

Modelling the Foreign Portfolio Investor Shareholding of Select Private Sector Banks in India

Manisha Pallavi , S. S. Prasada Rao



Abstract: This paper projects a financial model involving key capital market financial variables such as FPI shareholding, Market Price, Earning Per Share (EPS), Price to Earnings Ratio (P/E Ratio), Book Value, Price to Book Value (P/B Ratio), Dividend Yield, Enterprise Value, Market Capitalisation, Beta, Net Profit and Operating Profit and determines the impact of these financial variables on the FPI shareholding of the Banks. The selected private banks include: Axis Bank Ltd., HDFC Bank Ltd., Kotak Mahindra Bank Ltd., Yes Bank Ltd. and ICICI Bank Ltd. The Study is based on 14 years Quarterly data from June 2005 to March 2019, obtained from secondary sources. The statistical tools used for the study are Analysis of Variance, Karl Pearson Coefficient of Correlation, Regression and Chi-Square Test for Goodness of Fit to test hypothesis of the study. The data was analysed using statistical packages for social sciences. Our study concludes that different financial variables impacted the FPI shareholding of each selected banks. It was also found that the model framed was a Good fit to the FPI shareholding of all the select banks. This model will help to estimate the future values of FPI shareholding of the selected banks provided the values of significant financial variable corresponding to the required period is known.

Keywords: FPI shareholding, Market Price, Earning Per Share, Price to Earnings Ratio, Book Value, Price to Book Ratio, Dividend Yield, Enterprise Value, Market Capitalisation, Beta, Net Profit and Operating Profit.

I. INTRODUCTION

The emerging economies like Brazil, China and Korea, India have witnessed massive flow of foreign investment due to rapid economic growth and liberalised investment regulations. According to a survey conducted by (Japan Bank of International Corporatin (JBIC), 2015), India is one of the most favoured investment destinations for Foreign Portfolio Investors following Indonesia and China. FPI impact the Indian economy to a large extent - a sudden influx can essentially drive the stock market. They are the more predominant players in the equity market. Foreign Portfolio/Institutional Investors (FPI/FII) is one of the biggest drivers of India's financial markets and have invested around Rs 12.51 trillion (US\$ 171.81 billion) in India between FY02-18 (Indian Brand Equity Foundation, 2019).

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Recently, India has witnessed maximum outflow of FPI investment in FY 2018-19 Rs -38,930 INR Crore. This was due to global and domestic causes like hike in the rates by the US Federal reserve, worsening of current account deficit, depreciating rupee, rise in the crude oil prices, trade tiff between US and China and the political uncertainties due to general election in India.

Highly developed primary and secondary markets have attracted FIIs/FPIs to the greater extent. Investments by FIIs/FPIs in India are regulated by the Securities and Exchange Board of India (SEBI) but the ceilings on such investments are maintained by the Reserve Bank of India (RBI). SEBI has over 9000 foreign portfolio investors registered with it. Among different sectors, banking sector is one of the most preferred segments for investments by FPI. The Indian banking system consists of 27 public sector banks, 21 private sector banks, 49 foreign banks, 56 regional rural banks, 1,562 urban cooperative banks and 94,384 rural cooperative banks. The net investment of FII in banking sector as on 31st March 2019 was Rs 4,337 Crore. (NSDL) The study tries to find out the impact of different financial variables on the FPI shareholding of select private banks. It tries to frame a model which would to estimate the future values of FPI shareholding of the selected banks provided the values of significant financial variable corresponding to the required period is known. The select private sector banks are Axis Bank Ltd., HDFC Bank Ltd., Kotak Mahindra Bank Ltd., Yes Bank Ltd. and ICICI Bank Ltd and the study is based on quarterly data from June 2005 to March 2019 obtained from secondary sources.

II. REVIEW OF LITERATURE

(Kollamparambil & Banerjee, 2008) tried to find the impact of Foreign Institutional Investment on the performance of 25 listed banks of the Indian Banking Industry. The authors found that FII shareholding influenced the performance of public sector banks in a positive manner. This resulted in better managerial efficiency as they dodged matters relating to moral hazards. The effect of FII on private sector banks was found not to be as positive as on public sector banks. The reason behind this was that private sector banks did not face much challenges relating to moral hazards.

(Kalyanaraman, 2011) studied the shareholding pattern of FII in 17 private sector and 23 public sector banks as on march 2010 to find if any difference existed in the investment pattern across private sector and public sector banks.

