

**EXAMINE LOCAL EQUITY PREFERENCE IN
MUTUAL FUND PORTFOLIOS IN INDIA**

By

R. BALASUBRAMANIAN



O.P. JINDAL GLOBAL
[INSTITUTION OF EMINENCE DEEMED TO BE
UNIVERSITY]
A Private University Promoting Public Service

JINDAL GLOBAL BUSINESS SCHOOL (JGBS)

O.P. JINDAL GLOBAL UNIVERSITY
SONIPAT, HARYANA, INDIA
AUGUST 2023

**SUBMITTED IN
PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF
DOCTOR OF PHILOSOPHY**

UNDER THE GUIDANCE OF

Supervisor

Prof. Brajesh Kumar,
Professor & Vice Dean,
Jindal Global Business School,
O.P. Jindal Global University

Co-Supervisor

Prof. Chitrakalpa Sen,
Professor,
Jindal Global Business School,
O.P. Jindal Global University

ACKNOWLEDGEMENT

I would like to express my sincere thanks to my Guide Prof. Brajesh Kumar, Professor and Vice Dean and my Co-Guide Prof. Chitrakalpa Sen, Professor, Jindal Global Business School, O.P. Jindal Global University, Sonapat, Haryana, India for guiding me throughout the submission of this thesis. I would like to express my External Supervisor Prof. Rajesh Chakrabarti, Director, LM Thapar School of Management, Punjab, India for introducing me to this topic, suggesting seminal papers on this topic and guiding me through the research. I will be indebted to my Thesis Advisory Committee (TAC) for their constant support and belief in me and my work.

I also wish to thank Prof. Joji Rao and Prof. K.K. Pandey from the Office of Doctoral Studies, Jindal Global Business School, O.P. Jindal Global University, Sonapat, Haryana for guiding me during the PhD program and various suggestions to articulate the study and make the study more comprehensive. I also want to thank Prof. Anirban Ganguly, Chair of School Doctoral Committee (SDC) for some of his valuable comments during synopsis and abstract presentation. I also want to thank all other faculty members who had taught various courses during my coursework and term paper.

I am also thankful to JGBS Doctoral Office and all other administrative staff who have been a part of this journey since I joined the PhD program.

Last but not the least, I want to thank my wife, Nitya, my son, Shreyas and my mother-in-law Smt. Vijaya for their constant support and belief in everything I do.



R. BALASUBRAMANIAN

DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

A handwritten signature in blue ink, consisting of a large, stylized 'R' followed by a long, sweeping horizontal line.

Signature

Name – R BALASUBRAMANIAN

THESIS CORRECTION CERTIFICATE

This is to certify that the thesis entitled “Examining local equity preference in mutual fund portfolios in India” by R.Balasubramanian in fulfilment for the Award of **DOCTOR OF PHILOSOPHY (Jindal Global Business School, O.P. Jindal Global University, Sonipat, Haryana, India)**. Thesis has been corrected according to the instructions from supervisors and all the necessary changes/modifications have been inserted/incorporated in the thesis.



Supervisor

Prof. Brajesh Kumar
Professor & Vice Dean
Jindal Global Business School
Sonapat, Haryana, India



Co-Supervisor

Prof. Chitrakalpa Sen
Professor,
Jindal Global Business School
Sonapat, Haryana, India

THESIS COMPLETION CERTIFICATE

This is to certify that the thesis on “Examining local equity preference in mutual fund portfolios in India” by R.Balasubramanian (Student ID – 1802010) in partial fulfilment of the requirements for the award of the Degree of **Doctor of Philosophy (Jindal Global Business School, O.P. Jindal Global University, Sonapat, Haryana, India)** is an original work carried out by him under our joint supervision and guidance.

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Supervisor

Prof. Brajesh Kumar
Professor & Vice Dean
Jindal Global Business School
Sonapat, Haryana, India



Co-Supervisor

Prof. Chitrakalpa Sen
Professor
Jindal Global Business School
Sonapat, Haryana, India

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List of symbols

Σ	Sigma (or Summation)
Bn	Billion
Tn	Trillion
Rs.	Rupees
USD	US Dollar
Co.	Company
π	Pi symbol

List of abbreviations

AMFI	Association of Mutual Fund in India
AUM	Assets Under Management
BSE	Bombay Stock Exchange
CAPM	Capital Asset Pricing Model
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
ICAPM	International Capital Asset Pricing Model
IFS	Investment in Foreign Stock
IIP	International Investment Position
IMF	International Monetary Fund
LB	Local Bias
LIC	Life Insurance Corporation of India Ltd.
MSCI	Morgan Stanley Composite Index– Emerging Markets
MF	Mutual Funds
NSE	National Stock Exchange
RBI	Reserve Bank of India
SEBI	Securities and Exchange Board of India
SIP	Systematic Investment Product
SUUTI	Special Undertaking of Unit Trust of India
UTI	Unit Trust of India
VC	Venture Capital
WB	World Bank

