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IMPACT OF FINANCIAL INNOV ATIONS ON SUSTAINABLE GROWTH RATE: A STUDY ON NIFTY 50 LISTED BANKS IN INDIA

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Abstract

Financial Innovation is basically involves making and promoting a new financial products and services, developing new processes to facilitate financial activities with an objective to meet the preferences of investors. Economic growth of a nation is provoked by its banks. The basic objective of introducing innovative financial services by the banks is to reduce the NPA, improve the performance and as well as maintain sustainable growth. But in the era of competition sometimes the innovative products may not bring the expected growth due to the higher version innovations by the competitors as a result all the players in same industry may not achieve sustainable growth rate. In this paper an attempt has been made to analyse various innovative services provided by the Nifty 50 listed banks in India, as well as to determine their individual sustainable growth rate.

Keywords: Financial Innovation, Sustainable Growth Rate, Indian Banks, Nifty 50, Banking Products

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Introduction

The continuous change in the practice of business made the market highly competitive. They struggle and sustain in the market only through better services and customer friendly products. To reach the standard of expectation of both the only way is to upgrade and launch innovative products. In the financial market, risk management plays the vital role. A range of new set of products can uplift the all the financial sector in economic growth which can be achieved through financial innovation (Rajan 2006). It is observed from past literature that the financial market give rise to the growth of the economy (Schumpeter, 1911/1959, Goldsmith, 1969, McKinnon, 1973) whether the financial developments support in growth or vice-versa (Greenwood and Jovanovich, 1988, Pagano, 1993). During 90's several researchers stated that the economic growth is maintained through financial sector (King and Levine, 1993), in contrast to that Rousseau and Wachtel (2006, 2009) states that the empirical and theoretical analysis shows a weak relationship between economic growth and financial sector.

Traditionally, evaluators were concerned for the profit as a means to measure the performance of thebusiness. In next phase, it was found that profit should not be the only criteria so growth rate should be given due importance. But presently SGR (Sustainable Growth Rate) is a tool that considers all the financial aspects and the policies which will represent the growth path of the banking sectors.

Innovation

The development or up gradation of any existing product line that will raise the standard of the products and increase the performance which in return will give maximum customer satisfaction and growth of the organization is termed as innovation. In general, any kind of idea newly introduced for a better service or goods that will give a positive change then it can be termed as innovation. But it will not correct to confirm unless such innovative idea is implemented for the growth of standard and performance.

Innovation in Finance

In financial constraints when a features intact to any existing product line then it is quoted as financial innovation. This up gradation is introduced to satisfy the players of the market in financial market. An innovation in the financial market can be referred as novel product, market participants and practices. An enormous range of technique, institutions, products is taken up by the firm to meet the need and requirement of the customer and business unit. In a nutshell, Financial Innovation refers to trigger, construct and promote new instruments, institutions, or methods in thefinancial market.

Sustainable Growth Rate

Higgins suggested a model for sustainable growth rate to analyze the sale growth that a corporate prefers to maintain. SGR is one of the realistic calculations to predict the growth rate of a company's earning with an expectation of no capital alteration. Overall SGR means a rate that a company tries to maintain so as to avoid financial distress without any financial depletion.

Objective of the Study

- To find out the innovative products introduced by the Indian Banks listed in Nifty 50
- To study the Sustainable growth rate of the selected banks listed in Nifty 50
- To examine the impact of financial leverage and operational leverage on Sustainable growth rate

Review of Literature

1. Past researchers on Financial Innovation and development

Authors	Remarks
Van Horne (1985)	Two forces taken into consideration for any kind of innovation i.e. extra weightage to present operation to raise the efficacy and the reason behind innovation.
Siber (1983)	A process of raising the economic constraints of firm that will increase the efficiency.
The Bank for International Settlements (1986, part iv),	Innovation is depended on the demand and supply, in which the demand factor arises due to liquidity and transfer of risk. While the supply comes due to theinnovation process, techno-change, practices, financial competitions.

Miller (1986, 1992),	Two factors are suggested i.e. taxation and government regulations for the innovation.
Kumar Arya (2018)	Financial derivative as an innovative products introduced in stock market which increase the performance of Indian stock market.
Allen and Gale (1994)	Innovation is the "hysteresis" i.e. the innovative become the standard and the existing will be disappear.
Merton (1992, 1995)	"Financial Innovation Spiral" standardised derivative makes its own arrangement for product innovation, OTC or products as per financial institutions which helps in increasing volumes and reduce the transaction costs.