The study found that there was a significant difference in the FII investment across private sector and public sector banks. Foreign Portfolio Investment was found more in private banks than public sector banks when FII shareholding was expressed as a percentage of total outstanding shares. When FII shareholding was expressed as a percentage of free float shares, no significant difference was found between FII shareholding of private sector banks and public sector banks as Government of India holds up to 51 per cent of total shares issued by public sector banks.

(Lakshmy, 2014) in her paper studied the relationship and impact of FII on sectorial indices of Bombay Stock Exchange i.e. SENSEX, Auto Index, Capital good index, Consumer durable index, Health care index, IT index, Metal index, oil and gas index and Bankex. Correlation coefficient and Granger causality test were used for analysing data from period of 2001- 2014. Her study confirmed that market was influenced by FII's. Most of the sectorial indices were in accordance to the trend of FII pattern, having a strong bearing on the return of the companies. FII net flows had a positive and direct impact on capital index, consumer durable index, oil and gas index, FMCG index and health care index.

(Aarugonda & Alekhya, 2016) Identified the trends in foreign portfolio investment (FPI) in India for a period of two years ranging from 2014 to 2016. In March 2015, 8214 FPI were registered but by March 2016 it increased to 8717. The authors analysed FPI net investment and found that there was negative net investment in both equity and debt in 2015 and 2016. During the study period a huge fall in FPI net investment was seen when compared to previous year. Liberalization of economic policy in 1992 permitted FIIs to enter the stock market (Joshi & Desai, 2018). FIIs were treated as sophisticated investors who were known to be aware of better market information. Many investors and market participants followed their foot prints to make market strategies. The authors focused on enquiring the behaviour of FIIs investment in India. Studies found that FIIs invest mostly in large cap companies considering their earning per share and dividend per share. Oil and gas, IT and banking were the most preferred sectors. Bureaucracy related issues, issues related to other developing countries, inflation, government policy were the major concern of FIIs while investing in India.

(Khanna, Sharma, & Vashisht, 2018) examined the role of financial performance in investment decision of FII. Foreign Institutional Investors considered firm's performance as an important parameter for investment decision in foreign country. The relationship between FII and the firm performance variables i.e. Firm size, book to market ratio, return on equity, leverage, and export rate was analysed using correlation analysis and regression analysis on yearly pooled data for 5 years. It was revealed that Firm Size, ROE and export to sales had a positive impact, whereas there was a negative impact of leverage and book to market ratio on FII.

1. Objectives

- To determine the impact of financial variables on the FPI shareholding of the Banks.
- To check whether the fitted model for FPI shareholding in each Banks in terms of significant financial variables is a good fit.

2. Research Methodology

• Research Design

The study is empirical in nature and an analytical approach has been adopted. Five Private banks listed in BSE are selected for the study using simple random sampling method without replacement. The selected banks are Axis Bank Ltd., HDFC Bank Ltd., Kotak Mahindra Bank Ltd., Yes Bank Ltd. and ICICI Bank Ltd.

• Period of the Study

The present study uses quarterly data from June 2005 – March 2019 for analysis so as to get the impression in both the bullish and bearish trend.

• Type of Data and Data Sources

The present study is based on secondary data. For this, several journals, magazines, newspapers, books, annual reports and website of the selected companies are referred. Various publications of Security and Exchange Board of India (SEBI) – Annual Report, Handbook of Statistics; Reserve Bank of India, Bombay Stock Exchange, National Stock Exchange are also reviewed. Prowess database monitored by CMIE (Centre for Monitoring Indian Economy) have been used for collecting data of financial variables of the Banks mentioned above. Data on FPI shareholding of the Banks was collected from the website of Bombay stock Exchange www.bseindia.com.

The collected data are analysed statistically using SPSS 20.0 (Statistical Package for Social Science 20th Version).

• Statistical Tools & Techniques Applied

The collected data are edited, classified and analysed by using all appropriate statistical tools and techniques. The present study has employed Analysis of Variance, Karl Pearson Coefficient of Correlation, Regression and Chi-Square Test for Goodness of Fit to test hypothesis of the study.

• Variables Used for Study

The financial variables used in the study includes FPI shareholding, Market Price, Earning Per Share (EPS), Price to Earnings Ratio (P/E Ratio), Book Value, Price to Book Value (P/B Ratio), Dividend Yield, Enterprise Value, Market Capitalisation, Beta, Net Profit and Operating Profit

III. HYPOTHESIS

H₀₁: No financial variables are making significant impact on FPI shareholding.