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Abstract

According to modern portfolio theory, an optimal portfolio can be created by diversification of assets or securities with low or negative correlation. A higher degree of positive correlation within an economy indicates limits to mitigating risk by diversification. This suggests the possibility that risk reduction might be facilitated by diversifying securities portfolios internationally. In an optimum portfolio, investors should hold a well-diversified set of securities in which the share of domestic assets is proportional to the country's share of world market capitalisation. In reality, investors hold a disproportionately large part of domestic assets in their portfolios. This lack of international diversification is referred to as equity home bias or home bias. When the same phenomenon manifests as a preference to invest higher proportions in assets located close to the investor within domestic boundaries, it is referred to as local bias. Since the cause and effect of both home bias and local bias are similar, the terms home bias, equity home bias, local bias, location bias and location preference are used interchangeably in this study to represent proximity preference.

Despite gains from international diversification, there is a strong preference for domestic equities among investors. Various explanations for this investment behaviour have been presented in the past. Earlier studies point to economic barriers to international investment as one of the reasons for this phenomenon. Initially, these barriers included capital controls and foreign taxes as deterrents for international diversification. However, with extensive financial liberalisation across the globe including emerging economies, the capital controls have significantly reduced. So, the other economic barriers to diversification include home advantages in terms of lower transaction cost, no exchange risk, familiar regulatory regime, and absence of sovereign risk. Even these factors, have not been able to explain the home bias phenomenon completely. Among the various other reasons attributed to this phenomenon, the informational difference (information asymmetry) between domestic and foreign investors is attributed as one important factor, where the domestic investors have a cumulative information advantage over foreign ones. There are various theoretical and empirical research on the role of information asymmetry in home bias. Some dominant factors contributing to the information asymmetry include distance, language and culture, accounting standards or transparency and corporate governance. Of these factors, distance is the one that has been extensively studied. These studies suggest a direct relationship between distance and

information asymmetry in portfolio choice. As a corollary, international equity flow is inversely related to distance. One empirical study has analysed the effect of distance even on domestic portfolio choice by analysing the mutual fund portfolios in the US. This study suggests that informational difference in international portfolio investment holds good even in the domestic context.

However, later studies have shown that in the last few decades, financial globalisation has resulted in a reduction in home bias. Financial globalisation generally refers to an economic environment of liberalized capital movement, less transaction cost, speed of transaction fostered by electronic trading etc. but a critical aspects of financial globalization is increased access to information both within and across borders. Extensive use of information technology coupled with a reduction in communication costs has improved access to information in the last few decades. Information technology and communication cost are key to improving access to information, thereby reducing information asymmetry. An important study on the impact of information technology on increasing the distance between lenders and small borrowers validates this premise. Information technology has improved access to information for both lenders and investors. Similarly, better information technology has improved access to quality information, thus reducing the information asymmetry between investors and firms.

Unlike in advanced economies, studies on the equity home bias or local bias phenomenon in emerging economies like India has been limited. As mentioned, emerging economies are fast growing and their share in the world market capitalization has increased from 18% in 2013 to 26% in 2021. Amongst emerging markets, the weightage of India in the MSCI Emerging Market Index has grown sharply from 8.2% in 2019 to 14.5% in 2021, suggesting its importance in the emerging market space. Between 2013 and 2021, the Indian equity mutual funds (MF) have grown by 720% in terms of assets under management (AUM). Further, the equity MF as a percentage of total market capitalisation has increased from 2.5% to 5% during the same period. However, despite the growth, size and importance of India and its mutual fund sector, there is no study available especially on the home bias or local preference of equity mutual funds.

During Covid-19, prolonged lockdowns in various parts of the world saw increased usage of information technology resulting in the proliferation of digital communication technology and internet infrastructure in all walks of life. In India, all forms of information dissemination by listed corporates viz. quarterly results, investor presentations, annual general body meetings,

the outcome of board meetings etc. were increasingly being done digitally instead of physical meetings resulting in transforming traditional paper-based information and in-person engagements to online content and digital communication. A study highlighted that Covid-19, which led to a proliferation of remote communication technology and internet infrastructure has resulted in a further reduction in the levels of informational asymmetry prompting venture capital investors to invest in firms and businesses which are farther from their location. Further, data shows that foreign equity asset ownership in India during the pandemic period, increased from USD 2.6 bn in 2019 to USD 6.5 bn in 2021, which is a 146% jump. **The foreign asset ownership as a percentage of market capitalisation increased from 0.12% to 0.18% during 2019-2021 period** (*Reserve Bank of India International Investment Position*, 2022). Thus, initial studies and data point in the Indian context suggest a reduction in equity home bias, implying that the explanatory power of distance as a proxy for information asymmetry may have reduced.

There are also studies which show that during crisis periods or economic shocks, uncertainties compel investors to invest in familiar local financial assets which accentuates the equity home bias phenomenon. