimensions, Key-Performance- Indicators (KPI), Integrated KPI*

Introduction

India's merchandise export registered a compound-annual-growth-rate (CAGR) of 8.43 percent, during the period 2006-2007 to 2015-16 (MoC, 2017). On the similar line, the imports grew at the rate of around 14 percent during the same period. About 95 per cent of India's international trade by volume and 68 per cent by value moves by sea transport (MoS, 2016).

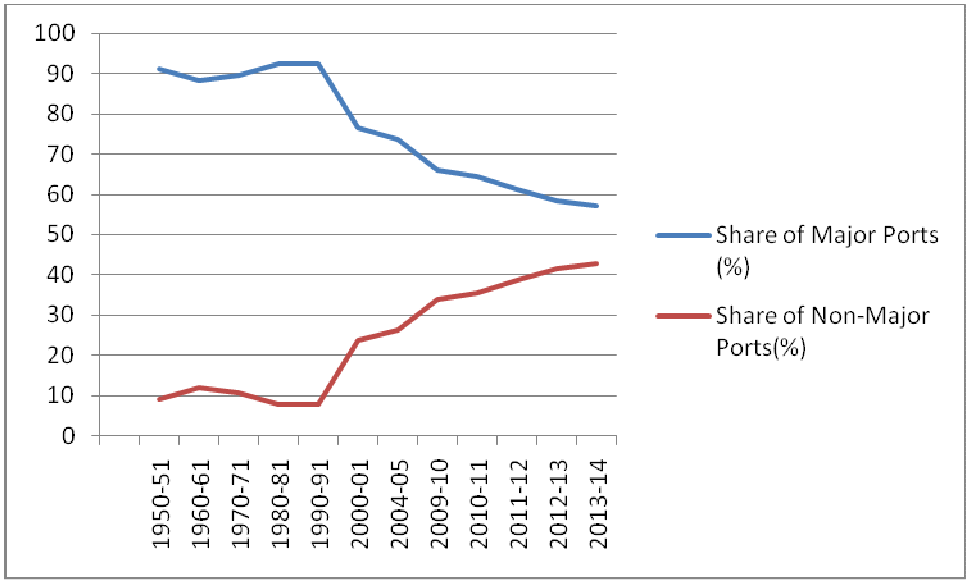
The government of India started the process of liberalization in the year 1991.Since this period the major ports of India started privatizing and outsourcing its operations. It is evident from the various privately managed terminals of major ports. For example, JNPT (Jawaharlal Nehru Port Trust) now includes two privately managed terminals, (namely, the NSICT and GTIPL) out of its three terminals. The total cargo handled by the Indian ports registered an impressive growth from 164.45 million tonnes in 1990-91 to 972.61 million tonnes in 2013-14.

However, the average turnaround time of vessels calling at major Indian ports is greater than 2 days and is higher than global average (East Coast Maritime Business Summit, 2017). The average turnaround time of vessels is an overall KPI (key performance indicator) that measures the efficiency of a port. Besides, all privately managed terminals are not performing at the level of desired level of efficiency (Dasgupta and Sinha, 2016).

The ports in India also experienced a significant growth compared to pre-liberalisation era. The total cargo handled by the major Indian ports registered an impressive growth from 164.45 million tonnes in 1990-91 to 606 million tonnes in 2015-16. However, the share of major ports has decreased from 972.61 million tonnes in 2013-14. Under the Sagarmala project the government of India plans to invest around 0.8 Million INR in next 10 to 15 years. One such project includes linking of major ports to the western dedicated freight corridor (Sagarmala, 2017).

Investments have been in the past as well, yet the growth is not in right direction. The Figure 1 below shows the drop in share of major ports from around ninety percent in the year 1950-51 to less than sixty percent in the year 2013-14. This drop is inspite the fact that the liberisation process started in early nineties in India.

Figure 1: Share of major ports vis-a-vis non-major ports of India



There is no sign of Indian ports being closer to the regional ports of Singapore or Colombo or Hong Kong or Port of Shanghai, in terms of cargo handling and efficiency. This is evident from Table 1 and Table 2. Table 1 shows port-wise container traffic in various major ports of India for the year 2012-13 whereas Table 2 shows container handled by top 10 container handling ports of the world in the year 2012. The container traffic is mentioned in TEU (Twenty Equivalent Unit), a twenty feet ISO marine container. As it is seen, the total container handled by all major ports of India (7.704 million tonnes) is far less than the container handled by the port positioned at number 10 in the world. As a consequence, most of the Indian ports are still being visited mostly by the feeder vessels or partially loaded. This involves a longer time for the entire supply chain and in turn has its effect on overall transportation costs and trade cost for the shippers.

Table 1: Major Ports of India - Port Wise Container Traffic (2012-13)

Port	Container Traffic (In ,000 TEUs)
Kolkata Dock System	463
Haldia Dock Complex	137
Paradip Port Trust	13
Visakhapatnam Port Trust	247
Chennai Port Trust	1540
Tuticorin Port Trust	476

Cochin Port Trust	335
New Mangalore Port Trust	48
Mormagao Port Trust	20
Mumbai Port Trust	48
Jawaharlal Nehru Port Trust	4259
Kandla Port Trust	118
TOTAL	7704

Source:Major Ports of India – A Profile: 2012-2013, IPA

Table 2: Top 10 Container Handling Ports of the World 2012

(In million TEUs)

Rank	Port	2011	2012
1	Shanghai	31.74	32.53
2	Singapore	29.94	31.65
3	Hong Kong	24.38	23.10
4	Shenzhen	22.57	22.94
5	Busan	16.18	17.04
6	Ningbo-Zhoushan	14.72	16.83
7	Guangzhou	14.42	14.74
8	Qingdao	13.02	14.50
9	Dubai	13.00	13.30
10	Tianjin	11.59	12.30

Source: Containerization International, 2012

This paper identifies the dimensions of port performance and suggests the key-performance-indicators to evaluate the decisions taken by the port planners and future decisions required to be taken by them.

Previous studies and recommendation

The studies, research and expert opinions have concluded so far that the factors affecting port efficiency are its size, competition – intra and inter port, technology adopted, infrastructure

in-place and management/institutional structure. Some of these factors are interdependent and region specific. The salient findings may be drawn on comparable terminals and indicators. These are summarized (Dasgupta, 2015) below.

i. The operational performance of a port is generally measured in terms of the speed with which a vessel is dispatched, the rate at which cargo is handled and the duration that cargo stays in port prior to shipment or post discharge (Kek Choo Chung, 1993).

The performance parameter that indicates this aspect is the turn round time (TRT).

ii. Container terminal efficiency declines as the terminal becomes more congested (Farrel, **2009**).

The performance parameter that manifests congestion is the pre berthing delay (PBD).

iii. The number of berths and the capital deployed are the most sensitive measures impacting performance of most container ports (Yan and Liu, 2010).

This reflects the ports infrastructure dimension, resulting in capacity addition.

iv. Vessel turnaround time is highly correlated with crane allocation as well as the number of containers loaded and discharged (Yan and Liu, 2010).

The average output per ship berth day (AOPSBD) is the parameter that reflects the impact of crane and moves per crane on vessel turnaround time.

v. Variations in port efficiency are linked to excessive regulation, the prevalence of organized crime, and the general condition of the country's infrastructure (Clark et al,2004). They found that besides distance and containerization, the efficiency of ports is also important in determining maritime transport costs.

The pre berthing delay and post operation time prior to departure or the non-working time reflect the delay owing to regulations and other factors. These time durations are reflected in TRT.

vi. Larger ports produced higher efficiencies (Martinez-Budria et al. 1999).

Port's size is reflected in terms of number of berths and/or cargo throughput per annum of the port.

vii. Large-scale production tended to be associated with higher efficiency (Wang and Cullinane 2006).

Cargo throughput and vessels handled reflect scale of production for ports.

A study published by UNCTAD (1981), though some decades back, revealed certain universal realities and provides food for thought for redefining the efficiency of the port. These may be summarized as given below:

The port performance levels will be different depending on whether ships, cargoes or inland transport vehicles are served. Thus a port, at least in theory, mayoffer a very satisfactory service to vessel operators and at the same time be judged inadequate by cargo interests or inland transport operators (or vice versa). It is obviously more likely that poor performance will not be limited to one group of port users, but rather pervade all services offered by the port. The important lesson to learn from this is that port performance cannot be assessed on the basis of a single value or measure. In fact a meaningful evaluation of a port's performance will require sets of measures relating to:

a. The duration of a ship's stay in port;
b. The quality of the cargo-handling;
c. The quality of service to inland transport vehicles during theirpassage through the port.

The complicating factor is the strong interrelationship that exists between the three sets and between the various performance measures in each. Thus it is virtually impossible and certainly inappropriate to study each of these in isolation. The factors that influence performance of terminals include:

a) Balance (or lack of balance) between the various subsystems at a terminal;
b) Motivation and quality of container terminal personnel;
c) Size and type of vessel;
d) Total number of container exchanges per call;
e) Place of terminal in "port of call" sequence;
f) Number, type and capacity of cranes employed on a vessel;
g) Stowage distribution pattern over the bays of the vessel; Stowage position in the bays (under deck/on deck).
h) Total tonnage to be discharged/loaded per vessel call;
i) Consignment sizes (average tonnage per B/L);
j) Working method selected by stevedore and quay cargo-handling company (including selection of stevedoring tools);
k) Size of the gang or degree of automation;
l) Type of lashing and unlashing of containers
m) Weather conditions;
n) "Port of call" sequence in a given range.

There should be similarity between the operations to compare the performance of a port or terminal. For example, stating that terminal A achieved 2,500 tonnes per 24 hours loading structural steel of 12 metre lengths and terminal B only 1,500 tonnes clearly marks the latter port as far less efficient than the former. However, if further evidence were provided, such as the fact that terminal A loaded in 50,000 DWT(Dead Weight Tonnage) bulk carriers with large hatch openings and terminal B in conventional 15,000 DWT vessels, and that the average B/L size for A was 20 tonnes and for B just about 1 tonne, then the superior output of A could justifiably be questioned. Further, according to the law of diminishing returns, a cut-off output figure can be determined at which the highest productivity level, in a given operational framework, isobtained."

Thus, from studies done so far we can conclude that the efficiency of the ports needs to be measured against a benchmark terminal or port operating under similar conditions. Say for example, a feeder port handling containers can be said to be performing as per desired level if it matches the best performing terminal or port operating under similar environment. Thus, container terminals of port of Kolkata should not be compared with terminals of Jawaharlal Nehru Port.

The Dimensions and KPIs (Key-Performance-Indicators)

So far the experts have emphasised on measuring efficiency of port from perspectives, namely, cargo mix, vessel mix (types of vessels and its sizes) visiting the port, infrastructure available, management style and financial dimensions. This approach does not lead to identifying the comparative performance of the port with the best in the region or world; and also suffers from the lack of integrated holistic approach. In this article a "4-C" approach has been proposed to meet the deficiency of the existing methods of measuring port performance. The 4Cs include:

i. **Customer**: Achrol, and Kotler, (1999) opines that in this century the salesperson or a marketing executive is an agent of a buyer rather being treated as the agent of the seller till recent past.

ii. **Cost:** Anderson (2006) cites strategic cost management as one of the key element to organisational success. It should be aligned and optimized keeping in view the full

value chain and all stakeholders to ensure long run sustainable profits.

iii. **Contribution** (to market share (growth) of port and profit): Rust, and .Zahorik, (1993) gives a framework that aids decision makers to identify the elements that give customer satisfaction and the how much cost should be spent not only to enhance the customer satisfaction but also ensure benefits with respect to bottom line profitability. The authors thus bring out the relationship between customer, cost and market share dimensions.

iv. **Climate**: Several authors (Bocken, et al., 2014; WWF, 2012; Randers, 2012; (Constanza et al., 1997; Stubbs and Cocklin, 2008; Porter and Kramer 2011; and business model innovations can support a systematic, on-going creation of business cases for sustainability (Schaltegger et al., 2012)).

In other words, the efficiency should be judged in terms of providing the right service (as demanded by the customer), at the right cost with the right contribution (making the port economically viable in long run) and within the right climatic balance.The "right" values to the four components, namely, customer requirement, cost, contribution and climate, may be ideally set to those maintained by the industry leaders operating under similar conditions. For example, JNPT can emulate the values set by the port of Singapore. However, the limitations of a port to match the benchmarked operation will be in terms of inputs and process it puts in. The inputs refer to the skill, machine capabilities, storage space, equipment capacity and other resources required for handling the cargo. The output is the result of the inputs and the process followed. If the resources used by the port do not match that of the benchmarked port, then the outputs cannot be compared.

Or in other words a desired level of efficiency should be defined for the given set of inputs mobilised by the port. For example, a benchmarked port uses four numbers ship-to-shore gantry cranes (per vessel) capable of lifting two containers per cycle will result in 8 containers per move. If the cycle time per crane is two minutes, then the hourly output per vessel will be 240 moves per hour. In comparison to this if a port has only two cranes with performance similar to that of the cranes of benchmarked port, it can at the most have an

output of 120 moves per hour. This does not mean that this port is less efficient compared to the benchmarked port. That is, can be said that given the resources the port is efficient. Hence, we need to look from two broad perspectives;

i. The input-output bundle of each port: whether this matches the benchmarked port.
ii. The time required by the port to achieve the desired throughput of the benchmarked port by increasing the resources leading to the maximum output level.

Thus, the premises on which the efficiency of port should be measured can be re-defined as:

i. Port efficiency should be measured in terms of resources it deploys
ii. The efficiency should be judged holistically from "4-C" perspective.
iii. Port efficiency should be measured in terms of timelag in reaching the benchmarked throughput per berth per commodity per day

Port efficiency – KPIs (The key performance indicators)

Traditionally the prime KPI for measuring the performance of the port is the turn-round-time (TRT) or also referred as the turn-around-time (TAT). It serves as the comprehensive indicator of port output as it is the sum of the pilotage time (inward and outward), pre-berthing delay (or the waiting time) and stay time at berth (comprising working as well as non-working time). However, this can be good indicator efficiency from the carriers (port customer) perspective. In view of defining the KPI from the "4-C" perspective, the KPIs can be listed as in Table 3 below:

Table 3: KPIs from the "4-C" perspective

Perspective	**Entities and/or Elements**	**KPI**
Customer	Carrier	TRT
	Shipper	Dwell Time
		Entry Time for exports
		Exit Time for imports
Cost	Carrier	Cost (Tariff) per Ton/TEU
		Cost (Tariff) per DWT

	Shipper	Cost (Tariff) per Ton/TEU
	Port	Cost (expenditure)per Ton
Contribution	Port	Revenue per Ton
Climate	Environment	Emission (ppm) per Ton

Customer of port refers to the carriers and the shippers. The shipper, intending to export, faces delay in entry to the ports. This is directly suffered by the transporter engaged by the shipper. Moreover, the port advises the cargo to be placed in the port premises some days ahead of the expected date of shipment. This is dwell time of the export cargo. Higher the dwell time of cargo in the port less is marketable or useful shelf life of the cargo. In some ports this is as high as 15 days. The ports need to be efficient to handle same day arrival and shipment of cargo, especially for cargo arriving from ICD or CFS. In case of import cargo, the dwell time at yards or storage areas should be minimizedto enhance the useful shelf life. The port should have efficient cargo tracking and tracing system and faster clearance time. The port should preferably engage in direct delivery of cargo. Hence, entry and exit time at gates, and dwell time at port premises are two important KPIs from the shipper's perspective.