H₁₁: There exists a significant impact of financial variables on FPI shareholding.

H₀₂: There is no significant variation between observed and expected values i.e. the model is a good fit.

H₂₁: There is a significant variation between observed and expected values i.e. the model is not a good fit.

6. Analysis and Discussion

In order to eliminate multicollinearity problem, as a first step in modelling, the Correlation coefficients between different pairs of independent variables for all the Bank are presented in Table 6.1.

Axis Bank Ltd.

Table 6.1
Correlation Coefficient of Axis Bank Ltd. between different pairs of Financial Variables

	MARKET PRICE	EARNING PER SHARE	P / E RATIO	BOOK VALUE	P / B RATIO	YIELD	ENTERPRISE VALUE	MARKET CAPITALISATI ON	BETA	NET PROFIT	OPERA TING PROFIT
MARKET PRICE	1	-.251 .070	.311* .023	.020 .885	-.296* .032	-.167 .233	.972** .000	.997** .000	.877** .000	.415** .002	.937** .000
EARNING PER SHARE	-.251 .070	1	-.513** .000	.560** .000	-.156 .266	.141 .313	-.324* .018	-.278* .044	-.020 .888	.346* .011	-.162 .247
P / E RATIO	.311* .023	-.513** .000	1	-.482** .000	.483** .000	-.434** .001	.320* .019	.312* .023	-.023 .873	-.455** .001	.110 .432
BOOK VALUE	.020 .885	.560** .000	-.482** .000	1	-.479** .000	.469** .000	-.009 .951	.023 .871	.250 .071	.408** .002	.185 .185
P / B RATIO	-.296* .032	-.156 .266	.483** .000	-.479** .000	1	-.544** .000	-.365** .007	-.334* .014	-.455** .001	-.359** .008	-.529** .000
YIELD	-.167 .233	.141 .313	-.434** .001	.469** .000	-.544** .000	1	-.111 .427	-.143 .308	-.005 .973	.090 .521	.015 .915
ENTERPRISE VALUE	.972** .000	-.324* .018	.320* .019	-.009 .951	-.365** .007	-.111 .427	1	.982** .000	.855** .000	.357** .009	.958** .000
MARKET CAPITALISATI ON	.997** .000	-.278* .044	.312* .023	.023 .871	-.334* .014	-.143 .308	.982** .000	1	.874** .000	.397** .003	.947** .000
BETA	.877** .000	-.020 .888	-.023 .873	.250 .071	-.455** .001	-.005 .973	.855** .000	.874** .000	1	.582** .000	.918** .000
NET PROFIT	.415** .002	.346* .011	-.455** .001	.408** .002	-.359** .008	.090 .521	.357** .009	.397** .003	.582** .000	1	.515** .000
OPERATING PROFIT	.937** .000	-.162 .247	.110 .432	.185 .185	-.529** .000	.015 .915	.958** .000	.947** .000	.918** .000	.515** .000	1

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

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

The independent variables responsible for multicollinearity are eliminated using the information from correlation coefficients between different pairs of independent variables and the remaining independent variables - Market Price, EPS, P/E Ratio, Book Value, P/B Ratio, Dividend Yield and Net Profit were regressed on FPI shareholding.

The null and alternative hypothesis relating to Axis Bank is as follows:

H_{0IAB}: No financial variables are making significant impact on FPI shareholding.

H_{1IAB}: There exists a significant impact of financial variables on FPI shareholding.

In the process of attaining the final model, the variables P/E Ratio, P/B Ratio, Dividend Yield and Net Profit which shows insignificant impact on FPI are ignored and final model was fitted by using the remaining independent variables -Market Price, EPS and Book Value. The null hypothesis **H_{0IAB}** was rejected as p-value is 0.000 and the alternative hypothesis is **H_{1IAB}** is accepted.

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HDFC BANK Ltd.

Table 6.2
Correlation Coefficient of HDFC Bank Ltd.between different pairs of Financial Variables

	MARKE T PRICE	EARNING PER SHARE	P/E RA TIO	BOOK VALUE	P/B RATIO	YIELD	ENTERPRISE VALUE	MARKET CAPITALISA TION	BETA	NET PROFIT	OPERATI NG PROFIT
MARKET PRICE	1	.519** .000	.078 .575	.260 .057	.152 .272	.163 .239	.997** .000	.999** .000	.309* .023	.978** .000	.989** .000
EARNING PER SHARE	.519** .000	1	.081 .562	.445** .001	-.095 .494	.036 .795	.522** .000	.524** .000	.108 .436	.488** .000	.529** .000
P/E RATIO	.078 .575	.081 .562	1	.258 .060	.821** .000	-.414** .002	.060 .667	.065 .639	-.397** .003	-.076 .584	-.038 .783
BOOK VALUE	.260 .057	.445** .001	.258 .060	1	.005 .972	-.197 .154	.244 .075	.267 .051	.265 .053	.182 .187	.231 .093
P/B RATIO	.152 .272	-.095 .494	.821** .000	.005 .972	1	-.297* .029	.134 .335	.136 .327	-.479** .000	.019 .892	.039 .778
YIELD	.163 .239	.036 .795	-.414** .002	-.197 .154	-.297* .029	1	.184 .184	.167 .228	.158 .253	.217 .115	.206 .135
ENTERPRISE VALUE	.997** .000	.522** .000	.060 .667	.244 .075	.134 .335	.184 .184	1	.997** .000	.294* .031	.981** .000	.990** .000
MARKET CAPITALISATI ON	.999** .000	.524** .000	.065 .639	.267 .051	.136 .327	.167 .228	.997** .000	1	.311* .022	.978** .000	.990** .000
BETA	.309* .023	.108 .436	-.397** .003	.265 .053	-.479** .000	.158 .253	.294* .031	.311* .022	1	.386** .004	.363** .007
NET PROFIT	.978** .000	.488** .000	-.076 .584	.182 .187	.019 .892	.217 .115	.981** .000	.978** .000	.386** .004	1	.996** .000
OPERATING PROFIT	.989** .000	.529** .000	-.038 .783	.231 .093	.039 .778	.206 .135	.990** .000	.990** .000	.363** .007	.996** .000	1

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

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

The independent variables responsible for multicollinearity are eliminated using the information from correlation coefficients between different pairs of independent variables and the remaining independent variables -Market Price, EPS, P/E Ratio, Book Value, Dividend Yield and Beta were regressed on FPI shareholding. The null and alternative hypothesis relating to HDFC Bank is as follows:

H_{01HB}: No financial variables are making significant impact on FPI shareholding.

H_{11HB}: There exists a significant impact of financial variables on FPI shareholding. In the process of attaining the final model, the variables EPS, Book value, Dividend Yield, which shows insignificant impact on FPI are ignored and final model was fitted by using the remaining independent variables -- Market Price, P/E Ratio, Beta. The null hypothesis **H_{01HB}** was rejected as p value is 0.000 and the alternative hypothesis is **H_{11HB}** is accepted.

a) Kotak Mahindra Bank Ltd.

Table 6.3

Correlation Coefficient of Kotak Mahindra Bank Ltd. between different pairs of Financial Variables

	MARKET PRICE	EARNING PER SHARE	P/E RATIO	BOOK VALUE	P/B RATIO	YIELD	ENTERPRISE VALUE	MARKET CAPITALISATION	BETA	NET PROFIT	OPERATING PROFIT
MARKET PRICE	1	.705** .000	-.135 .336	.742** .000	-.099 .481	-.627** .000	.997** .000	.996** .000	-.422** .002	.948** .000	.966** .000
EARNING PER SHARE	.705** .000	1	-.432** .001	.752** .000	-.381** .005	-.614** .000	.715** .000	.681** .000	.141 .314	.804** .000	.773** .000
P/E RATIO	-.135 .336	-.432** .001	1	-.412** .002	.923** .000	.074 .598	-.163 .244	-.135 .336	-.507** .000	-.296* .032	-.255 .065
BOOK VALUE	.742** .000	.752** .000	-.412** .002	1	-.444** .001	-.579** .000	.729** .000	.711** .000	.060 .670	.722** .000	.723** .000
P/B RATIO	-.099 .481	-.381** .005	.923** .000	-.444** .001	1	.050 .721	-.129 .357	-.107 .445	-.473** .000	-.254 .066	-.227 .102
YIELD	-.627** .000	-.614** .000	.074 .598	-.579** .000	.050 .721	1	-.616** .000	-.591** .000	-.002 .986	-.602** .000	-.592** .000
ENTERPRISE VALUE	.997** .000	.715** .000	-.163 .244	.729** .000	-.129 .357	-.616** .000	1	.997** .000	-.405** .003	.952** .000	.973** .000
MARKET CAPITALISATION	.996** .000	.681** .000	-.135 .336	.711** .000	-.107 .445	-.591** .000	.997** .000	1	-.453** .001	.948** .000	.970** .000
BETA	-.422** .002	.141 .314	-.507** .000	.060 .670	-.473** .000	-.002 .986	-.405** .003	-.453** .001	1	-.321* .019	-.354** .009
NET PROFIT	.948** .000	.804** .000	-.296* .032	.722** .000	-.254 .066	-.602** .000	.952** .000	.948** .000	-.321* .019	1	.992** .000
OPERATING PROFIT	.966** .000	.773** .000	-.255 .065	.723** .000	-.227 .102	-.592** .000	.973** .000	.970** .000	-.354** .009	.992** .000	1