2. Past researchers on prediction of Financial Sustainable Growth Rate by using contemporary models:

Authors	**Remarks**
Higgins (2003)	Sales and revenue can be generated without exhausting its resources then it is termed as Sustainable Growth rate. A firm cannot sustain for long without sufficient financial resources.
Van Horne(1998)	An appropriate model can help to evaluate and maintain the sustainable growth rate .Maximum sales that can be achieved by targeted dividend ratio and debt.
Drake	For the year 2005, the Wal-Mart stores is considered and said that a downfall trend observed in sustainable growth rate due to dividend pay-out ratio.
Arya et.al (2017)	To maintain the sustainability of firms, the firms asses them in respect to various accounting indicators one of the major tool is ROE that will identify the inefficiency in marinating the desired standard.
Radasanu (2015)	One should maintain the cash flow to maintain the sustainability of a firm. And the sustainability can be achieved through profitability ratio, asset turnover ratio, financial policy and dividend policy.
Rahim and	Profitability of fir is directly proportional to sustainable growth rate. In

Saad (2014)	ASEAN countries the sustainable growth rate has no difference significantly to profitability of a firm.
Amauzesh et al (2011)	Return on Assets has a relationship with the actual growth and the sustainable growth.
Arya et.al (2017)	The study states about the benchmarking of firms in respect to competitiveness, functional, performances, process and strategy that will help to compare and rank them in respect to firm's innovation.

Research Methodology:

Sample Size: The data consist of the banks that are listed in Nifty 50 for last seven years and the leverage ratios are calculated to evaluate the sustainable growth rate of the firms.

Hypothesis of the Study

H_0: There is no significant difference of impact of important financial variables on sustainable growth rate

H_1: There is a significant difference of impact of important financial variables on sustainable growth rate.

Data analysis tools:

Firstly the financial leverage ratio are calculate of all the banks listed in Nifty 50, basing on that sustainable growth rate is calculated.

For the analysis, the tool used is correlation and regression. The tow variables X and Y are considered for the evaluation of correlation coefficient as it will show the linear strength between two.

The regression analysis is incorporated to measure the relationship between cause and effect. Following is the regression model:

$Y= \beta_0+\beta_1*X_1 + \beta_2*X_2+ \beta_3*X_3+ \beta_4*X_4+ \beta_5*X_5 + e$

Y= Sustainable Growth Rate

X_1=Profit Margin

X_2=Dividend Pay Out Ratio

X_3=Debt Equity Ratio

X_4=Ratio Total assets to sales

X_5=Return on Equity

Green banking: An era of financial innovation in Banking Sector

Axis bank- The third largest bank considered in India is Axis Bank who offers all financial service to MSME, Retail Business, Large and Mid- Corporates and Agriculture. Axis bank able to step in thenation since 1947 with a wide range of international branches i.e. Dubai, Abu Dhabi, Shanghai, Colombo, Hong Kong and Singapore. It has 11,245 ATMs across the countries.

- The bank supported the green banking by using 21572 Kg of dry waste productively and the corporate office in Mumbai is based on Platinum LEED-Certified Green Building.
- Solar power is used as power supply for emergency lights, rainwater harvesting, and treatment of sewage for maintaining agreen environment.
- 1 lakh saplings of plants planted throughout the nation
- Facility of E-statement and donate books and notepads to needy and poor people

HDFC- One of the largest bank in India with its market capitalization. Currently leading with branches of 3,251 nationwide and 11,177 ATM's. HDFC keep disclosing all green activities. Recently it has disclosed the carbon footprint to the Carbon Disclosure Project based in theUK.

- It believes in less paper use and suggest for e-statements to its customer
- Replacement of conventional light to CFLs. Switching off signage light passes at branches early to midnight.
- Solar ATMs are installed

ICICI- In terms of total assets, it is considered as the largest private sector banks in India. It has a wide network in India with 11,162 ATMs and 3,611 branches. It also operates in 19 countries.

- It serves eco-friendly vehicle finance i.e. 50% of theregistration process for loans on Auto finance are waived.
- The Home finance gives a huge cut off in processing fees that purchase homes from LEED (Leadership in Energy and Environmental Design) certified buildings.
- They started installing eco-friendly ACs from traditional one.
- It aware of various issues like wildlife, laws on environment, biodiversity.