The port may be efficient, but the charges may be high owing to lack of competition or over-utilisation of resources or due to its tariff structure. In most of the ports the vessel has to pay for number of hours or days it stays in the port. One of the reasons of longer stay in port may be on account of ports' low productivity leading to increase in cost per DWT or per ton or per TEU. Similarly for shipper may have to shell out additional charges due to demurrages arising out of dwell time of import cargo.

The port may provide efficient service at the lowest cost but may not survive in long run or gets forced to increase its tariff owing to its high expenses per ton or TEU or DWT and inadequate revenue per ton or TEU or DWT. In that case the port cannot be said to be efficient.

In today's world of climate conscious citizens and nations, ports cannot remain passive to the growing needs of lower carbon emission and other pollutants. It must lay down the

norms and system to control this bad output. The pollution level can be controlled by resorting to calling of ship with higher parcel load (meaning provision of adequate draft and efficient infrastructure to attract mother vessels), lower TRT , lower waiting time of inland carriers of cargo, less pollutant emitting equipment and machinery.

The Integrated KPI

The integrated key performance indicator (KPI) indicating the efficiency of the port from the"4-C" perspective is defined as sum of the ratio of all the values of port performance indicator and that of the benchmarked values. The benchmarked values can be obtained as follows:

i. The performance values of benchmarked port. In this case, however, it is required to see that the benchmarked port has similar operating conditions and matches in terms of the resources used by the port whose performance is being measured.
ii. The performance values obtained from customer survey.
iii. The benchmarked performance values obtained from optimization techniques such as Data Envelop Analysis (DEA). This is an objective approach which clearly defines the optimum performance to be achieved for a give set of inputs (resources) deployed by the port. In other words, it gives the input-output bundle that the port should strive for.
iv. The port may fix its own benchmark given its constraint to achieve the best or based on the assessed conditions of resources and best output it can provide. Say for example a port has acrane with age of 10 years and its life span is taken as15 years. The performance of a 10 year old crane may not be as that of 1 year old crane based on the principles of diminishing return. The port may then assess its output, say moves per hour, and compare the performance on the benchmarked values.

The computation of the integrated KPI is given in table 4 below. The lower the value of KPI better is the performance of the port. If the port performs as per benchmarked values the individual KPI values should lie between 0 and 1. If it exceeds 1 then the port can be said to be in-efficient with respect to the particular KPI. As regards the integrated KPI the maximum permissible value would be 10. Hence, the value of integrated KPI should vary

between 0 and10. If it exceeds 10 then the port can be said to be overall in-efficient. The lower the value of **THE INTEGRATED KPI** better is the performance of the port. This is so because if all KPIs (except Revenue) listed below increases it defeats the objectives of an efficient port. Since increase in Revenue per ton or TEU or DWT is desired, the reciprocal of this KPI is taken for the purpose of arriving at the integrated KPI.

Table 4: Computation of Individual and Integrated KPIs

KPI	**Port – Performance (PP)**	**Benchmark Values (BV)**	**Ratio of PP/BV**
TRT	TRT_p	TRT_b	TRT_p/ TRT_b
Dwell Time	$(\text{Dwell Time})_p$	$(\text{Dwell Time})_b$	$(\text{Dwell Time})_p$ / $(\text{Dwell Time})_b$
Entry Time for exports	$(\text{Entry Time for exports})_p$	$(\text{Entry Time for exports})_b$	$(\text{Entry Time for exports})_p$ / $(\text{Entry Time for exports})_b$
Exit Time for imports	$(\text{Exit Time for imports})_p$	$(\text{Exit Time for imports})_b$	$(\text{Exit Time for imports})_p$/$(\text{Exit Time for imports})_b$
Cost (Tariff) per Ton/TEU	$(\text{Cost (Tariff) per Ton/TEU})_p$	$(\text{Cost (Tariff) per Ton/TEU})_b$	$(\text{Cost (Tariff) per Ton/TEU})_p$ / $(\text{Cost (Tariff) per Ton/TEU})_b$
Cost (Tariff) per DWT	$(\text{Cost (Tariff) per DWT})_p$	$(\text{Cost (Tariff) per DWT})_b$	$(\text{Cost (Tariff) per DWT})_p$ / $(\text{Cost (Tariff) per DWT})_b$
Cost (Tariff) per Ton/TEU	$(\text{Cost (Tariff) per Ton/TEU})_p$	$(\text{Cost (Tariff) per Ton/TEU})_b$	$(\text{Cost (Tariff) per Ton/TEU})_p$ / $(\text{Cost (Tariff) per Ton/TEU})_b$
Cost (expenditure)per Ton	$(\text{Cost (expenditure)per Ton})_p$	$(\text{Cost (expenditure)per Ton})_b$	$(\text{Cost (expenditure)per Ton})_p$ / $(\text{Cost (expenditure)per Ton})_b$
Revenue per Ton	$1/(\text{Revenue per Ton})_p = R_p$	$1/(\text{Revenue per Ton})_b = R_b$	R_p/ R_b
Emission (ppm) per Ton	$(\text{Emission (ppm) per Ton})_p$	$(\text{Emission (ppm) per Ton})_b$	$(\text{Emission (ppm) per Ton})_p$ / $(\text{Emission (ppm) per Ton})_b$
Integrated KPI		Total	Sum (of Values above)

Conclusion

The key performance indicators should encompass all dimensions of port operations and management. All businesses are customer driven hence this paper identifies the primary customers. These are the carriers and the shippers. The KPI associated with the customers of port vary and as such the general notion of measuring port efficiency in terms of turnaround time alone is not complete. It is obvious that serving customers in the right direction should lead to right contribution (to growth and profit) provided it provides the service at the right cost. Therefore this paper identifies the key performance indicators associated with cost and contribution. Any good output may be associated with bad output too. For example, increase in port activities will lead to increase in ship calls and entry and exit of vehicles. This is likely to lead to increase in emission levels and hence the ports nee to monitor the disruption in climate. In other words the ports should aim at doing sustainable business.

Individual key performance indicators will enable the port authorities to take the right corrective and investment decisions. However, the stakeholders may like to rank the ports with a single indicator. This study proposes an integrated KPI for ranking the ports. This can supplement the LPI where clarity about ports' efficiency and deficiency is missing. The paper emphasiseson a holistic approach in arriving at the new way to measure efficiency of the port.

This work can be extended to identify the correlation and association between the key performance indicators and propose a causal model to port planners for policy simulation and policy formulation.

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PRE-MERGER PERFORMANCE MEASURES OF STATE BANK OF INDIA AND ITS ASSOCIATE BANKS USING DATA ENVELOPMENT ANALYSIS

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Abstract

As all the remain five associates banks of State Bank of India (SBI) has been merged to SBI with effect from April 1, 2017 as per direction of the regulator. In this regards a study has been conducted by the researchers whether the before merger all these associates and SBI are operating at efficiency level or at inefficiency level. Using data envelopment analysis (DEA), with three output variables (deposit, advance and total income) and four input variables (number of bank branches, number of ATMs, total assets and gross non-performing asset), the present study aims to measure the extent of overall technical efficiency (OTE), pure technical efficiency (PTE), and scale efficiency (SE) of SBI and five associates' banks. Different DEA have been run, for each year during the period 2011-2016 and another with the average data of the selected five years period. The results reveal that SBI, State Bank of Bikaner & Jaipur (SBBJ), State Bank of Hyderabad (SBH), State Bank of Patiala (SBP) and State Bank of Travancore (SBT) attained the OTE score equal to 1 and lie on the efficient frontier under constant return scale (CRS) assumption based on CCR model and also attained the PTE score equal to 1 and lie on the efficient frontier under variable return scale (VRS) assumption based on BCC model. The group State Bank of Mysore (SBM) only attained the OTE and PTE score equal to 1 and lie on the efficient frontier during 2012-13. So we conclude that before mergers took place most of the associate banks of SBI operated at efficient level. These mergers will decrease unhealthy competition between SBI and its associate banks, mitigate the risk and can better focus on defaulter.

Key Words: State Bank of India, Merger, Date Envelopment Analysis

1.1 INTRODUCTION

State Bank of India (SBI), with a 200 year history, is the largest commercial bank in India in terms of assets, deposits, profits, branches, customers and employees. The origins of State Bank of India date back to 1806 when the Bank of Calcutta (later called the Bank of Bengal) was established. In 1921, the Bank of Bengal and two other banks (Bank of Madras and Bank of Bombay) were amalgamated to form the Imperial Bank of India. In 1955, the Reserve Bank of India acquired the controlling interests of the Imperial Bank of India and SBI was created by an act of Parliament to succeed the Imperial Bank of India.

Majority of the mergers in India have been crafted to bail out weak banks to safeguard depositors' interest and to protect the financial system. The report of the Committee on Banking Sector Reforms (the Second Narasimham Committee, 1998), however, discouraged this practice. It recommended mergers among strong banks, both in the public and private sectors and even with financial institutions and non-banking financial companies. Before the recent mergers with five associates and Bharatiya Mahila Bank (BMB), State Bank of Saurashtra amalgamation took place in August 2008 while State Bank of Indore merged with the parent in 2010. Following the merger, the SBI group consists of SBI and five associate banks, State Bank of Bikaner and Jaipur, State Bank of Travancore, State Bank of Patiala, State Bank of Mysore and State Bank of Hyderabad which have been merged on April 1, 2017 (Table 1.1.1).

Table 1.1.1 Mergers of SBI Associates

	Year	Associate Banks
Recent Mergers	2017	State Bank of Bikaner & Jaipur State Bank of Hyderabad State Bank of Mysore State Bank of Patiala State Bank of Travancore
Previous Mergers	2008 2010	State Bank of Saurashtra State Bank of Indore

Source: RBI

The group has an extensive network; with over 25000 plus branches and 58, 688 ATMs in India and its combined assets base reach at □ 37 lakh crore. Their status of deposit, advance, total income, number of branches, number ATMs, total assets and gross NPA of SBI and

associates as shown in the **Table 1.1.3**. The table shows that there are minimal growths of different parameters of all the associate banks except SBI has found with higher growth rate.

There are many reasons behind mergers of banks. The most crucial concern is management of risk. The financial industry of every country is expected to make a proper risk analysis to balance the deposit and credit portfolios. Mergers can diversify these risks to a significant extent. Synergy effects, drastic increase in market competition, geographical diversification, innovation of new financial products, cost efficiency, advanced technology, improvement in operational efficiency, tax shields and financial safeguards and consolidation of regional financial systems and national financial systems are the other major reasons for which banks are going for mergers.

In the present study we analyze the performance of SBI and five associate banks before the merger took place with the data period of March 2002 to March 2016 according to availability of data. To analyze the performance we have used DEA model of Charnes, Cooper and Rhodes (1978) and Banker, Charnes and Cooper (1984). First efficiency scores (OTE, PTE and SE) have been measured of the six banks for the years 2011-12, 2012-13, 2013-14, 2014-15 and 2015-16 with the selected variables. Also OTE, PTE and SE have been measured with the average value of five years data of the identical variables.

1.2 LITERATURE REVIEW

The application of DEA can be found in several services and industries since its inception in 1978 (by Chames, Cooper and Rhodes). In the public sector and private sector, this technique has been used widely to measure the efficiency. Here, we surveyed the literature of the application of DEA to acknowledge that the DEA has been used as a performance assessment tool.

Elyasiani and Mehdian (1995) investigated the trends in technical efficiency and technological change for small and large US commercial banks during 1979-86 based on the intermediation approach. Although the efficiency measures declined over this period, small banks emerged as more efficient in the deregulated regime.

Saha and Ravisankar (2000) in their analysis an attempt was made to quantify the relative efficiency using DEA in the form of a total weighted output by total weighted input. The results of the analysis indicate that, except few exceptions, the PSBs have in general improved their efficiency scores over the years 1992 to 1995.

Sathye (2003), measure the productive efficiency of Indian banks using DEA and the study shows that the mean efficiency score of banks in India compares well with the world mean

efficiency score and the efficiency of private sector commercial banks as a group is, paradoxically lower than that of public sector banks and foreign banks in India.

Angelidis and Lyroudi (2006) investigated the productivity of 100 large Italian banks for the period 2001-2002 by using DEA.

Das and Gosh (2006) examined the performance of commercial banks in India during post reform period 1992-2002. Medium sized PSBs were found to be performing at higher level of technically efficiency.

Kumar and Gulati (2008), evaluate the extent of OTE, PTE, and SE in Indian public sector banking industry using cross-sectional data for 27 banks in the year 2004/05.

Valadkhani and Moffat (2009) measured the technical and pure technical efficiencies of ten major financial institutions in Botswana for each year during the period 2001-2006 using DEA.

Chander and Chandel (2010) analyzed the financial efficiency and viability of HARCO Bank and found poor performance of the bank on capital adequacy, liquidity, earning quality and the management efficiency parameters.

Feroze (2012) employed DEA to assess the efficiency of DCCBs in Kerala during 2005-2009. The empirical results of the study revealed that the level of efficiency in DCBs was 74 per cent and the magnitude of inefficiency was 26 per cent. 6 DCBs obtained efficiency score equal to 1 and formed the efficiency frontier.

Burgstaller (2013) in his studies considered total funds, fixed assets and total costs as inputs and outputs produced comprise total loans, other earning assets and non-interest income to measure the efficiency in regional banking market through DEA.

Sinha and Jain (2015) in their study uses owned funds, deposits, borrowings and employee cost as inputs, and advances, investments and other income as outputs to measure the potential gains from merger of SBI with its associates.

The above studies show that there have been widely used of DEA applications to measures the efficiency of financial institutions or banks by considering different parameters as input variables and output variables. Such rapid growth and widespread acceptance of the methodology of DEA is testimony to its strengths and applicability.

1.3 OBJECTIVES OF THE STUDY

The main objective of this paper is to examine the efficiency of SBI and the five associate's banks before merger on April 1, 2017 by using popular DEA model. BCC model and CCR

model of DEA have been used to measure and compare the performance of SBI and five associate's banks with three output variables and four input variables.