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

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

The independent variables responsible for multicollinearity are eliminated using the information from correlation coefficients between different pairs of independent variables and the remaining independent variables -Market Price, P/E Ratio, Dividend Yield and Beta were regressed on FPI shareholding.

The null and alternative hypothesis relating to Kotak Mahindra Bank is as follows:

H_{0IKB}: No financial variables are making significant impact on FPI shareholding.

H_{1IKB}: There exists a significant impact of financial variables on FPI shareholding.

In the process of attaining the final model, the variables Dividend Yield and Beta which shows insignificant impact on FPI are ignored and final model was fitted by using the remaining independent variables -- Market Price and P/E Ratio.

The null hypothesis **H_{0IKB}** was rejected as p value is 0.000 and the alternative hypothesis is **H_{1IKB}** is accepted.

b) Yes Bank Ltd.

Table 6.4

Correlation Coefficient of Yes Bank Ltd. between different pairs of Financial Variables

	MARKET PRICE	EARNING PER SHARE	P/E RATIO	BOOK VALUE	P/B RATIO	YIELD	ENTERPRISE VALUE	MARKET CAPITALISATION	BETA	NET PROFIT	OPERATING PROFIT
MARKET PRICE	1	.298* .032	-.254 .069	.644** .000	-.107 .448	.392** .004	.985** .000	.998** .000	.753** .000	.971** .000	.976** .000
EARNING PER SHARE	.298* .032	1	-.584** .000	.631** .000	-.475** .000	.776** .000	.376** .006	.268 .055	.741** .000	.430** .001	.383** .005
P/E RATIO	-.254 .069	-.584** .000	1	-.431** .001	.794** .000	-.547** .000	-.295* .034	-.238 .090	-.427** .002	-.377** .006	-.347* .012
BOOK VALUE	.644** .000	.631** .000	-.431** .001	1	-.322* .000	.605** .000	.665** .000	.623** .000	.813** .000	.682** .000	.638** .000

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	.000	.000	.001		.020	.000	.000	.000	.000	.000	.000
P/B RATIO	-.107	-.475**	.794**	-.322*	1	-.485**	-.173	-.112	-.317*	-.257	-.233
	.448	.000	.000	.020		.000	.220	.430	.022	.066	.097
YIELD	.392**	.776**	-.547**	.605**	-.485**	1	.470**	.369**	.648**	.531**	.490**
	.004	.000	.000	.000	.000		.000	.007	.000	.000	.000
ENTERPRISE VALUE	.985**	.376**	-.295*	.665**	-.173	.470**	1	.983**	.794**	.986**	.989**
	.000	.006	.034	.000	.220	.000		.000	.000	.000	.000
MARKET CAPITALISATION	.998**	.268	-.238	.623**	-.112	.369**	.983**	1	.733**	.968**	.976**
	.000	.055	.090	.000	.430	.007	.000		.000	.000	.000
BETA	.753**	.741**	-.427**	.813**	-.317*	.648**	.794**	.733**	1	.815**	.781**
	.000	.000	.002	.000	.022	.000	.000	.000		.000	.000
NET PROFIT	.971**	.430**	-.377**	.682**	-.257	.531**	.986**	.968**	.815**	1	.996**
	.000	.001	.006	.000	.066	.000	.000	.000	.000		.000
OPERATING PROFIT	.976**	.383**	-.347*	.638**	-.233	.490**	.989**	.976**	.781**	.996**	1
	.000	.005	.012	.000	.097	.000	.000	.000	.000	.000	

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

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

The independent variables responsible for multicollinearity are eliminated using the information from correlation coefficients between different pairs of independent variables and the remaining independent variables --Market Price, earning per share, P/E Ratio, Book Value, were regressed on FPI shareholding.

The null and alternative hypothesis relating to Yes Bank is as follows:

H_{01YB}: No financial variables are making significant impact on FPI shareholding.

H_{11YB}: There exists a significant impact of financial variables on FPI shareholding.