Kotak Mahindra- Kotak Mahindra Finance presently known as Kotak Mahindra Bank is a well-known bank sings 1985. It is the first bank that got the certificate from RBI to run as Bank with its head office at Mumbai.

- The concept of "Think Green" by the bank motivated it, customer, to go for e-statement. It supports to make e-card instead of cash payment by levying Rs 100.
- Grow-Trees.com a web-based plantation site, that help to plant trees for the various occasions like wedding, birthday, independence day and so on. This helps in the project of plantation at rural communities and wildlife

SBI- The wide range of financial service all over the nation is provided by SBI which was set up during 1955. It has 32,752 ATMs 14,816 branches and approx. employees are 2, 28,296. It has 180 branches globally.

- They launched a program GCC (Green Channel Counter) on State Bank Day.
- It is the first bank that introduced green banking by installing windmills for power generation.
- Encourage people by providing loans to reduce GHG (Green House Gas) that emits from manufacturing units.
- They have initiated the Carbon Disclosure projects

Indus Indi Bank- A bank set up to serve for consumer and corporate. The bank that is technological advance with 573 branches and 1055 ATMs though out the nation. It also operates in London and Dubai.

It has a major role in CSR activities like helping poor, environmental upholding and ecological behavior.

- Mumbai's first Solar ATMs is installed as Green Office project.
- CO2 reduction by using less power consumption appliances
- E- Mechanism introduced like e-learning, e-waste management, e-archiving, paperless fax and many more.

Yes Bank- it is the fourth largest private banks raised an amount of Rs 1000 crores and turned with India's First green Infrastructures Bonds.

Variable Measurement:

Daum. J.H. etalsay a business can follow its success path by following certain models that will make the firms most competitive and challenge others.

Models for Sustainable Growth Rate:

Model-I

Sustainable Growth Rate= ROE x (1-Dividend Payment Ratio)

The profitability of a company can be identified through ROE; howeverthe per-share earnings of the company that is paid as dividend can be calculated through dividend payment ratio.

Table-1: Sustainable Growth Rate (Model-I) of Banks listed in BSE 30

NAME OF THE BANKS	MODEL-1 ROE x (1-Dividend Payment Ratio)						
	2011	2012	2013	2014	2015	2016	2017
AXIS BANK	15.82371	16.87133	15.69562	14.96610	15.22881	14.51274	4.870612
HDFC BANK	17.54516	16.94554	16.62345	17.00275	16.02777	15.00765	14.82557
ICICI BANK	12.55272	12.17937	11.26278	11.73443	11.90304	8.707662	8.359008
KOTAK MAHINDRA BANK	15.38554	16.08129	15.05865	14.01700	14.21720	11.81739	13.15163
SBI	15.53733	13.87237	12.66098	8.452416	9.135615	5.963056	-0.175758
INDUS IND BANK	15.70509	15.41743	15.17412	15.26490	16.76491	14.47686	15.26847
YES BANK	22.51961	21.76344	20.70642	20.558934	17.332758	16.63993	15.66294

Model-II

$$\text{Sustainable Growth Rate} = \frac{P_m \times (1-d) \times (1+L)}{T - \{P_m \times (1-d) \times (1+L)\}}$$

P_m =Profit Margin (Existing & Target)

d = Dividend pay-out ratio (Target)

L = Debt Equity Ratio (Target)

T = Ratio of Total Asset to Sales

Table2-: Sustainable Growth Rate (Model-II) of Banks listed in BSE 30

NAME OF THE BANKS	MODEL-2						
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
AXIS BANK	-104.16	-103.62	-103.49	-102.77	-102.70	-102.64	-103.42
HDFC BANK	-102.94	-102.88	-102.79	-102.61	-102.59	-102.62	-102.54
ICICI BANK	-104.98	-104.18	-104.14	-103.80	-103.52	-103.70	-103.29
KOTAK MAHINDRA BANK	-102.07	-102.50	-102.64	-102.08	-102.24	-102.71	-102.21
SBI	-103.57	-103.08	-103.05	-103.15	-103.07	-104.42	-103.09
INDUS IND BANK	-103.82	-103.85	-103.92	-103.48	-103.21	-102.92	-102.38
YES BANK	-105.13	-104.87	-104.61	-104.22	-104.12	-103.75	-103.80

Interpretation:

- **Growth rate > Sustainable Growth Rate (SGR):** If a company will not change its policy then for instance the SGR will sustain at 89% instead of 14% which the company was expecting. Then it confirms that the policy is out of track. Hence the company should reduce the dividends and increase the capital to maintain the 14%
- **Growth rate <Sustainable Growth Rate:**To maintain sustainable growth rate figures a rate of 9% instead of 7% then they should try to raise the dividend payout.