1.4 STUDY PERIOD

For the present analysis we have collected the required data of five years during April 2011 to March 2016.

1.5 DATA AND METHODOLOGY

Data has been sourced from various Annual data of Reserve Bank of India. To analyze the efficiency of SBI and five associates banks CCR model under CRS assumption, named after its developers Charnes, Cooper, and Rhodes (1978) and BCC model under VRS assumption, named after its developers Banker, Charnes and Cooper (1984) have been used. Banks on the efficiency frontier have an efficiency score of 1. Lower scores indicate inefficiency. MaxDEA 5.2 package has been used to measure the performance of banks through DEA.

1.6 VARIABLES OF THE STUDY

Three outputs have been selected as deposits, advance and total income. The total income is the sum of interest and non-interest income. The other two outputs, deposits is the amount of deposits balance and advance is the amount of advance outstanding. To get the three outputs we have selected four inputs viz. number of branches, number of ATMs, total assets of banks, gross non-performing assets. According to Saha and Ravisankar (2000) the performance of any institution is often evaluated in terms of its efficiency in the use of its resources. Their input variables are number of branches, number of employees, establishment expenditure, non-establishment expenditure (excluding interest expenditure), and output variables are deposits, advances, investments, spread (i.e., interest income minus interest expenditure), total income, interest income, non-interest income and working funds. Sathye (2003) in his analysis used interest expenses, non-interest expenses, deposits and staff members as input variables and interest income, non-interest income and net loans as output variables to measures the performance of banks. Here, we would like to assert that the choice of the variables followed two criteria: relevance and availability.

1.7 RESULTS AND DISCUSSIONS

To increase the validity in present analysis, the researcher examines the assumptions of the "isotonicity" relationship (Golany and Roll, 1989) by the correlation among the selected input and output factors. The isotonicity relationship express a rise in any input should not

results in a loss in any output. The correlation matrix results as presented in Table 1.1.2 does not violet the isotonicity assumptions.

Table 1.1.2: Correlation among the Input and Output Factors

Variables	Deposit	Advance	Total Income	Branch	ATM	Total Asset	Gross NPA
Deposit	1						
Advance	0.99999	1					
Total Income	0.99999	0.99999	1				
Branch	0.99988	0.99992	0.99992	1			
ATM	0.99976	0.99979	0.99971	0.999716	1		
Total Asset	0.99999	0.99999	0.99998	0.999870	0.99979	1	
Gross NPA	0.99981	0.99988	0.99983	0.999826	0.99962	0.99986	1

Source: Researcher's calculation

In DEA, technical efficiency (TE) can be viewed from two perspectives. First, input-oriented TE focuses on the possibility of reducing inputs to produce given output levels. And the Second one, output-oriented TE considers the possible expansion in outputs for a given set of input quantities.

In a number of studies, analysis have tended to select input-oriented models because many organizations or institutions have particulars orders to fill and, hence, the input quantities appear to be the primary decision variables, although this argument may not be as strong in all industries or institutions. In some cases, the firms may be given a fixed quantity of resources and asked to produce as much output as possible. In this case, an output orientation would be more appropriate. Essentially, one should select the orientation according to which quantities (inputs or outputs) the managers have most control over (Kumar and Gulati, 2008). In the present study we have considered input-oriented model.

The TE measure corresponding to CRS assumption represents overall technical efficiency (OTE) which measures inefficiencies due to the input/output configuration and as well as the size of operations. The efficiency measure corresponding to VRS assumption represents pure technical efficiency (PTE) which measures inefficiencies due to only managerial underperformance. The relationship SE = OTE /PTE provide a measure of scale efficiency. Scores are 1 for efficient banks (on the frontier), and lower for relatively inefficient ones.

Table 1.7.1: Showing Year-wise Overall Technical Efficiency (OTE), Pure Technical Efficiency (PTE) and Scale Efficiency (SE) Scores of SBI and Associates

DMUs	2011-12			2012-13			2013-14			2014-15			2015-16		
	OTE	PTE	SE	OTE	PTE	SE	OTE	PTE	SE	OTE	PTE	SE	OTE	PTE	SE
SBI	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
SBBJ	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
SBH	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
SBM	0.992	1.000	0.992	1.000	1.000	1.000	0.991	1.000	0.991	0.983	1.000	0.983	0.996	1.000	0.996
SBP	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
SBT	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Source: Researcher's own calculation

The efficiency scores of all the six selected banks are given in the Table 1.7.1. The Table 1.7.1 provides OTE, PTE and SE scores of all the six banks of SBI and associates for the years 2011-12, 2012-13, 2013-14, 2014-15 and 2015-16. The results obtained by employing the CCR model on each year data reveal subtle fluctuations in the efficiency scores of SBM. It can be easily observed from the results that SBI, SBBJ, SBH, SBP and SBT are quiet consistent in their performances in the five years period of study. These five banks emerged as the best performing banks in all the five years period of the study. Whereas, SBM has been able to plays a benchmark only once (2012-13) during the years of the study. It is noteworthy to mention that the overall technical efficiencies obtained by employing CCR model can further be decomposed into pure technical efficiencies and scale efficiencies. The pure technical efficiencies obtained by employing BCC model on the data of five years of six SBI and associates and finally the scale efficiencies are obtained by taking the ratio of OTE over PTE.

Table 1.7.2: Results of CCR and BCC Model of SBI and Associates

DMUs	CCR Model (OTE)	BCC Model (PTE)	SE	Return to scale
SBI	1.0000	1.0000	1.0000	Constant returns to scale
SBBJ	1.0000	1.0000	1.0000	Constant returns to scale
SBH	1.0000	1.0000	1.0000	Constant returns to scale
SBM	0.9963	1.0000	0.9963	Increasing returns to scale
SBP	1.0000	1.0000	1.0000	Constant returns to scale
SBT	1.0000	1.0000	1.0000	Constant returns to scale

Source: Researcher's own calculation

Table 1.7.2 presents the results obtained with the average data of five years of all the input and output variables during the period under study. The columns labeled CCR and BCC indicate the efficiency scores of the SBI and associate banks with constant returns to scale and variable returns to scale. The table depicts that according to the CCR model SBI and four associate banks (except SBM) are on the efficiency frontier and have an efficiency score of 1. SBM has lower score under CCR model which indicates inefficiency. The table also depicts that under BCC model all the selected banks are on the efficiency frontier have an efficiency scores of 1. The five overall efficient banks are SBI, SBBJ, SBH, SBP and SBT of the selected six banks. They have the equal OTE and PTE and thus presenting constant returns to scale (CRS). Only SBM is inefficient bank present increasing returns to scale (IRS) that can increase the scales to effectively improve efficiency. The SBM have the PTE score equal to 1 while SE score is less than 1. A DMU may be scale inefficient if it is smaller than the most productive scale size i.e., not taken the full advantage of IRS.

1.8 CONCLUSION

This piece of research adopts an input-oriented DEA efficiency methodology to assess the performance of SBI and its five associate banks before the merger took place. Based on the CCR model under CRS assumptions, SBI and other four associate banks (except SBM found efficient only in the year 2012-13) have found efficient in all the five years of study and with the average data. Again based on BCC model under VRS assumption we have found all the six banks have been found efficient. The overall efficient banks have the equal OTE and PTE and thus presenting constant returns to scale. So, based on the results of CCR and BCC model with average data of the five years study period we may conclude that before the merger took place SBI, SBBJ, SBH, SBP and SBT are the five overall efficient banks. And SBM can reduce inputs by at least 0.37 per cent and still generate the identical level of outputs or increase the level of output to 1.004 (1/0.9963) times with the same level of inputs. These mergers will decrease unhealthy competition between SBI and associates and mitigate the risk. Now the SBI can better focus on defaulter. Many people had availed multiple finances from different associates. With these mergers they can be bought under one roof which makes recovery easier.

One important weakness of the study is the non-inclusion of other financial parameters, viz., net profit, operating and other expenses. Incorporation of such factors could well be the agenda for further research. Further study may be conducted of SBI in pre-merger and post-merger period with other scheduled commercial banks.

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Table 1.1.3: Input and Output details in DEA Analysis of SBI and Associates

(□ Billion)

Bank	Year	Deposit	Advance	Total Income	Branch (No.)	ATM (No.)	Total Assets	Gross NPA
SBI	2012	10,436	8,676	1,209	15,064	22,141	13,355	397
	2013	12,027	10,456	1,357	15,796	27,175	15,662	512
	2014	13,944	12,098	1,549	16,820	43,515	17,927	616
	2015	15,768	13,000	1,750	17,192	45,502	20,481	567
	2016	17,307	14,637	1,918	17,869	49,724	22,591	982
SBBJ	2012	616	492	69	1,044	1,057	725	17
	2013	721	575	82	1,135	1,060	860	21
	2014	739	642	90	1,249	1,554	909	27
	2015	842	695	99	1,378	1,843	1,023	29
	2016	940	729	106	1,445	1,954	1,103	36
SBH	2012	987	771	117	1,504	1,371	1,183	20
	2013	1,133	899	134	1,586	1,584	1,361	32
	2014	1,195	957	144	1,722	2,321	1,415	58
	2015	1,302	1,051	151	1,848	2,404	1,545	54
	2016	1,372	1,111	156	2,073	2,380	1,646	66
SBM	2012	502	398	56	788	802	604	15
	2013	570	449	66	831	853	672	21
	2014	616	495	69	995	1,107	740	28
	2015	661	520	77	1,064	1,334	795	21
	2016	706	540	79	1,118	1,416	830	36
SBP	2012	794	629	89	1,131	843	985	19
	2013	887	738	103	1,202	954	1,086	25
	2014	897	759	110	1,290	1,279	1,141	38
	2015	927	786	114	1,380	1,437	1,167	44
	2016	1,070	822	116	1,438	1,507	1,310	68
SBT	2012	715	553	75	911	929	860	15
	2013	846	675	93	1,045	965	1,016	17
	2014	893	694	106	1,153	1,352	1,053	31
	2015	911	687	106	1,181	1,602	1,056	24
	2016	1,011	655	108	1,247	1,707	1,145	32

Source: RBI

VALIDITY OF BEHAVIOURAL MODELS ON DIVIDEND PAYOUT: A CASE OF INDIAN BANKING SECTOR

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Abstract

The present study would like to review different famous behavioural models of dividend policy in Indian banking sector. Accordingly, panel data regression technique has been applied on twenty two listed banking companies from banking sector for banking sector for period 2003-04 to 2012-13. The study reveals that in banking industry, dividend policy is best explained by explicit depreciation model proposed by Brittain and Indian banks are regular dividend payers and avoid dividend reduction.

Introduction

In order to frame an effective and satisfying payout policy managers have to consider the desires of different stakeholders of the organization and the need of the organization. The desires of the stakeholders are of paramount importance in framing dividend policy. Managers put forward their response to these desires as well as to financial considerations of the organization through the dividend policy. So framing of dividend policy is a kind of managerial behaviour because this policy is nothing but a reaction to various factors put forward by different but related interested groups. Researchers ascribed different terms like dividend puzzle, dividend tangle etc. to present the problems in decision making related to this area. The present study would like to review different famous behavioural models of dividend policy in Indian banking sector.

Empirical Exposure on Corporate Dividend Policy

There exist a number of empirical studies in the field of dividend policy in both the developed countries and emerging economies like India. Few notable contributions in this arena are mentioned below.

Michaelsen (1961) has criticized Dobrolvosky's hypothesis. According to him Dobrolvosky's hypothesis has been constructed by emphasizing on determinants on consumer savings. However, consumer savings and corporate retention are not same. Thompson and Walsh (1963) have conducted a study where they have taken a poll of management personnel covering as many as one hundred and ninety five large industrial organizations. The study has thrown ample light on managerial attitude on different aspects of dividend decision making. The study has provided evidences in support of Lintner's and Darling's findings. This study has concluded in favour of the belief that firms maintain a stable dividend policy. The study of Sastry (1966) over the period 1955-60 on Indian corporate sector has pointed out that Lintner's findings are important in Indian corporate sector. However, the study reveals that gross profit after tax is better than net profit after tax as explanatory variable. Fama & Babiak (1968) has conducted an empirical study on partial adjustment model of Lintner and the extended work by Brittain by considering 392 industrial firms over the period of 1946-1964. Lintner's model has remained superior in explaining the dividend behaviour of the companies than other models. Krishnamurthy and Sastry (1974) have studied dividend behavior of public limited companies in India consisting of firms belonging to cotton and textile, jute, sugar, paper and paper board, chemicals, engineering and cement sector. The study has clearly showed that investment expenditure and external finance have negligible impact on dividend policy of the firms taken up for the study. In their study, Lintner's hypothesis significantly explains the dividend behaviour of the firms under study. Dhameja (1978) has examined the dividend policy of Indian companies according to different groups with respect to size, industry, growth and control. It has been found that the decision variables used in Lintner's model are better predictors of dividend policy than other decision variables. However Growth of firm has been found as a significant determinant of dividend policy and has a negative correlation to dividend payout. Ojha (1978) has tried to analyse dividend behaviour of Indian firms under cotton textile industry. The study supports Lintner's hypothesis in explaining the dividend behaviour of the said companies. The study has also showed that dividend payout had got a significant bearing on stock prices. Djarrya & Lee

(1981) have provided an integration model instead of accepting Lintner's partial adjustment model and Britain's cash flow model. They have suggested a more generalized model of dividend behaviour and their study has established a relationship between dividend payments, earnings and some other firm specific factors. Khurana's study (1985) has inferred that Lintner's model explains dividend behaviour more precisely as compared to other available models. The study has also analysed and indentified the significance of economic predictors viz. stock prices, liquidity position of the firm, investment need etc. on the dividend decision to be taken by corporate management and it has been found that these variables have a direct and significant impact on dividend setting process. This study has considered 68 companies listed in Bombay Stock Exchange belonging to different sectors over a fifteen year period (1962-63 to 1976 - 77). Sharma (1986) has studied the dividend policy of Indian companies and the findings of the study have revealed that Lintner's model fairly explains the dividend behaviour of half of the firms studied both for short and long time horizon. The study has also found support for signalling effect of dividend decisions. In this empirical study dividend policy has been considered as a primary decision variable and it has significantly influenced the investment & financing decisions taken by the management. Agarwal (1987) has conducted a study on Indian automobile sector over two decades (1959-60 to 1978-79) and it has been found that Lintner's Model can not provide a satisfactory explanation of the dividend behaviour for Indian automobile industry. In this study level of sales and profit have come out as prime predictors for explaining dividend decisions. Lang and Litzenberger (1989) have conducted an empirical study to investigate the impact of free cash flow, as described by Jensen, on dividend payouts and they have concluded that dividend payouts can significantly be explained by free cash flow. However, they have extended Jensen's hypothesis and renamed it as "The overinvestment hypothesis". Jaidev (1992) has conducted an empirical study on manmade fibre sector over the database of a decade(1978-79 to 1987-88). The study has experienced the relevance of Lintner's model in dividend policies followed by the companies. Here current profit has become a significant factor in deciding dividend payments. However, preceding year's dividend has been found as an insignificant estimator of current dividend payout. The study has also found relevance of Brittain's hypothesis and findings of the study has substantiated that cash flow is a more stable and consistent predictor of dividend payments than book profits.