In the process of attaining the final model, the variables EPS and Book Value which shows insignificant impact on FPI are ignored and final model was fitted by using the remaining independent variables -- Market Price and P/E Ratio.

The null hypothesis **H_{01YB}** was rejected as p value is 0.000 and the alternative hypothesis is **H_{11YB}** is accepted.

c) ICICI Bank Ltd.

Table 6.5

Correlation Coefficient of ICICI Bank Ltd. between different pairs of Financial Variables

	MARKET PRICE	EARNING PER SHARE	P/E RATIO	BOOK VALUE	P/B RATIO	YIELD	ENTERPRISE VALUE	MARKET CAPITALISATION	BETA	NET PROFIT	OPERATING PROFIT
MARKET PRICE	1	-.405**	.106	-.279*	.090	-.359**	.914**	.991**	.630**	.598**	.728**
		.003	.452	.043	.523	.008	.000	.000	.000	.000	.000
EARNING PER SHARE	-.405**	1	-.043	.635**	.019	.155	-.287*	-.373**	-.012	.010	-.462**
	.003		.762	.000	.891	.269	.037	.006	.932	.941	.001
P/E RATIO	.106	-.043	1	-.058	.603**	-.588**	-.217	.052	-.337*	-.494**	-.308*
	.452	.762		.682	.000	.000	.119	.713	.014	.000	.025
BOOK VALUE	-.279*	.635**	-.058	1	-.167	.167	-.129	-.221	.167	.070	-.364**
	.043	.000	.682		.232	.233	.356	.112	.233	.620	.007
P/B RATIO	.090	.019	.603**	-.167	1	-.465**	-.197	-.027	-.532**	-.198	-.358**
	.523	.891	.000	.232		.000	.157	.850	.000	.155	.009
YIELD	-.359**	.155	-.588**	.167	-.465**	1	-.092	-.311*	.132	.223	.031
	.008	.269	.000	.233	.000		.511	.024	.348	.108	.827
ENTERPRISE VALUE	.914**	-.287*	-.217	-.129	-.197	-.092	1	.943**	.825**	.767**	.810**
	.000	.037	.119	.356	.157	.511		.000	.000	.000	.000
MARKET CAPITALISATION	.991**	-.373**	.052	-.221	-.027	-.311*	.943**	1	.707**	.630**	.753**
	.000	.006	.713	.112	.850	.024	.000		.000	.000	.000
BETA	.630**	-.012	-.337*	.167	-.532**	.132	.825**	.707**	1	.646**	.674**
	.000	.932	.014	.233	.000	.348	.000	.000		.000	.000
NET PROFIT	.598**	.010	-.494**	.070	-.198	.223	.767**	.630**	.646**	1	.610**
	.000	.941	.000	.620	.155	.108	.000	.000	.000		.000
OPERATING PROFIT	.728**	-.462**	-.308*	-.364**	-.358**	.031	.810**	.753**	.674**	.610**	1
	.000	.001	.025	.007	.009	.827	.000	.000	.000	.000	

	53	53	53	53	53	53	53	53	53	53	53
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** Correlation is significant at the 0.01 level (2-tailed).

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

The independent variables responsible for multicollinearity are eliminated using the information from correlation coefficients between different pairs of independent variables and the remaining independent variables- Market Price, earning per share, P/E Ratio, Book Value, P/B Ratio and Dividend Yield were regressed on FPI shareholding.

The null and alternative hypothesis relating to ICICI Bank is as follows:

H_{0IB}: No financial variables are making significant impact on FPI shareholding.

H_{1IB}: There exists a significant impact of financial variables on FPI shareholding.

In the process of attaining the final model, the variables Market Price, EPS, P/E Ratio, P/B Ratio and Dividend Yield which shows insignificant impact on FPI are ignored and

final model was fitted by using the remaining independent variable - Book Value.

The null hypothesis **H_{0IB}** was rejected as p value is 0.000 and the alternative hypothesis is **H_{1IB}** is accepted.

As mentioned above, these were based on the backward regression method and the best suitable multiple regression model was identified and the corresponding values of R, R² and Adjusted R² of that suitable model, corresponding F-values and its p-value of the ANOVA model are presented in Table 6.6. Regression Model of Independent variables on FPI shareholding was presented in Table 6.7 and the equation model was given in Table 6.8.