As a result this kind of analysis will measure the expected growth and sustainable growth which will help the manager to take decision on introducing innovative products or services in thebanking sector to sustain the rate.

Impact of important financial variables on Sustainable growth rate- A quantitative approach through regression analysis

Table 3-Hypothesis testing through regression analysis

Variables	**Axis Bank**		**HDFC**		**ICICI**		**Kotak Mahindra**		**SBI**		**Indus Ind. Bank**		**Yes Bank**	
	t	**Sig.**	**t**	**Sig.**	**t**	**Sig.**	**t**	**Sig.**	**t**	**Sig.**	**t**	**Sig.**	**t**	**Sig.**
SGR	-70.91	.009	-1337.2	.000	-28.09	.023	-277.9	.002	-1040.9	.001	-114.7	.006	-86.44	.007
Profit Margin	3.108	.198	64.097	.010	1.692	.340	34.894	.018	208.111	.003	7.323	.086	15.215	.042
Dividend Pay Out Ratio	-5.348	.118	-3.159	.195	-.048	.969	1.213	.439	-.723	.602	-3.735	.167	.197	.876
Debt Equity Ratio	1.996	.296	24.330	.026	-.035	.978	3.540	.175	28.182	.023	1.049	.485	2.296	.261
Ratio Total assets to sales	-16.13	.039	-162.40	.004	-4.333	.144	-35.51	.018	-44.486	.014	-12.93	.049	-.112	.929
Return on Equity	-.725	.601	-6.820	.093	.267	.834	4.072	.153	-14.200	.045	.432	.741	-3.371	.184

From the above result of regression, we get the following results:

Axis bank-the ratio of total assets to sales (ROAS) has statistically significant in influencing the sustainable growth rate negatively as we got the p-value as 0.029 and t value as -16.139 i.e. the rise of SGR due to less ROAS. The result of other variable has no statistical significance at 5% level like Dividend pay-out ratio and ROE are related negatively as the t-value is -5.348 and -0.725 respectively. A positive relation is observed in case of profit margin and thedebt-equity ratio with t value as 3.108 and 1.996 respectively.

HDFC- From the above analysis it shows a clear picture that debt-equity ratio and profit margin are positively related to sustainable growth rate i.e. the SGR will tend to rise when debt-equity ratio and profit margin will rise.However, total assets have a statistical negative significance in relation to SGR with the p- value as .004 and t value is -162.40 i.e. the SGR will rise when ROA tends to decrease. However, Dividend pay-out ratio and ROE in HDFC shows no statistical relationship.

ICICI- None of the ratio is found to be statistically significant in influencing the SGR. Here we find the p-value of profit margin as 0.340, dividend payout ratio as 0.969, debt-equity ratio 0.978, ratio total assets to sales 0.144, and return on equity 0.834.

Kotak Mahindra-From the above analysis it shows a clear picture that profit margin are positively related to sustainable growth rate with p-value as 0.018 and t value as 34.894 at 0.05 level of significance i.e. the SGR will tend to rise when profit margin will rise. However, total assets have a statistical negative significance in relation to SGR with the p-value as 0.018 and t value as 34.894 at 0.05 level of significance i.e. the SGR will rise when ROA tends to decrease. However, Dividend payout ratio, debt-equity ratio and ROE in Kotak Mahindra Bank show no statistical relationship.

SBI- the ratio of total assets to sales (ROAS) and Return on equity (ROE)has statistically significant in influencing the sustainable growth rate negatively as we got the p-value as 0.014 and 0.045 respectively t value as -44.486 and -14.200 respectively i.e. the rise of SGR due to less ROA and ROE. A positive relation is observed in case of profit margin and the debt-equity ratio with p-value as .003 and .023 respectively.

Indus Indi Bank- From the above analysis it shows a clear picture that ROA have a statistical negative significance in relation to SGR with the p-value as 0.049 and t value as -12.932 i.e. the SGR will rise when ROA tends to decrease. However, Profit Margin, Dividend payout ratio, Debt equity ratio, and ROE in Indus Ind.show no statistical relationship.