Dempsey, laber & Rozeff (1993) have conducted a study on US firms and they have found only modest support for Lintner's model. Their study has revealed dividend policy varies across industries. The study conducted by Mahapatra and Sahu (1993) has experienced that Brittain's cash flow model explains the dividend policies of 90 companies considered for the study over a period of 1977-78 to 1988-89. However, the study has also reported that neither Lintner model nor Darling model can provide a satisfactory explanation of dividend decisions taken by the management of the sample companies. Mishra and Narender (1996) have tried to explain the dividend behaviour of Indian state owned enterprises (SOEs) belonging to Manufacturing, petroleum and service sectors over a ten year period including both pre and post liberalisation era. (1984-85 to 1993-94), based on the data published by DPE (Department of Public Enterprises). The findings have supported Lintner's model and lagged dividend has emerged out as the most significant predictor of dividend decisions. Jain and Kumar (1997) have conducted a study on 96 listed companies on BSE over the period 1984-1995 and their study discloses that even in the post-liberalization era Lintner's model explains the dividend behavior of the firms quite well. Benartzi *et al.* (1997) have commented that Lintner's model remained the best description of the dividend setting process available. Baker & Powell (1999) have conducted an empirical study and their study has supported validity of Linter's model in USA. Anand (2004) has conducted a survey on 81 chief financial officers' (CFOs) from a broad cross section of 474 private sector and top 51 public sector firms to analyze the factors influencing dividend decisions of corporate India. The findings of the study are also in tune with the findings of Lintner's study. The study has also found support in favour of signalling potential of dividend policy decisions.

Pandey & Bhat (2004) have conducted the first study on dividend behaviour of Indian companies under monetary policy restrictions. The study has revealed that macroeconomic policies have an impact on corporate financing decisions. Their findings disclose that restricted monetary policies have caused about a 5%-6% reduction in dividend payout ratios. According to their study, monetary policy restrictions have affected the availability and cost of external fund relative to internal fund. They have extended Lintner's framework to examine the impact of these restrictions on dividend payout. George and Kumudha (2006) have conducted a study on dividend policy of Hindustan Constructions Company Ltd. with special reference to Lintner's model and has analyzed seventy-eight years (from 1926-27 to 2003-04) dividend history of the company. The study has revealed that dividend decision of a firm always get influenced by the

requirement of future capital and the amount of equity capital. The analysis of dividend history of the company has showed the applicability of Lintner's model. However, it has also been found that Lintner's argument regarding a tendency to increase their dividend rate over a period of time has not been supported by the study. This study has mentioned the importance for a firm to maintain steadily growing dividend rate. Bodla *et al.* (2007) have made an attempt to explain the dividend behaviour of Indian Banking industry by examining the Lintner's model and Brittain's model along with the Brittain's segregated cash flow model including capital expenditure as a variate. In this study a cross sectional analysis has been done for the period 1996-2006. Lintner's model has performed best in explaining the dividend behaviour of banks. The study also revealed Public sector banks follow a more stable dividend policy than private sector banks. Kaushik (2009) has examined all the major theoretical frameworks of dividend behaviour in Indian context in an empirical study after economic liberalization over a period of fifteen years (1989-90 to 2003-04). The findings suggest that even in the liberalised era Lintner's model and Brittain's model provides fair explanation to Indian corporate dividend behaviour. However Dobrolvosky's and Darling's model have not performed well in explaining the dividend decisions of the sample firms considered under the study. Das *et al*. (2010) have conducted an empirical study on Indian mining and minerals sector over a decade (1999-2009) and the findings of the study has substantiated the findings of Linter's version and Brittain's version even in the matured phase of economic liberalization in India. Sudhahar and Saroja (2010) have examined the dividend policy of Indian banking industry over a period of ten years(1997-98 to 2006-07). This study is divided into two parts. In the former part of the study the researchers tested the applicability of Lintner's model, Brittain's model and Darling's model. The findings of the study suggest that Brittain's explicit depreciation model provides best explanation of dividend behaviour of Indian banking industry. In the later part of the study they have tried a develop a model considering nine predictors such as firm size in terms of sales volume, previous year dividend payout ratio, return on investment, current ratio, dividend tax, corporate tax etc. of current dividend payout ratio. From the results of this regression model the researchers concluded that previous year dividend payout ratio, firm size in terms of sales volume and return on investment are important predictors of dividend payments by Indian banks. Acharya and Mahapatra (2012) have assessed the validity of Lintner's model on the dividend behaviour of selected commercial banks of India included in the SENSEX. The study has disclosed that

Lintner's econometric model finds it's suitability only in case of ICICI bank.

Objectives

The present work has the following objectives:

1. To test empirically different theoretical models *viz.* Dobrolvosky Model, Lintner's Model, Darling's Model, Brittain's Cash Flow Model, Brittain's explicit depreciation model / Segregated Cash Flow Model related to dividend behaviour of select Indian banks
2. To estimate the target payout ratios and adjustment factors for different Indian banking sector.

Hypotheses

The testable hypotheses are

1. Indian bank management follows Dobrolvosky's model for dividend setting process.
2. Lintner's Model explains the dividend behaviour of Indian banking sector.
3. Darling's Model of dividend policy is valid in the context of banking sector in India.
4. Brittain's cash flow model successfully predicts the dividend behaviour of Indian banks
5. Brittain's explicit depreciation model is relevant for analysing dividend behaviour of Indian banks.

Database

In order to examine the well known behavioural models of dividend policy in Indian context panel data have been used for banking sector as this sector consists of some banks which pay regular and high dividends to their shsreholders. However, we have excluded such companies that either do not have financial data for period of study i.e., from the year 2003-04 to 2012-13 or have not declared any dividend for more than three years under reference of this study. So the final data set comprises of 22 listed banking companies from banking sector.

Data have been collected for these sample banks on total cash dividends paid to equity shareholders in a particular financial year which is inclusive of interim, final and any other special cash dividends, equity dividends paid in the preceding year, earnings after tax and depreciation, earnings after tax and depreciation for the previous year, net worth of the bank at the commencement of each year, net worth of the company at the end of each year , capital

employed of the at the beginning of each year, capital employed of the bank at the close of each year, depreciation and amortizations made in each year, net sales for the current year, net sales of the company during last two years, cash flow (profit after tax + depreciation & amortization).

For the purpose of our study all the data taken on the variables mentioned in the above section have been scaled to avoid heteroskedasticity and outlier problems. After scaling of variables finally our database contains data on the following variables which have been used for the estimation of different models

(i) Equity dividend in a particular year / Average net worth

where average net worth has been calculated by using simple arithmetic mean of opening net worth and closing net worth of that particular year,

(ii) Profit after tax in a particular year / Average net worth ,

(iii) Equity dividend in a particular year / Average net worth,

(iv) Closing Operating asset - Opening Operating asset / Opening Operating asset

where operating asset has been represented by the capital employed,

(v) Equity dividend in a particular year / Net sales in that particular year,

(vi) Profit after tax in a particular year / Net sales in that particular year,

(vii) Equity dividend in previous year / Net sales in a particular year,

(viii) Profit after tax in previous year/ Net sales in a particular year,

(ix) Depreciation and amortizations in a particular year / Net sales in that particular year ,

(x) Net sales in a particular year - Net sales before two years / Net sales in that particular year, and

(xi) Cash flow in a particular year/ Net sales in that particular year.

where Cash flow = (profit after tax + depreciation)

Methodology

To check the applicability of different behavioural models of dividend policy in banking sector we have considered the five famous models *viz*. Dobrolvosky Model, Lintner's Model, Darling's model, Brittain's cash flow model and Brittain's segregated cash flow model that explain the dividend behaviour of corporate world across the globe. After scaling of variables the following modified versions of the said well-known models have been used for the present study.

- DOBROLVOSKY'S MODEL (1951)

$(DA)_{it} = \alpha_i + \beta_1 (PAT/ANW)_{it} + \beta_2 (D/ANW)_{i,t-1} + \beta_3 ((OA_t - OA_{t-1})/OA_{t-1})_{it} + \mu_{it}$.....(1)

❖ LINTNER'S MODEL (1956)

$(DS)_{it} = \alpha_i + \beta_1 (PS)_{it} + \beta_2 (DS)_{i,t-1} + \mu_{it}$……..……..(2)

❖ DARLING'S MODEL (1957)

$(DS)_{it} = \alpha_i + \beta_1 (PS)_{it} + \beta_2 (PS)_{i,t-1} + \beta_3 (DPS)_{it} + \beta_4 (\Delta S_{t-2} S)_{it} + \mu_{it}$ …….(3)

❖ BRITTAIN'S CASH FLOW MODEL(1964)

$(DS)_{it} = \alpha_i + \beta_1 (CFS)_{it} + \beta_2 (DS)_{i,t-1} + \mu_{it}$ ……(4)

❖ BRITTAIN'S SEGREGATED CASH FLOW MODEL(1966)

$(DS)_{it} = \alpha_i + \beta_1 (PS)_{it} + \beta_2 (DS)_{i,t-1} + \beta_3 (DPS)_{it} + \mu_{it}$…….....…..(5)

where

$(DA)_{it}$ = (Equity dividend in period t/ Average net worth in period t)$_{it}$ where *i* is the company and *t* is the time,

$(PAT/ANW)_{it}$ = (Profit after tax in period t/ Average net worth in period t)$_{it}$ where *i* is the company and *t* is the time,

$(D_t/ANW)_{it-1}$ = [Equity dividend in period (t-1) / Average net worth in period (t-1)]$_{i,t-1}$ where *i* is the company and *t-1* is the time,

$((OA_t - OA_{t-1})/OA_{t-1})_{it}$ = [Operating asset (capital employed) expansion in period t/ Operating asset (capital employed) in period (t-1)]$_{it}$ where *i* is the company and *t* is the time,

$(DS)_{it}$ = (Equity dividend in period t/ Net sales in period t)$_{it}$ where *i* is the company and *t* is the time,

$(PS)_{it}$ = (Profit after tax in period t/ Net sales in period t)$_{it}$ where *i* is the company and *t* is the time,

$(DS)_{it-1}$ = [Equity dividend in period (t-1) / Net sales in period (t-1)]$_{it}$ where *i* is the company and *t* is the time,

$(P_{t-1}S)_{it}$ = [Profit after tax in period (t-1)/ Net sales in period (t-1)]$_{it}$ where *i* is the company and *t* is the time,

$(DPS)_{it}$ =(Depreciation in period t/ Net sales in period t)$_{it}$ where *i* is the company and *t* is the time,

$(\Delta S_{t-2}S)_{it}$ = (Change in sales in period t over the preceding two years/ Net sales in period t)$_{it}$ where *i* is the company and *t* is the time,

$(CFS)_{it}$ = (Cash flow in period t/ Net sales in period t)$_{it}$ where *i* is the company and *t* is the time; where Cash flow = Profit after tax + Depreciation,

β_1, β_2, β_3, and β_4 are the coefficients of the independent variables,

μ_{it} = The error term.

To test the suitability of the above mentioned methods, parameters of the models have been estimated first by pooled OLS method. Then the same parameters have been estimated by using fixed effect model. F- test has also been used for the fixed effect model. After that the parameters of the same model have been estimated with a random effect model and Breusch Pagan Lagrange multiplier test has been used to choose between random effect model and pooled OLS method. Besides, we have compared the outcomes of the random effect model with the fixed effect model by employing Hausman specification test. To check stationarity in the panel data unit - root test has also been applied.

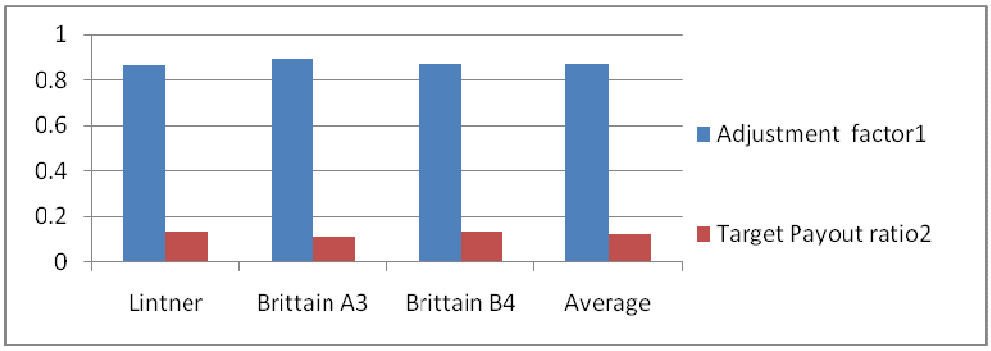
Analysis and Interpretation

To make a comparative analysis of the outcomes of different models for Indian Banking sector panel data regression equations for different theoretical frameworks have been presented in Table 1. From the Table 1 it can be reported that none of the dividend policy models considered for the purpose of study explains dividend policy of Banking sector with very high satisfaction. However, the industry's dividend policy is best explained by explicit depreciation model proposed by Brittain. The predictors considered under this model can explain about 59% variation in dividend payment of Indian Banking industry. Lintner's Model and Dobrolvosky's model have also explained the dividend behaviour of Indian Banking sector approximately equally. Lintner's model has explained about 58% and Dobrolvosky's model has explained about 57% variation of dividend payout for this industry. The regressors of Darling's model explain about 48% variation in dividend payment for the sector. Brittain's cash flow model has turned out to be the least satisfactory model for explaining the dividend policy of Indian banking sector. It explains only 21% variation in dividend payout for this sector. Fixed effect model has remained best suited for regression analysis under all the behavioural models that have been used under this study. So there is a lack of homogeneity in dividend payments by different banking companies under this industry.

Current profit and lagged dividend have remained the most important determinant of dividend policy followed by the current cash flow of the organisation. Operating asset expansion and capital consumption during current period have also significantly affected the dividend decisions

of the organisation. However, these variables affected dividend decisions of the companies by a lower magnitude. The analysis finds negative correlation between dividend payments and operating asset expansion implying that the industry prefer dependence on own funds needed for further expansion. change in the level of sales as an individual determinant has not become relevant for analysing the dividend behaviour of this banking industry. Fixed effect model has become the best selection for carrying regression analysis in this industry irrespective of the dividend policy models used for this study. So the management decisions regarding dividend policy significantly differed across different companies of the industry. Though the constant term is positive and significant but the values of these terms are very low. It signifies that Indian banks are regular dividend payers and avoid dividend reduction.