Table 6.6
Summary of Model and ANOVA

Bank	R	R ²	Adjusted R ²	DF	F Value	Sig.
Axis Bank Ltd.	0.883	0.78	0.766	(3,49)	57.77	0.000
HDFC Bank Ltd.	0.906	0.821	0.811	(3,50)	76.642	0.000
Kotak Mahindra Bank Ltd.	0.938	0.879	0.874	(2,50)	181.601	0.000
Yes Bank Ltd.	0.792	0.628	0.612	(2,49)	41.297	0.000
ICICI Bank Ltd.	0.724	0.525	0.515	(1,51)	56.315	0.000

Table 6.7
Regression Model of Independent variables on FPI shareholding

Bank	Significant Independent Variables in the model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Axis Bank Ltd.	(Constant)	26.587	1.57		16.938	0.000
	Market price	0.039	0.004	0.745	10.526	0.000
	Earnings per share	-0.311	0.079	-0.337	-3.954	0.000
	Book value	0.012	0.003	0.298	3.606	0.001
HDFC Bank Ltd.	(Constant)	45.041	2.98		15.115	0.000
	MARKET PRICE	0.009	0.001	0.977	15.12	0.000
	P/E RATIO	-0.335	0.074	-0.305	-4.561	0.000
	BETA	-11.152	1.93	-0.405	-5.78	0.000
Kotak Mahindra Bank Ltd.	(Constant)	26.016	0.791		32.884	0.000
	MARKET PRICE	0.016	0.001	0.878	17.685	0.000
	P/E RATIO	-0.044	0.009	-0.231	-4.654	0.000

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Yes Bank Ltd.	(Constant)	42.214	2.154		19.596	0.000
	MARKET PRICE	0.042	0.01	0.38	4.214	0.000
	P/E RATIO	-0.433	0.064	-0.605	-6.718	0.000
ICICI Bank Ltd.	(Constant)	48.68	1.078		45.162	0.000
	BOOK VALUE	-0.02	0.003	-0.724	-7.504	0.000

Table 6.8
Regression Equation

Bank	EQUATION
Axis Bank Ltd.	FPI= 26.587 + 0.039 (MP) – 0.311 (EPS) + 0.012 (BV)
HDFC Bank Ltd.	FPI= 45.041 + 0.009 (MP) – 0.335 (P/E) -11.152 (BETA)
Kotak Mahindra Bank Ltd.	FPI= 26.016 + 0.016 (MP) – 0.044 (P/E)
Yes Bank Ltd.	FPI= 42.214 + 0.042 (MP) – 0.433 (P/E)
ICICI Bank Ltd.	FPI= 48.68 - 0.020 (BV)

(From Table 6.6) Since $R^2 = 0.780$, it can be said that, in this model, 78 percent of the total variability in FPI shareholding is explained by the three variables - Market Price, EPS and Book Value for Axis Bank Ltd. In HDFC Bank Ltd., since $R^2 = 0.821$ it can be said that in the model 82.1 percent of the total variability in FPI shareholding is explained by the three variables Market Price, P/E Ratio, Beta. In Kotak Mahindra Bank Ltd., since $R^2 = 0.879$ it can be said that in this model 87.9 percent of the total variability in FPI shareholding is explained by the three variables Market Price and P/E Ratio. For Yes Bank Ltd., since $R^2 = 0.628$, it can be said that in this model, 62.8 percent of the total variability in FPI shareholding is explained by the two variables Market Price and P/E Ratio. For ICICI Bank Ltd., since $R^2 = 0.525$, it can be said that in this model, 52.5 percent of the total variability in FPI shareholding is explained by the one variable Book Value. The remaining financial variables under study are not contributing any further variation in FPI shareholding of the company.

Table 6.9
The values of Chi- square both calculated and Table with degrees of freedom and result.

Bank	Chi-Square Cal	DF	Chi-Square Table value	Result / Decision
Axis Bank Ltd.	27.29	52	69.832	Accepted
HDFC Bank Ltd.	6.71	53	7.993	Accepted
Kotak Mahindra Bank Ltd.	7.93	52	69.882	Accepted
Yes Bank Ltd.	64.83	51	68.669	Accepted
ICICI Bank Ltd.	13.71	52	69.832	Accepted

For the Second Hypothesis(H2),

H₂₀: There is no significant variation between observed and expected values i.e. the model is a good fit.

H₂₁: There is a significant variation between observed and expected values i.e. the model is not a good fit.