Yes, Bank- A positive relation is observed in case of profit margin with p-value as 0.042 and t value as 15.215. The result of other variable has no statistical significance at 5% level like ROE, ROA, debt-equity ratio and Dividend payout ratio.

Table 4- Hypothesis testing through Correlation analysis

Variables	**Axis Bank**		**HDFC**		**ICICI**		**Kotak Mahindra**		**SBI**		**Indus Ind. Bank**		**Yes Bank**	
	Pearson Correlation	**Sig.**	**Pearson Correlation**	**Sig.**	**Pearson Correlation**	**Sig.**	**Pearson Correlation**	**Sig.**	**Pearson Correlation**	**Sig.**	**Pearson Correlation**	**Sig.**	**Pearson Correlation**	**Sig.**
Profit Margin	.867*	.011	.363	.423	.897**	.006	.776*	.045	.824*	.023	.895**	.006	.994**	.000
Divide	-0.285	.536	.827*	.022	.117	.802	.051	.913	-0.329	.471	-	.011	.287	.532

nd Pay Out Ratio											0.871 *			
Debt Equity Ratio	.011	.982	-0.447	.315	.198	.670	-0.145	.756	.362	.425	- 0.465	.293	- 0.830 *	.021
Ratio Total assets to sales	- 0.891**	.007	- 0.948**	.001	- 0.877* *	.009	- 0.784*	.037	-0.273	.553	- 0.931 **	.002	- 0.826 *	.022
Return on Equity	-0.77	.870	-0.749	.052	-0.703	.078	.212	.649	.103	.825	- 0.757 *	.049	- 0.915 **	.004

** Significance of Correlation at the 0.01 level (2-tailed)

* Significance of Correlation at the 0.05 level (2-tailed)

From the above result of Pearson correlation, we get the following results:

Axis bank- The ratio of total assets to sales influence the SGR statistically negative at 0.01% with p-value as .007and r value as -0.891 i.e. higher will be the SGR lesser will be the ROA. With r value as 0.867 and p-value as .011 profit marginsis found to be positivelyrelated.

HDFC- SGR has a positive relation with Dividend pay-out ratio with r value as .827 and p-value as 0.22. But at 0.01% level of significance, ROA has a negative correlation with r value as -0.948 and p values as .001. So it can be concluded that SGR will rise if dividend payout ratio will increase and SGR will decrease if there is increase of ROA.

ICICI-The ratio of total assets to sales influence the SGR statistically negative at 0.01% with p-value as .009 and r value as -0.877 i.e. higher will be the SGR lesser will be the ROA. With r value as 0.897 and p-value as .006 profit margins is found to be positively related

Kotak Mahindra-SGR has a positive relation with Profit margin with r value as r value as .0.776 and p-value as 0.45. But at 0.01% level of significance, ROA has a negative correlation with r value as -0.784 and p values as .037. So it can be concluded that SGR will rise if profit margin will increase and SGR will decrease if there is increase of ROA.

SBI- With r value as 0.824 and p-value as .023, profit margins is found to be positively related with SGR at 0.01% level of significanceso it can be concluded thatSGR will increase when there will be rise in profit margin.

Indus Ind. Bank- SGR has a positive relation with Profit Margin with r value as .895 and p-value as 0.006. But at 0.01% level of significance, dividend payout ratio, ROA, ROE has a negative correlation. So it can be concluded that SGR will rise if Profit Margin will increase and SGR will decrease if there is increase of dividend payout ratio, ROA, ROE.

Yes Bank- The ratio of total assets to sales,Debt- equity ratio and return on equity influences the SGR statistically negative at 0.01% i.e. higher will be the SGR lesser will be the ROA, Debt-equity ratio and return on equity. With r value as 0.994 and p-value as .000 profit margins is found to be positively related

Conclusions:

The regression analysis upon the banks listed in Nifty 50 states that Return on Assets to Sales (ROA) puts a negative impact statistically on Sustainable growth rate (SGR). However, growth of SGR of banks is found to be positively related statistically to profit margin. As stated firms can sustain long run and able to compete in the market only if the SGR is found to be rising in trend. So any firm introduces any kind of products and services they must give priority to SGR by introducing innovative products.

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