Figure 1: Graphical Representation of Adjustment Factors and Target Payout Ratios for Banking Sector



Notes: (1) Adjustment factor = [1-coefficient of (DS) $_{i,t-1}$*]*

(2) $Target\ Payout\ ratio = \frac{Coefficient\ of\ (PS)_{it}}{Adjustment\ factor}$

(3) Brittain A ⟶ *Brittain's Cash Flow Model*

(4) Brittain B ⟶ *Brittain's Explicit Depreciation /Segregated Cash Flow Model*

From the Figure 1 and Table 2 it can be clearly noticed that the average target payout ratio i.e., percentage of net profit to be distributed in the form of dividend, is 12% and dividend payments by Indian banks are highly fluctuating which is revealed by the high average adjustment factor (0.87 on an average).

Table 1: Different Behavioural Models of Dividend Policy for Banking Sector

Name of the Model	Adjusted R^2	Estimated Panel Data Regression Model	Type of Model
Dobrolvosky	0.5742 * [18.33]	$(DA)_{it}$= 0.04*+ .05**$(PAT/ANW)_{it}$+0.35*$(D/ANW)_{i,t-1}$ -.05**$((Oa_t - OA_{t-1})/OA_{t-1})_{it}$ (10.28) (2.84) (5.88) (-2.82)	Fixed Effect
Lintner	0.5870 * [53.92]	$(DS)_{it}$= .013* + .12* $(PS)_{it}$ + .14* $(DS)_{i,t-1}$ (3.79 (8.93) (3.96)	Fixed Effect
Darling	0.4817 * [23.35]	$(DS)_{it}$ = .013* +.12* $(PS)_{it}$ + .001 $(PS)_{i,t-1}$ + .083**$(DPS)_{it}$ +.001 $(\Delta S_{t-2}S)_{it}$ (3.62) (8.86) (1.39) (2.06) (0.11)	Fixed Effect
Brittain A[3]	0.21* [21.11]	$(DS)_{it}$ = .013* + .097* $(CFS)_{it}$ + .113* $(DS)_{i,t-1}$ (3.96) (9.40) (3.26)	Fixed Effect
Brittain B[4]	0.5937 * [37.12]	$(DS)_{it}$ = .01* + .11* $(PS)_{it}$ + .13* $(DS)_{i,t-1}$ + .06* $(DPS)_{it}$ 3.23) (8.99) (3.63) (1.59)	Fixed Effect

*Notes: Notes: Terms within square bracket denote F values and terms within parentheses denote t-values. * implies significant at 1% level, ** implies significant at 5% level and *** implies significant at 10% level.*

Table 2: Target Payout Ratio and Adjustment Factors for Banking Sector as Estimated by Different Behavioural Models and Their Average

Name of the Model	Adjustment factor[1]	Target Payout ratio[2]
Lintner	0.86	0.13
Brittain A[3]	0.89	0.11
Brittain B[4]	0.87	0.13
Average	0.87	0.12

Notes: (1) Adjustment factor = [1-coefficient of $(DS)_{i,t-1}$]

(2) $Target\ Payout\ ratio = \frac{Coefficient\ of\ (PS)_{it}}{Adjustment\ factor}$

(3) Brittain A ⟶ *Brittain's Cash Flow Model*

(4) Brittain B ⟶ *Brittain's Explicit Depreciation /Segregated Cash Flow Model*

Conclusion

It may be concluded from the study that in banking industry, dividend policy is best explained by explicit depreciation model proposed by Brittain. Lintner's Model, Darling's model and Dobrolvosky's model have explained the dividend behaviour of Indian Banking sector moderately. Brittain's cash flow model has turned out to be the least satisfactory model for

explaining the dividend policy of Indian banking sector. The management decisions regarding dividend policy significantly differed across different banks of the industry and Indian banks are regular dividend payers and avoid dividend reduction.

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IDENTIFICATION OF FACTORS AFFECTING DIVIDEND: A STUDY OF FMCG COMPANIES IN INDIA

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Abstract

Dividend payout decision is an important agenda of any concern. Dividend policy is one of the most important and controversial issue in corporate finance decisions. It is important because it is a repetitive decision that involves large amounts of cash outflow and closely related to most capital structure and budgeting decisions the firm makes. The objective of the study is to determine the relationship between the dividend payout ratio with profitability, liquidity, leverage, FSZ and FGR. For this study data has been collected only from secondary sources for the period from 2013-2017. Secondary data has collected from published annual reports and data base software. For this study choosing one dependent variable dividend payout ratio and eight independent variables return on assets, return on equity, earning per share, CR, QR, DER, FSZ and FGR to analyze. The analysis is made with the help of STATA-11. To examine the relationship between dividend payout ratio with other variables correlation, panel data regression analysis has been applied. The study reveals that the result of Random Effect Model, there have six factors viz. return on assets, earning per share, CR, DER, FSZ and FGR having a significant relationship with the dividend payout ratio of the selected FMCG companies in India.

Keywords: Dividend Payout Ratio, Fixed Effect Model, Random Effect Model, Hausman Test.

1. Introduction

Dividend payout decision, one of the important aspects of company's financial policy, is not an independent decision. Rather, it is a decision that is taken after several considerations. There are various factors that influence a firm's dividend policy. Dividend policy decides to distribute the profit and the managers have to make a choice between whether to use earning after tax to reinvest or pay out dividends to shareholders. In term of corporate, reserves considered as the lowest cost of funding source, are kept to sustain capital for company in reinvesting, expanding

scale, and approaching a larger project for development of business networks. However, this accumulation of a huge proportion of retained earnings also makes company's shares become less attractive as shareholders look forward to making incomes from dividend which is tax free income. Thus, dividend policy decisions play a vital role in the field of finance. This study aims to identify the factors that drive corporate dividends policy in India.

Dividend has two important aspects and is an effective element of a company's investment. On the one hand, higher are the dividends paid out, the lower are the business' internal resources for performing investment projects, while retaining has an impact on the stock price. Thus, managers should always equilibrate between different interests of shareholders so that they could utilize investment profitable opportunities and would pay required cash dividends for some shareholders. Therefore, a dividend decision by corporations' managers is very sensitive and important as well. There is no doubt that when deciding about income, managers should consider their outcomes. This is why many corporations have a certain purpose in mind while making decisions about dividends. However, it is without question that when managers make dividend decisions they inevitably face constraints such as liquidity problems, tax considerations and so on. Therefore, it is important to understand the factors that affect dividend policies so that managers can take decisions on the basis of these considerations. In the present study, the researcher uses econometric models to identify the factors that affect payout ratio of businesses during 2013-2017.

2. Literature Review

Some important relevant studies are mentioned which have been reviewed before the following study are taken up. Ahmed (2015) explores the impact of liquidity and profitability on the dividend policy in the UAE banking sector and to examine variations between Islamic and conventional banks prior and subsequent to the financial crisis. The paper reveals that the dividend payout ratio has a significant and positive correlation with liquidity but negative and insignificant correlation with profitability. Ahmed and Murtaza (2015) emphasize the determinants of dividend payout and analyze the effect of change in dividends over the future company growth in Pakistan. The result reveals that that there is a significant effect of liquidity, earning per share, leverage, FSZ and dividend payout ratio in all the selected sectors, viz. oil, cement, energy, and sugar. Ajanthan (2013) reveals a strong and positive relationship between dividend payout and firm profitability among listed hotels and restaurant companies in the

Colombo Stock Exchange. Demirgunes (2015) stumbles on the determinants of target dividend payout ratio of BIST listed firms operating in cement manufacturing industry during the period of 2002-2012. The researcher finds profitability, growth and corporate taxation significantly affect dividend payout ratio negatively whereas risk and market expectations have a statistically significant and positive effect. Fitri et al. (2016) scrutinize the effect of return on assets, debt to equity ratio, assets growth and dividend payout ratio on listed companies at Jakarta Islamic Index during 2009-2014 which shows a positive and significant effect of return on asset and dividend payout ratio in a year before to Dividend Payout Ratio. Gill et al. (2010) look at the determinants of dividend payout ratios by examining the same for the American service and manufacturing firms. The research reveals that the dividend payout ratio is the function of profit margin, sales growth, debt-to-equity ratio, and tax. Hasan et al. (2015) explore the relationship between dividend payout ratio and profitability of a firm. The empirical result shows that there is a negative impact of dividend payout ratio on next year earnings of a firm. Kingwara (2015) examines the effect of factors that influence dividend policies in companies operating in Kenya. The researcher observes that dividend payout ratio is impacted negatively by the growth rate, debt ratios and FSZ but positively by earnings, market-to-book ratio and retained earnings to total assets ratio. Musiega et al. (2013) examine the determinants of dividend payout ratio for non-financial firms listed on Nairobi Securities Exchange. The investigation finds that return on equity, current earnings and firms' growth are significantly and positively correlated to dividend payout, business risk and size significantly. Njuguna and Jagongo (2015) scan the factors considered by management of quoted companies in Kenya in determining the dividend payout ratios. The results indicate that the current and future profitability of a company, cash flow position, financing requirements and the availability of profitable investments are the main considerations in the dividend payout decision of a firm. Rafique (2012) reveal the insight dynamics for determination of dividend payout with reference to non-financial firms listed in the KSE100 Index. The research points out that corporate tax and firm's size have a significant relationship with dividend payout ratio. Rehman and Takumi (2012) examine the determinants of dividend payout ratio in the largest stock exchange of Pakistan which reveals that profitability, debt to equity and market to book value ratios are found to be the significant determinants of dividend payout ratio. Sanjari and Zarei (2015) investigate the factors that influence corporate dividend policy of financial and non-financial firms on companies listed in Tehran stock

exchange. The consequences indicate that the variable size and liquidity of the company has a significant positive impact on the dividend is payable. Thafani and Abdullah (2014) examine the collision of dividend payout on corporate profitability in the manufacturing companies listed on Colombo Stock Exchange in Sri Lanka. The outcomes of the study expose that there is a significant association between dividend payout and corporate profitability in terms of return on assets, return on equity and earnings per share.

3. Research gap:

On the basis of literature reviewed, it is observed that there is no specific study found as related to the relationship between dividend payout ratio with profitability, liquidity, leverage, firm size and firm growth during the post-crisis period of the FMCG companies in India.

4. Objective of the Study

The objective of the study is to establish the relationship among dividend payout ratio and profitability, liquidity, leverage, firm size and firm growth of FMCG companies in India.

5. Hypotheses of the Study

In conformity with the above stated objectives, the following testable null hypothesis has been formulated:

H_0: There is no significant relationship among dividend payout ratio with profitability, liquidity, leverage, firm size and firm growth.

6. Research Design

Research design means a way to systematically solve a research problem. It comprises a series of steps that are taken together to provide a roadmap for carrying out a research project.

Sample size and selection: The empirical work is based on a study of those FMCG companies which are listed in the National Stock Exchange (NSE). Hence, the sample size is fifteen and the study period is from 2013 to 2017.

Data Type: The entire study is based on secondary/quantitative data collected from the money control website (www.moneycontrol.com).

Research methods applied: Based on the objectives of this study, the researcher uses descriptive statistics, correlation and panel data regression analysis.

The following table depicts the variables taken for the study.

Table 1: Variables Defined

Variables	Variables Name	Abbreviations	Definition
Dependent Variable			
Dividend Payout Ratio	Dividend Payout Ratio	DPR	Dividend Payment / Net Profit
Independent Variables			
Profitability	Return on Assets	ROA	EBIT / Total Assets
	Return on Equity	ROE	Net Profits / Shareholders' Equity
	Earnings Per Shares	EPS	Earnings Available to Equity Shareholders / No. of Equity Shares
Liquidity	Current Ratio	CR	Current Assets / Current Liabilities
	Quick Ratio	QR	Quick Assets / Quick Liabilities
Leverage	Debt Equity Ratio	DER	Long-term Debt / Shareholders Equity
Size	Firm Size	FSZ	Natural log of Total Assets
Growth	Firm Growth	FGR	(Current Year Sales – Previous Year Sales) / Previous Year Sales

Source: Compiled by the researcher

7. Analysis and Findings

In descriptive analysis of table data, mean, median, maximum, minimum, standard deviation, skewness and kurtosis have been computed. From the minimum table column highest value is the ROA and lowest is DER whereas in maximum column higher value in EPS and the lower in DER. But the average value is maximum in case of ROA which is the main component of any concern though there is a higher standard deviation for majority of the variables considered in the study.

Table – 2: Descriptive Statistics

	Min.	Max.	Mean	Std. Dev.	Skewness	Kurtosis
DPR	1.00	64.00	13.940	15.881	1.856	2.654
ROA	9.15	119.07	125.981	178.670	4.041	19.458

ROE	0.00	142.01	31.956	25.358	2.499	7.460
EPS	2.97	164.10	32.202	35.070	2.230	4.835
CR	0.46	2.26	1.233	0.463	0.399	-0.688
QR	0.22	3.06	0.843	0.577	2.104	4.764
DER	0.00	0.77	0.090	0.159	2.313	5.362
FSZ	3.00	4.74	3.820	0.463	0.569	-0.578
FGR	0.00	35.84	15.519	7.65446	0.340	1.042

Source: Compiled by Author

Correlation Analysis

Correlation analysis is used to check for the multicollinearity among the dependent and control variables employed in the study.

Table – 3: Correlation Matrix

		DPR	ROA	ROE	EPS	CR	QR	DER	FSZ	FGR
DPR	Pearson Correlation	1								
	Sig. (2-tailed)									
ROA	Pearson Correlation	.522**	1							
	Sig. (2-tailed)	.000								
ROE	Pearson Correlation	.135	-.218	1						
	Sig. (2-tailed)	.246	.060							
EPS	Pearson Correlation	.543**	.627**	-.007	1					
	Sig. (2-tailed)	.000	.000	.955						
CR	Pearson Correlation	-.261*	.053	-.320**	-.141	1				
	Sig. (2-tailed)	.024	.649	.005	.229					
QR	Pearson Correlation	-.196	-.050	-.199	-.123	.673**	1			
	Sig. (2-tailed)	.092	.669	.087	.293	.000				
DER	Pearson Correlation	-.021	.117	-.152	.132	-.157	-.006	1		
	Sig. (2-tailed)	.857	.316	.192	.260	.177	.961			

FSZ	Pearson Correlation	.009	-.128	.421**	-.027	-.038	.190	-.256*	1	
	Sig. (2-tailed)	.937	.274	.000	.818	.749	.103	.027		
FGR	Pearson Correlation	-.095	-.192	.228*	-.141	.059	.099	-.268*	.609**	1
	Sig. (2-tailed)	.416	.099	.049	.227	.613	.399	.020	.000	

Source: Compiled by Author

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Based on the above correlation matrix table, it is observed that there is no multi-collinearity problem among the variables taken in the study since all the coefficient values are less than 0.80. Therefore, the study finds that the independent variables have no strong correlation between them and thus the researcher tests the model in the next section.