The Chi-square statistic value for testing the goodness of fit obtained using observed and expected values was calculated and compared with Table value in Table 6.9. This inferred that the null hypothesis is accepted since the calculated value is less than the Table value, hence can be said that “the model fitted was a good fit”. Therefore, it can be said that the model given in Table 6.8 is a Good fit to the FPI shareholding of Axis Bank Ltd., HDFC Bank Ltd., Kotak Mahindra Bank Ltd., Yes Bank Ltd. and ICICI Bank Ltd. This model will help to estimate the future values of FPI shareholding of the selected banks provided the values of significant financial variable mentioned in Table 6.8 corresponding to the required period is known.

IV. FINDINGS OF THE STUDY

- In Axis Bank Ltd., it is found that 78 percent of the total variability in FPI shareholding is due to three variables, viz., Market Price, EPS and Book Value.
- In HDFC Bank Ltd., the model explains 82.1 percent of the total variability in FPI shareholding with the help of three variables Market Price, P/E Ratio, Beta.
- The model for Kotak Mahindra Bank Ltd. explicates 87.9 percent of the total variability in FPI shareholding which is Market Price and P/E Ratio.
- For Yes Bank Ltd., the model describes 62.8 percent of the total variability in FPI shareholding with the help of two variables Market Price and P/E Ratio.
- 52.5 percent of the total variability in FPI shareholding is explained by the one variable Book Value for ICICI Bank Ltd.
- The financial variable which impacts the FPI shareholding in majority of the select banks is predominantly market price followed by Price to Earning (P/E) ratio.

V. CONCLUSION

Foreign Portfolio investors are the key source of capital for the Indian economy. Globalisation and participation of foreign investors helps in fostering stock market development. FIIs and the portfolio flows have contributed to the growth of stock market activity in India. A surge in the market capitalisation, volume and value traded is witnessed along with FII flows in the last 15 years. Series of regulatory easing like reduced compliance burden by SEBI, introduction of single application form for FPI registration facilitated offshore funds sentiment about Indian stock market. Other regulators like Reserve Bank of India (RBI) and Central Board of Direct Tax (CBDT) have also liberalised FPI norms. The result of the research conveyed that different financial variables impacted the FPI shareholding of the selected banks. Market price and Price to Earning (P/E) ratio were the key variables that impacted the FPI shareholding. It was also found that the model framed was a Good fit to the FPI shareholding of all the select banks. This model will help to estimate the future values of FPI shareholding of the selected banks provided the values of significant financial variable corresponding to the required period is known.

BIBLIOGRAPHY

1. Aarugonda, K., & Alekhya, P. (2016). A Study of Recent Trends in Foreign Portfolio Investment in India. *International Journal of Trade and Commerce-IIARTC*, 5(2), 274-280. Retrieved from <https://www.researchgate.net/publication/313837087>
2. (2019). Indian Brand Equity Foundation. Retrieved from <https://www.ibef.org/economy/foreign-institutional-investors.aspx>
3. (2015). Japan Bank of International Corporation (JBIC). Retrieved from <https://www.thehindubusinessline.com/economy/japanese-manufacturers-rank-india-as-most-preferred-investment-destination/article20960828.ece1>
4. Joshi, M. C., & Desai, J. N. (2018, February). Factors affecting Investment Behaviour of Foreign Institutional Investors: Perception of Indian Investors. *RESEARCH REVIEW International Journal of Multidisciplinary*, 3(2), 79 - 83. doi:DOI: 10.13140/RG.2.2.27625.60008
5. Kalyanaraman, L. (2011, January). FII Shareholding in Indian Banks - Is There Any Difference between Public Sector and Private Sector Banks? SSRN. doi:10.2139/ssrn.1736074
6. Khanna, M., Sharma, M., & Vashisht, A. (2018, April). Firm Performance Determinants of FII in Indian Financial Service Sector. *International Journal Of Management Studies*, v(2(7)), 119-123. doi:10.18843/ijms/v5i2(7)/14

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7. Kollamparambil, U., & Banerjee, I. (2008, February). FII share and bank performance: an empirical analysis of Indian banks. *Afro-Asian Journal of Finance and Accounting*, 1(1), 26-39. doi:10.1504/AAJFA.2008.016889
8. Lakshmy, S. (2014, July). A Study of the Impact of FII on the Sectoral Market Indices. *Journal of Commerce and Accounting Research*, 3(3), 43-47. Retrieved from <http://www.publishingindia.com/jcar/47/a-study-of-the-impact-of-fii-on-the-sectoral-market-indices/325/2373/>
9. www.bseindia.com
10. www.businessstandards.com
11. www.fpi.nsd.co.in
12. www.rbi.org.in