Panel regression analysis

After running the fixed effect model on STATA software, the result in table-4 gives the results of panel data analysis.

Table – 4: Results of Fixed Effect Model

Fixed-effects (within) regression	Number of observation = 75
Group variable: company code	Number of groups = 15
R-sq: within = 0.7133	Observation per group: min = 5
between = 0.3564	avg = 5.0
overall = 0.4348	max = 5
corr(u_i, Xb) = -0.3549	F(6,54) = 22.39
	Prob > F = 0.0000

Dividend Per Share	Coefficient	Std. Error	T	p > I t I	[95% Conf. Interval]	
ROA	0.04154	0.01009	4.12	0.000	0.06178	0.02129
ROE	-0.02463	0.05647	-0.44	0.664	-0.13784	0.08857
EPS	0.30852	0.02803	11.01	0.000	0.25233	0.36471
C. Ratio	-7.62813	5.75785	-1.32	0.191	-19.17192	3.91565
Q. Ratio	2.25631	6.38869	0.35	0.725	10.55225	15.04686
D/E Ratio	18.25795	6.67182	2.74	0.008	31.63413	4.88177

FSZ	21.52604	11.1943	1.92	0.350	43.96926	0.91718
FGR	0.50038	0.22001	2.27	0.942	0.05891	0.94186
_cons	96.18541	43.15607	2.23	0.030	9..66271	182.7081
sigma_u	12.164098					
sigma_e	5.2611311					
Rho	0.84241205 (fraction of variance due to u_i)					
F test that all u_i=0: F(14, 54) = 7.31 Prob > F = 0.0000						

Source: Compiled by Author

After running the random effect model on STATA software, the result in table-5 gives the results of panel data analysis.

Table – 5: Results of Random Effect Model

Random-effects GLS regression	Number of observation = 75
Group variable: company code	Number of groups = 15
R-sq: within = 0.6982	Observation per group: min = 5
between = 0.8030	avg = 5.0
overall = 0.7555	max = 5
corr(u_i, X) = 0 (assumed)	wald chi2(6) = 165.26
	Prob > chi2 = 0.0000

Dividend Per Share	**Coefficient**	**Std. Error**	**z**	**p> I z I**	**[95% Conf. Interval]**	
ROA	0.03891	0.00957	4.07	0.000	0.05766	0.02016
ROE	0.00470	0.04907	0.10	0.924	-0.09147	0.10087
EPS	0.32103	0.02615	12.28	0.000	0.26978	0.37229
C. Ratio	8.92565	4.39259	2.03	0.042	17.53497	0.31633
Q. Ratio	3.68530	4.34862	0.85	0.397	-4.83784	12.20844
D/E Ratio	16.37632	6.06167	2.70	0.007	28.25696	4.49568
FSZ	4.06339	4.34457	0.94	0.050	12.57858	4.45180
FGR	0.01185	0.16178	0.07	0.027	-0.30523	0.32894
_cons	28.35984	17.24803	1.64	0.100	-5.44567	62.16535
sigma_u	6.9849131					

sigma_e	5.2611311
Rho	0.63802748 (fraction of variance due to u_i)

Source: Compiled by Author

Table – 6: Results of Hausman Test

Hausman Fixed Random
Chi2 (6) = 8.15
Prob>chi2 = 0.2274

Source: Compiled by Author

Based on the above table (no. 6), it is observed that the Hausman test prefers the random effect model to the fixed effect model as the p value (0.2274) of the chi-square (8.15) lies above the significance level of 0.05. The value chi-square of the random effect model is 165.26 with p value of 0.000. The model is good fit as the respective p value falls under the significance level of 0.05. In this model, independent variables explain around 75.55% of the movement in the dependent variable. Comparing the p-value of each independent variable, the author sees that six variables including return on assets, earning per share, CR, DER, FSZ and FGR are statistically significant with dividend per share. The coefficients of the random effect model reveal that for 1% change in return on assets, earning per share and DER, dividend payout ratio directly changes by 3.89%, 32.10% and 1637.63% respectively. The effect of return on assets, earning per share and DER is also statistically positively significant even at 1% level of significance. Similarly, with 1% change in CR, FSZ and FGR, dividend payout ratio directly changes by 892.57%, 406.34% and 1.19% respectively. The effect of CR, FSZ and FGR is also statistically positively significant at 5% level of significance. Therefore, the random effects model shows that dividend payout ratio is directly positively influenced by profitability, liquidity, leverage, FSZ and FGR.

8. Conclusion

The study examines the determinants of dividend payout ratio for quoted FMCG companies in India. This empirical research makes an investigation into the effect of factors that theoretically impact dividend policy of companies. The study is made on fifteen listed FMCG companies in India during 2013 to 2017. The random effect model which is used to regress the panel data shows that there are six factors which are namely, ROA, EPS, CR, DER, FSZ and FGR which have a significant relationship with the dividend per share. Thus, dividend payout ratio is directly

influenced by profitability, liquidity, leverage, FSZ and FGR of the selected companies study in India. This finding is pertinent for finance managers as this can guide them to take such dividend decisions.

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Annexure:

List of Companies-

1. Hindustan Unilever Ltd.
2. ITC
3. Nestlé India
4. Dabur India Ltd
5. Asian Paints (India)
6. Britannia Industries Ltd.
7. Marico Industries Ltd.
8. Colgate-Palmolive (India) Ltd.
9. Gillette India Ltd.
10. Godfrey Phillips
11. Johnson & Johnson
12. Wipro
13. Godrej Consumer Products Ltd
14. Emami
15. Pidilite Industries

CORPORATE SUSTAINABILITY AND ITS RELATIONSHIP WITH FINANCIAL PERFORMANCE: SELECTED REVIEWS AND EMPIRICAL FINDINGS

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Abstract

Corporate Sustainability is an emerging concept in today's business world. There has been a vast increase in the studies pertaining to Corporate Sustainability. Academicians from all over the world are becoming more and more interested and concerned about Sustainability and its dimensions. The non-shareholder stakeholders are not only interested in the economic and financial parameters of the company but also remain concerned towards the reporting of activities that have an impact on the environment and society at large. Thus, this paper has made an attempt to assemble the observations and findings of a few conceptual as well as empirical studies on Corporate Sustainability.

Keywords: *Corporate Sustainability, Corporate Financial Performance, Sustainability Reporting*.

Introduction

Corporate Sustainability is emerging as an important and relevant concept in today's world. The corporate world is becoming more and more aware of the environment they are existing in and also their duty towards it. The stakeholders, particularly the non-shareholder stakeholders are no longer concerned only about the economic aspects of the companies but also about the social and environmental activities with which the companies are dealing. The firms are engaging themselves into environmental and social practices and are also reporting about it for the knowledge of the stakeholders and the other users. Though this concept of the firm's responsibility towards the society has been in the minds of the concerned thoughtful persons from a very long time, but this term gained immense popularity and importance when it is first coined in the Brundtland Report[1], also known as '*Our Common Future*' of the World

[1] Named after the Norwegian Prime Minister Gro Harlem Brundtland, who was chairman of the WCED.

Commission on Environment and Development (WCED, 1987), accepted after ratification by the UN General Council. The report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The WECD report also states the three components of sustainable development to be environmental protection, economic growth and social equality. Several studies and researches were done thereafter to gain further in-depth knowledge about the term and its importance in the corporate field and in various parts of the world. The concept has thus covered a long way from the WCED seminar, now various assessment methodologies and indexes have been developed to measure sustainability and various relationships have been established with the performances of the firm. Sustainability focuses on the economic, environmental and social aspect of the firm and reports its activities towards these dimensions for the sake of various stakeholders. Thus, a lot of frameworks have been developed to report Sustainability such as Global Reporting Initiatives, Dow Jones Sustainability Index, Kinder-Lyndenburg-Domini (KLD) ratings, etc..

In Indian context, the concept of sustainable development is still in embryonic stage as the reporting is voluntary and is only done by a handful of companies. Various measures and steps have been taken in the direction of sustainability, such as, Corporate Social Responsibility Reporting being made mandatory for the qualifying companies[2], development of S&P ESG India index[3], Business Responsibility Reporting being made mandatory for the qualifying firms[4], etc. but Sustainability reporting still remaining voluntary in which the companies inform their stakeholders regarding the firm's activities that have an impact upon the environment or society as well as upon their economic performance.

Still there remains difference in the way Sustainability is adapted and measured worldwide. Neither any standard format nor a set of determinants have been advocated for Sustainability.

[2] As per section 135 of Indian Companies Act, 2013 it is mandatory for firms, who come under purview of the specified financial thresholds, to spend 2% of average net profit made during three preceding financial years on CSR activities.

[3] S&P ESG India index comprises of 50 Indian companies, derived from largest 500 companies listed on NSE, that demonstrate a high level of commitment to meeting environmental, social and governance standards.

[4] SEBI (Listing Obligations and Disclosure Requirements) Regulations 2015, prescribed top 100 companies as per NSE/BSE every year to publish Business Responsibility Reporting as a part of their annual report which has been extended to top 500 companies vide amendment dated Dec 22, 2015.

Companies report sustainability as per their convenience; they only report those indicators with which they are comfortable. Thus several studies have resulted in various ways while measuring the relationship of Sustainability reporting with various corporate parameters. This paper has made an attempt to assemble the observations and findings of a few conceptual as well as empirical studies on Corporate Sustainability. The study has been made in both foreign and Indian context so as to gain knowledge about the status of Sustainability development in both the developed countries and developing countries like India.

This paper has attempted to make a review of the studies being done on Corporate Sustainability in both foreign and Indian context. A total of 19 papers has been studied, 10 foreign and 9 Indian, to get a summarized view of the progress being done on the field of Sustainability. The papers have been arranged chronologically to get a trend view of the same.

Foreign studies:

Knoepfel, I. (2001) has attempted to do an in-depth study on one of the major sustainability index *i.e.,* Dow Jones Sustainability Group Index (DJSGI). The DJSGI comprises the top 10 % companies from the Dow Jones Sustainability Global Index Universe, which in turn comprises the largest capitalized companies in the world. The selection in the DJSGI is done by monitoring the companies throughout the year for their corporate sustainability performance. The assessment of the companies is done through corporate sustainability assessment questionnaire, submitted documentation, policies and reports, and publicly available information. For the industry group, industry specific criteria are identified. Then both the general and industry specific criteria are equally weighted for sustainability risk and opportunities. Then the companies are scored on a scale and are given their rating reports.

Michelon, G. and Parbonetti, A. (2010) have examined the relationship between sustainability on one hand, and board composition in terms of presence of community influential members and board structure on the other, by analyzing the US and European companies. The sample consists of 57 companies from Dow Jones Sustainability Index (DJSI) and a control group of 57 companies from Dow Jones Global Index (DJGI) for the year 2003. They have applied the Ordinary Least Squares (OLS) technique to predict the test results. The study reveals that the presence of community influential members in the board is positively associated with the

sustainability disclosures of the company. It also reveals that there is a moderately significant relationship between the presence of a Corporate Social Responsibility (CSR) committee and a CSR director with the social disclosure of the firm. It also says that there is no effect of the board composition or CEO duality on the sustainability disclosures.

Chiong, P.T.N. (2010) has attempted to investigate the level of disclosure of sustainability practices and its individual components by different companies in different regions and different industries using the GRI G3 guidelines. He has also investigated the relationship between economic, social and environmental disclosures and financial performance of the companies, which is measured by Return on Equity, Debt to Equity and Revenue growth. In this study, the companies are classified into regions as per United Nations Statistics Divisions (UNSD) (2009), which divides the world into geographic regions or sub-regions, and the companies are divided into industries as per Industry Classification Benchmark (ICB), which is created by Dow Jones & Company and Financial Times Stock Exchange (FTSE), and which classifies companies into 10 industries which is further classified into 19 super-sectors and then into 41 sectors and again into 114 sub-sectors. For the study of 146 companies, from which 7 from Africa, 15 from America, 23 from Asia, 96 from Europe and 5 from Oceania, companies are selected on the basis of audited Sustainability reports following G3 guidelines for the financial year 2007. The findings of the study suggest that the disclosure level of the companies can be improved as 2 out of 9 economic performance indicators, 11 out of 30 environmental performance indicators and 15 out of 40 social performance indicators are not disclosed by the companies. It also shows that there is no significant difference in sustainability disclosures between the regions as well as between the industries, although there is a difference in the environmental performance disclosures being made in different industries. It also shows that there is no significant relationship between sustainability disclosures and Return on equity as well as Debt to equity ratio and Revenue growth. In case of economic performance indicators, social performance indicators and environmental performance indicators, it is found that neither of them has any significant relationship with Return on equity and Revenue growth, but they have a significant relationship with Debt to equity ratio.

Burhan, A.H.N. and Rahmanti, W. (2012) have attempted to identify the association between the corporate sustainability reports and the company's financial performance as well as the influence

of individual components of sustainability *i.e.,* environmental disclosure, social disclosure and economic disclosure in the financial performance of the company. The study is done on 32 non-financial companies producing sustainability reports and listed continuously on the Indonesian stock exchange for the period from 2006 to 2009. The sustainability report and its individual components are measured as per the performance indicator given in the Global Reporting Initiative (GRI) guidelines and the financial performance is measured in form of Return on Asset (ROA). The finding of the study is that the sustainability reports have an association with the company's financial performance. However, the results also provide that environmental disclosure and economic disclosure do not influence the firm's financial performance, only social disclosure has a significant influence on the financial performance of the firm.

LU, W.L. (2013) has studied 400 large U.S. companies to explore the relationship among corporate sustainability, corporate governance and corporate financial performance. The hypothesis is that the board size, board independence, CEO duality and presence of a female director have positive association with corporate sustainability performance. Four attributes of Board of Directors (BoD), *i.e*., board size, board independence, CEO duality and presence of female director, are taken to represent Corporate Governance. Accounting- based and market-value based measures such as Tobin's Q, market value of shares (MV), return on assets (ROA), and return on equity (ROE) are used to measure the corporate financial performance. The Kinder-Lydenberg-Domini (KLD) rating is used to describe the corporate sustainability performance by using its 6 dimensions, *i.e.,* Community, Employee relations, Environment, Product quality, Human rights, and Diversity. The finding of the study shows that there is a positive association between attributes of BoD and corporate sustainability performance. It also shows stronger corporate governance being linked with higher corporate sustainability performance. Another finding is the positive association of corporate sustainability performance with corporate financial performance in both 1 and 2 year lag. The study thus shows that corporate governance contributes additional value to the firm and the impact of lagged corporate sustainability performance on corporate financial performance is higher for firms with stronger corporate governance.

Marti, C.P., Rovira-Val, M.R. and Drescher, L.G.J. (2013) have examined the effect of corporate social strategies, both short term and long term, on the corporate financial performance by

studying the firms listed in the Stoxx Europe 600 index and Stoxx Europe Sustainability index for the period from 2007 to 2010. The study uses accounting-based and market-based measures such as ROA, ROE and Tobin's Q to look into corporate financial performance whereas the corporate social performance (CSP) is measured by taking into account the dummy variable formed as per the Stoxx Europe Sustainability Index. Certain control variables such as industry type, country, firm size, financial slack measured in terms of current ratio and free cash flows, risk, R&D investment and year are also used. The finding of the study reveals that the implementation of a CSR strategy, the level of economic development of the country and firm size would significantly determine the ROE of the firm. CSP variable is positively and significantly related to the ROE of companies. Thus, companies which indulge into more socially responsible activities improve the shareholders' return and incur higher corporate financial performance. Expenditure on research and development negatively affects return on assets (ROA) and financial slack affects Tobin's Q of the company.

Montiel, I. and Delgado-Ceballos, J. (2014) have reviewed literature from the year 1995 to 2013 to see the evolution of corporate sustainability and its dimensions, and how the term has appeared in various journals with how much usage. The authors attempted to find the journals in which the term "Corporate Sustainability" has been more used by different scholars and the various ways to measure Corporate Sustainability in the corporate world. The major finding of this paper is that practitioners and specialized social responsibility/sustainability/environmental management (SEM) journals pay more attention to corporate sustainability than the general management ones. The paper has also identified that corporate sustainability is mostly measured as a three dimensional aspect - social, economic and environment. It also studies the three major measures of corporate sustainability, *i.e.*, KLD indices, DJSI and GRI reporting. The study compares among the tools and finds out the difference among them as such- corporate governance is used as economic indicator in DJSI but not in GRI and DJSI is concerned with attracting and developing employees, engaging stakeholders and reporting social issues while GRI is more concerned with broader human rights and impact on society.

Pandey, V. (2014) has divided this paper into parts. The first part deals with the relationship between the business sustainability and corporate financial performance (CFP) of the large U.S. based firms. Business sustainability is measured from the entry and exit in the Dow Jones

Sustainability Index (DJSI) and the financial performance is measured by the stock market returns. The study has considered the period of 2002-2011, in which there are 196 additions and 133 deletions. The selection has resulted in a negative drift in the stock prices and no significant result of index deletion was found, hence the overall impact has not been clear. The second part deals with the review of the development of corporate sustainability reporting and its assessment methodologies and proposing a model of sustainability performance. The author divides the review into 3 phases: First phase (the principle of legitimacy), Second phase (corporate social responsiveness) and Third phase (corporate social performance). The author studies four major assessment methodologies: DJSI, GRI, KLD and also Pacific Sustainability Index (PSI). After reviewing the assessment methodologies, an inventory of major sustainability initiatives and key performance indicators was prepared. Environmental performance is categorized into air, water, energy, waste and miscellaneous items, and social performance categorized into community, employee, diversity, human rights and miscellaneous items, and economic performance into product, corporate governance, animal welfare and miscellaneous categories.

Rego, A., Cunha, M.P.e. and Polo´nia, D. (2015) have tried to resonate how corporate key-persons from different firms, in context of Portugal culture predict Corporate Sustainability, its definitions and it facilitators. A semi-structured interview has been conducted to record the response of 72 CEOs, who are selected in terms of diversified sectors in which their organizations operate, their organization size, and their tenure as board members. Semiotic clustering, sometimes also described as the Gioia methodology, is used to analyze data and to build meaning. The study finds that the CEOs have different definitions for corporate sustainability but they resemble corporate sustainability as company's continuity and long term orientation and its adaptability to the environment. The CEOs also differ in the choice of the relevant stakeholders of sustainability, as more than 40% CEOs has cited planet/environment, employees, and shareholders/profits but the other stakeholders such as state, suppliers etc. are not considered. The study also reveals that the most important leadership tasks for developing corporate sustainability is setting direction, creating alignment, and maintaining commitment and also monitoring the activities of organization and its environment. The leadership characteristics cited by the CEOs for fostering sustainability are leading through a mobilizing vision, stimulating and energizing people and leading by example.

Dienes, D., Sassen, R. and Fischer, J. (2016) have made a systematic review of papers on sustainability reporting to address the field and find the determinants of drivers of sustainable reporting. The authors have studied a total of 316 synopses, out of which 48 addresses the determinants of sustainable reporting. The authors have collected papers from four major databases which are EBSCO Business Source Complete, Emerald Insight, ECONIS and Web of Science, by using 32 keywords for the search. The findings reveal that firm size is used as a determinant in 18 studies, profitability in 17 studies, capital structure in 8 studies, media visibility in 4 studies, corporate governance structure in 16 studies, ownership structure in 12 studies, and firm age measured by number of years since the firm's inception in 3 studies.

Indian Studies:

Saxena, M. and Kohli, A.S. (2012) have attempted to study the effect of Corporate Social Responsibility on Corporate Sustainability, defined in terms of firm's financial performance, in Indian banking industry. The authors have measured financial performance in terms of Profit after Tax (PAT) and Earning per Share (EPS), and have taken some control variables such as size of the firm in terms of assets and age of the firm. CSR ratings given by Karmayog have been used. The authors have looked into 14 banks, 7 private and 7 public banks, for a period from 2007 to 2010. The study provides us with the result that PAT and EPS have a positive correlation with CSR but CSR has an insignificant impact on both the dependent variables. The result may have been obtained due to small sample size or the study, being done only with one year time lag for CSR, may be due to any other variable not considered in the study.

Ghosh, A. (2013) has studied the corporate sustainability performance (CSP) of the firms in an emerging economy like India, in the backdrop of certain company-specific characteristics like size, leverage, profit, age, R&D expenses, advertisement expenses, Indian or foreign business groups, liquidity, dividend, growth, operation in sensitive environment, competitive advantage and long term value.. The study uses top 200 companies on the National Stock Exchange (NSE) as per market capitalization as on 31st December 2012 and it also uses the S&P ESG India Index to measure the CSP, from the year 2009 to 2012. The sample is categorized into firms which made a consistent appearance in the index as CSP leaders, firms who made occasional appearance in the index, and firms who never made it to the index as non-CSP firms. The

standard random effect probit model is used for determinants of superior CSP and the Ohlson's (1995) valuation model for the value relevance of CSP. The study finds that company which is large in size, has lower leverage, higher research and development expenses, higher advertisement expenses, and which is business group affiliated, is more likely to have superior sustainability performance and more likely to be in the index whereas profit, liquidity, dividends, and growth do not have an effect of the company likeliness of being in the index.

Daizy and Das, N. (2014) have attempted to compare two of the most popularly used frameworks of corporate sustainability, *i.e.*, Global Reporting Initiative (GRI) and Dow Jones Sustainability Index (DJSI). The DJSI is the first global index launched in 1999 to track the financial performance of the firms in lieu of sustainability, on the basis of their market capitalization. The DJSI is classified into three major criteria, economic, environmental and social, on the basis of which the companies are judged and then ranked on the index each year. The GRI, on the other hand, issued its first ever guidelines in 2000 which got revised in 2002 and then again in 2006 as G3. It also consists of three categories such as economic indicators (9), social indicators (45) and environment indicators (30). The main finding of the paper is that both the indicators have similar categories, but disclosure pattern and framework is different. GRI consists of 90 indicators whereas DJSI consists of 9 indicators. According to GRI database 2012, in Indian context 80 companies are presenting report on sustainability whereas only one company, Wipro, is listed on the DJSI index.

Sharma, J.P. and Khanna, S. (2014) have explored the inter-relationship between Corporate Social Responsibility, Corporate Governance and Sustainability through correlation analysis in the years, 2009-10 and 2010-11 for the 46 firms forming part of S&P CNX Nifty. In total 35 variables having used to describe the three components; 7 describes corporate social responsibility, 18 describes corporate governance and 10 describes sustainability. The findings of the study are that there is a very low negative insignificant correlation between Corporate Social Responsibility and Corporate Governance, positively low and insignificant correlation between Corporate Governance and Sustainability, and a significant correlation is found between Corporate Social Responsibility and Sustainability. The study recommends establishment of separate Corporate Social Responsibility department for alignment of strategies with business objectives and more transparency in disclosures. It also recommends speedy mechanism for

fulfillment of Corporate Governance requirements in public sector enterprise and also implementation of Sustainability reporting at a larger scale.

Kumar, K.S.V. and Devi, V.R. (2015) have attempted to study the trend of Sustainability reporting practices in India, and the needs, challenges and opportunities associated with it. The reporting of Sustainability is a voluntary call for the companies is India, though after Securities and Exchange Board of India (SEBI) having asked top 100 listed companies as per market capitalization at Bombay Stock Exchange and National Stock Exchange to disclose Business Responsibility Report in August, 2012, the paradigm has slightly taken a shift from voluntary to mandatory for the qualifying companies. Only 125 companies have disclosed Sustainability reports as per GRI guidelines in India in the year 2012-2013. Sector wise, cement is the most compliant sector in India with reference to sustainability reporting, banking & financial services, healthcare and pharmaceuticals being the least. Though, Indian economy is becoming conscious about sustainability, still there is a long way to cover, and special steps need to be taken for focusing on the measures of reporting, its verification and assurance of reports.

Garg, P. (2015) has tried to study the relationship between the firm performance and sustainability reporting in India. He has selected samples of companies listed in the BSE GREENEX index for the period of 5 years, from 2008 to 2012. Data are collected from the annual reports of the companies using the database, PROWESS. The sustainability reporting is measured through reporting guidelines of GRI which consists of total 121 indicators, whereas firm performance is measured through ROA and Tobin's Q. The analysis was done through regression analysis and paired-t test. The findings provide that the sustainable reporting affects the firm's performance negatively in the short term, scores of years, 2011 and 2012 affecting the performance of 2012 negatively, whereas the reporting affects the firm's performance positively in the long-run, scores of 2008, 2009 and 2010 affecting positively performance of 2012.

Laskar, N. and Maji, S.G. (2016) have attempted to study the level of sustainability practice disclosure of the firms and its affect on the financial performance, by studying 28 Indian unlisted companies for a period of 6 years from 2008-09 to 2013-14. They have studied companies' annual reports for identifying the sustainability practices and market to book ratio have been used for financial performance measurement, along with two control variables, *viz.*, leverage and size. The study reveals that nearly 88% of the firms are disclosing sustainability practices as per

GRI framework in which the quality of disclosure is nearly 80%. The study also reveals that there is a positive and significant relationship between sustainability reporting and firm's performance. However, the level and disclosure of corporate sustainability practices do not influence the firm performance, *i.e.*, increase in quality or level of disclosures doesn't increase influence on firm performance. The study also reveals some of the limitations of the GRI framework in Indian context. It says that the same guidelines of GRI framework cannot be applied to firms belonging to different sectors, along with the absence of integrated indicators for the three dimensions of reporting, and the mechanism for external verification of sustainability reports by the firm is also not quite clear.

Laskar, N., Chakraborty, T.K., and Maji, S.G. (2017) have attempted to make a comparative study between the two countries, Japan and India, in the field of sustainability reporting. While India is still in the nascent stage when it comes to sustainability reporting, Japan is highly developed in the field of sustainability providing the highest number of sustainability reports in Asia. This paper studies the effect of sustainability reporting and also the effect of environmental, social and economical indicator on the financial performance of the firm in both the countries. The paper takes into account 28 non-financial companies from India and 35 non-financial companies from Japan, listed in BSE and TSE respectively, which disclose sustainability reports on their respective website continuously for the period from 2009 to 2014. The findings suggest that the companies in Japan disclose more information compared to the ones in India, however there has been an increase in the level of disclosure in both the countries over the years but the rate of change is more in India compared to Japan. There is a positive relationship between sustainability disclosures and financial performance in both the countries. However, the effect of social disclosures is significant in India, whereas both environmental and social disclosures are significant in Japan, which could influence the firm's financial performance. They finally conclude that the influence of corporate sustainability practices is higher in Japanese firms than that in the Indian firms.

Garg, P. (2017) has tried to develop a Sustainability Reporting Index (SRI) by finding and summarizing the popular and mostly used indices such as DJSI, GRI, UN Global compact, Sustainability Integrated Guidelines for Management (SIGMA), National guidelines as well as disclosures made in the reports of Indian companies listed on BSE GREENEX. The SRI is

finally prepared by taking into account the disclosures made in all the following indices, and it consisted of 60 disclosures which was divided into 13 economic reporting disclosures, 22 social reporting disclosures and 25 environment reporting disclosures. The index is used to analyze disclosures of the sample companies using content analysis. The applicability of the index is checked by applying the index on the sample companies selected form BSE 500, where ITC Ltd. turned out to be the one who has reported maximum parameters thereby attaining first sustainability disclosure rank and Agro tech foods Ltd. on the other hand turned out to be the least parameter-reporting company.

Concluding note:

Foreign and Indian studies as referred above highlight two different ways of looking into Corporate Sustainability:

A) Determinants of Corporate Sustainability

B) Relationship of Corporate Sustainability with firm's financial performance

Now the observations and findings are summarized in brief in the following two sections.

A) Determinants of Corporate Sustainability:

The determinants of Sustainability have been a matter of research for many researches and a lot of researches have been conducted to find out the same. Dienes, D., Sassen, R. and Fischer, J. (2016) have revealed that firm size is used as a determinant in 18 studies, profitability in 17 studies, capital structure in 8 studies, media visibility in 4 studies, corporate governance structure in 16 studies, ownership structure in 12 studies, and firm age measured by number of years since the firm's inception in 3 studies. This finding is supportive of findings of Ghosh, A. (2013) who revealed that company which is large in size, has lower leverage, higher research & development expenses, higher advertisement expenses, and is business group affiliated, is more likely to have superior sustainability performance. LU, W.L. (2013) has stated that the corporate governance contributes additional value to the firm and the impact of lagged corporate sustainability performance on corporate financial performance is higher for firms with stronger corporate governance. Rego, A., Cunha, M.P.e. and Polo´nia, D.,(2015) reveals that most important leadership tasks for developing Corporate Sustainability was setting direction, creating

alignment, and maintaining commitment and also monitoring the activities of organization and its environment.

B) Relationship of Corporate Sustainability with firm's financial performance:

The relationship of Corporate Sustainability and firm's financial performance has always been a matter of interest for the researchers and academicians. Therefore, several studies have been made to depict the same. A significant positive relationship between Sustainability and Corporate financial Performance has been found by most of the researchers (Michelon, G., and Parbonetti, A. (2010), Burhan, A.H.N. and Rahmanti, W. (2012), LU, W.L. (2013), Marti, C.P., Rovira-Val, M.R. and Drescher, L.G.J. (2013), Garg, P. (2015)). No significant relationship has been found between Sustainability disclosures and Return on Equity by Chiong, P.T.N. (2010), Sharma, J.P. and Khanna, S. (2014) have also found a significant relationship between Sustainability disclosures and Corporate Social Responsibility. Although, it has been found that economic and environment indicators do not affect the firm's financial performance, only social indicators does (Burhan, A.H.N and Rahmanti, W., 2012).

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ELECTORAL BONDS – AN INNOVATIVE STEP TOWARDS TRANSPARENCY

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Abstract

Putting the art of financial engineering India attempts to manage for cleaning the funding of a political party. It has simplified the way of funding by establishing a direct route channelized through the authorized scheduled banks, which in turn provides benefits to all concerned. It is one of the major steps of the present government to counter the black money, involved in financing of Indian politics. The main thrust of this paper would be to analyze the background of this measure and provide recommendations on its emergence.

Key words: Black-Money, Electoral Bonds, Criticisms, and Recommendations

1. Introduction:

Ease of finance has been brought into light by the newly introduced "Electoral Bonds" as a means of financing political parties. Resolving all complicacies it embraces a simple channel of injecting funds to political parties registered under section 29A of "Representation of People Act", 1951.

Round the globe it's been the first initiative to bring in a way of finance that'll provide more transparency and accountability of funds while also preventing the generation of black money than its prior mode. The introduction seeded it roots from the Finance Bill, 2017 (Section 133-136) which put forward the foundation of such bonds.

2. Genesis:

With the aid of cleaning the system of political funding the Central Government enforced the rule to finance political parties through purchasing electoral bonds from notified branches of State Bank of India (SBI) with specific denominations. Such direct route of financing will solve the problem of erosion of funds and subsequently prevent the generation of black money. It propounded its root from the budget announced for 2017-18 and is almost ready to be launched. Budget 2017-18 introduces section 133, 134 (addition of a new subsection 3 to

section 31 of Reserve Bank of India Act , 1934) of Part –III as Amendments to RBI Act, 1934, which allows the Central Government to authorize any scheduled bank to issue "Electoral Bonds". A parallel amendment has also been made through section 135, 136 of Part-IV as Amendments to The Representation of People Act (RPA), 1951. As per section 136 of the Finance Bill, 2017 [w.e.f. 1st April, 2017] (Read with section 29C (1) of RPA, 1951), it voids the declaration required by political parties to the Election Commission of India (ECI) in form 24A by the treasurer of the political party (registered under section 29A of The RPA, 1951) in case of receipt of an "Electoral Bond". "Electoral Bond" has been explained for the above purpose in section 31(3) of RBI Act, 1934(Amended).

The above amendments as introduced by the Finance Bill, 2017 lays down the foundation of the "Electoral Bond" that is expected to cleanse the political funding and absorb the essence of black money being involved in the funding of Indian Politics.

3. Emergence of the scheme:

Keeping in mind the removal of black money from India, NDA Government has now put a step forward with introducing the "Electoral Bond". In 69 years of previous budget preparations such brave step is hardly found.

While allowing the recommendation of ECI of keeping the finance through cash restricted to Rs. 2,000 (Gearing down from Rs. 20,000 previously) and also mandating parties to receive donations digitally, it is now going to re-shape the route of donations where contributors are intending to hide their identity. Previously a contributor who intended to hide his/her/it's identity to avoid the fear of reprisals of political parties needed to transfer the funds in the hands of "Electoral Trusts", which further would inject funds to political parties (Registered u/s : 29A of The RPA,1951). (Abraham, Electoral Trust, 2017)

By the introduction of "Electoral Bonds" such indirect financing can be removed. The contributor can now provide donations to the political party he/she/it intends directly by purchasing the bond from notified branches of S.B.I and hand over to the parties desired. This sort of change will remove the need of "Electoral Trust" besides protecting the identity of donor. (Abraham, Electoral Bond, 2017).

4. Conceptual framework of the scheme:

The essence of engineering in finance has been applied in the funding of political parties by introducing the basis of "Electoral Bonds" vide Finance Act, 2017.

Purchasing an "Electoral Bond" requires a number of criteria that are to be complied with by the receiver as well as the giver/donor. Such bonds can only be handed over to political parties registered u/s: 29A of The RPA, 1951 and parties registering at least 1 % votes in favour in its last election. The contributor needs to purchase such bonds other than in cash, from the notified branches of SBI in multiples of Rs. 1,000; Rs. 10,000; Rs. 1 lacks; Rs. 10 lacks; Rs. 1 crore; for any value. (NDTV, 2018)

To avoid the "Parallel Currency" situations of these bonds the maximum ceiling of encashment is primarily set at 15 days. This implies from purchase to encashment the maximum days within which the bond remains effective is 15 days. Although before encashment of such bonds political parties are to notify a particular bank account in which such bonds are to be redeemed.

Identity of the contributor though remains confidential; as requirement of purchasing such bonds the contributor requires to fulfill the Know Your Customer (KYC) norms stipulated by the authorized bank u/s: 31(3) of The RBI Act, 1934.

The electoral bond will be a bearer instrument in the manner of a promissory note and is expected to serve as a paper currency for funding political parties. These bonds will be available for purchase for a maximum of 10 days in the month of January, April, July, October, along with an open platform of 30 days in the year of election.

Basically notified scheduled banks mostly play a role of a custodian and also a vehicle transforming the money black to white. They will keep a record of information relating to the contributors (Through KYC norms) and facilitate the political parties direct funding from their respective contributors. Although electoral bonds will only serve the function of paper currency and will be used as a means of finance, it will not carry any interest to be payable from the bank's part.

Section 136 of The Finance Bill, 2017, however removes the requirement of disclosure for political parties in lieu of finance received by way of an "Electoral Bond" [Previously as per section 29C (1) of The RPA, 1951, which was mandatory]

5. Political funding: Past and present scenario

How the "Electoral Bond" will come into operation and analysis of effectivity of introducing such instruments will be understood in a better way through an empirical study by comparing alternatives.

We shall be first discussing the mode of finance which had been in existence for contributors willing to hide their identities even now:

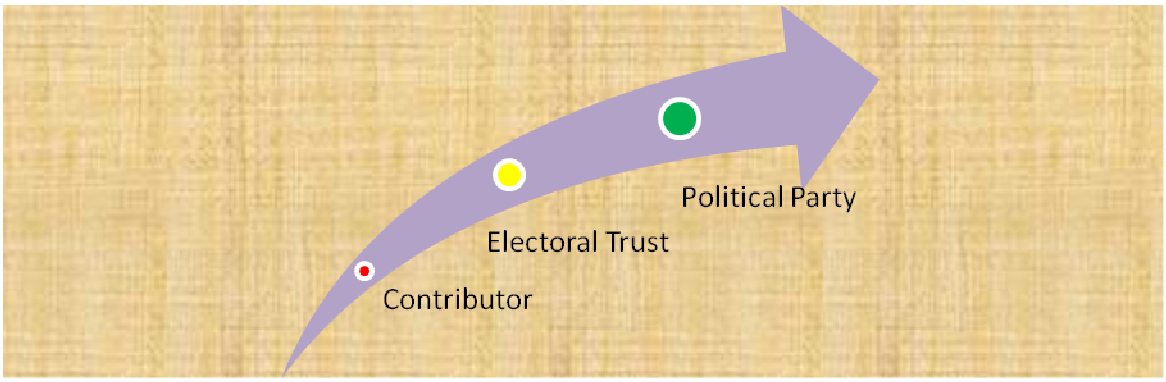

Figure 1 - Flow Chart of Political Funding (Created by Author)

"Electoral Trust" is a non- profit organization registered u/s 25 of The Companies Act, 1956 (Now registered as per section 8 of The Companies Act, 2013).It was an institutional setup which had worked as a custodian of contributors, facilitating them the confidentiality of their names. Such trusts had to disburse at least 95% of their accumulated balance prior to 31st March of the financial year to the political parties registered u/s 29A of The RPA, 1951. Where accumulated balance represents a total of funds received during the year from contributors and balance carried forward from the previous years (if any).Such trusts had prohibitions on using funds contributed either for the benefits of their own members or for the benefits of contributors (directly or indirectly).

To explicitly outline the functions of such trusts Central Government on 31st January, 2013, through inserting Rule 17CA in Income-Tax Act, 1962, provides a list of functions to be performed with the approval of Central Board of Direct Taxes (CBDT). The list of functions to be performed by an electoral trust can be found at

http://www.incometaxindia.gov.in/Rules/Income-Tax%20Rules/2008/103120000000009096.htm.

The trust needs to register itself and should bear the phrase "Electoral Trust" as a section 25 company of Companies Act, 1956 after its name and also needs to obtain an approval from CBDT, However after the enactment of Companies Act, 2013, the provisions corresponding to section 25 are given at section 8 of Companies Act, 2013 and regulations can be viewed at http://www.mca.gov.in/Ministry/pdf/The_Companies_Bill_2012.pdf. The operational guideline for such approval can be traced in [Notification No.9/2013/SO 309(E)].

In addition, the Electoral Trust had to submit to the ECI an annual report disclosing the details of contributions it received and the donations it gave to political parties, a part from an audit report vide guidelines issued on 6th June, 2014 by ECI. Detail of guidelines can be traced from http://eci.nic.in/eci_main1/PolPar/ElectoralTrust_06062014.pdf. (Abraham, Electoral Trust, 2017)

Contributor refers to persons eligible to donate funds to electoral trust. Following are the list of persons who are eligible to donate funds: Indian citizens, Domestic companies, Hindu Un-divided Families (Including Jain and Sikh families), AOP's, BOI's and NRI's (Being citizen of India).

All above categories needs to quote their respective Permanent Account Number (PAN) at the time of donations except for NRI's (Indian Citizens) where quoting the passport number is mandatory. Every eligible contributor can claim deduction u/s: 80GGB and 80GGC of Income-Tax Act, 1961, from their respective gross total income subject to the amendment of I.T Act, 1961, through Finance Act, 2013 (w.e.f. : 1st April, 2014) where no deductions is allowed under 80GGB and 80GGC if donations are made in cash. See (http://law.incometaxindia.gov.in/DIT/Income-tax-acts.aspx).

There are certain persons from whom the trust is not suppose to collect donations for funding purpose of political parties, they are : Non- Citizens, Other Electoral Trusts, Government Companies, Any other Foreign Source/Foreign Entity (whether registered or not) [As defined under Foreign Contribution (Regulation) Act, 2010], See at http://mha.nic.in/fcra.htm and any Artificial Judicial Person, Local Authority which are wholly or partly funded by Government.

The party receiving the donations from the electoral trust needs to be registered under section 29A of The Representation of People Act, 1951 and also is to file a return [The responsibility lies on the treasurer(s) of the political party] before filling returns of income to I.T Department, in form 24A as per section 29C (1) of The RPA, 1951, if receipt is more than Rs. 20,000 from the contributor.

However, the proceedings have been quite simplified through the inception of Electoral Bonds as primarily the sources unveiled. The bonds presently are under process and yet require a finer tune which requires further discussions among the political parties. Electoral Bonds will altogether reduce the compliances of political parties with ECI in regards to receipts of donations under such mode and also protecting the identity of willing contributors so that they are not exposed to the threats of reprisals and vindictiveness. Besides it will also cut down the functions of intermediaries (Electoral Trusts) to eliminate the effect of black-money in funding.

6. Critique:

Announcement by the hon'ble finance minister Mr. Arun Jaitley on electoral bonds as a means of political party funding instrument is not free from criticism. Mr. T.S. Krishnamurthy (Former Chief Election Commissioner) had stated that such bonds will not be able to disclose the nexus between the corporate and political parties to the public and concerned. It might increase the transparency between the donor and the donee, yet public in general is still kept in dark as far as who gives money and how much money is given. That's not exactly what transparency means – he argued. (The Economic Times, 2018)

The alliance between corporate and political parties still remains confidential which are not desired on the backdrop of a good economy. Rather he suggested to Press Trust of India (PTI) that it would have been a better step to set up an Election Commission administered National Election Fund which would give the donor 100% tax benefits on any donation made thereto. (The Economic Times, 2018)

7. Conclusion and Recommendations:

Since long after independence we have found a direct route for financing political parties which is not yet established in any other side of the globe.

At the outset, we can say that the cornerstone of a sound and transparent electoral finance system regime is disclosure. Disclosure of donors and their background greatly empowers citizens, public spirited organizations, and election watchdogs to verify donor records, recipient parties and establish any quid pro quo or possible complicity.

Although the donor is required to comply with the KYC norms but the bond itself by its regulation hardly provides anyone (Including the ECI) the power of inspection. (Sahoo, 2018)

The two major pillars of transparency and accountability can only be established when strong records of disclosures and strict scrutiny of accounts are ensured.

Donor needs to purchase bonds in a non-cash mode from S.B.I by filling the KYC norms properly; S.B.I will therefore have the database of total bonds purchased along with the respective information of donor. What still lacks is the cross-checking of bonds, whom are they actually handed over to? As the contributions from bonds require no disclosure from political parties side to the ECI as a statute. The lack of cross-checking is the point of concern which has been also criticized by the former Election Commissioner Mr. T.S. Krishnamurthy. Although setting up of a National Fund under the administration of Election Commission will just be a transformation of the powers of an electoral trust to ECI and can hardly reduce the problems, as funding still holds an indirect route and involves a third party(ECI as an intermediary) intervention. Rather a better way would be if electoral bonds are made a sole route of funding political party and the Central Government, by amendment of statute enforces order to authorized scheduled banks to share the database of information (collected through KYC norms) with the ECI. In addition the mandating of disclosure u/s 29C (1) of The RPA, 1951, by political parties to ECI in respect of “Electoral Bonds” if established it will serve and make out a complete picture of compliance and will eliminate the inconsistency in the cross-checking process. As of now the electoral bonds are just the prototypes and are in the process of being tuned. I hope ultimate outcomes in the form of issuance of such type of bonds will definitely meet up the due requirements of disclosure and accountability and ensure a transparent view of finance, by driving out the black-money from Indian Politics.

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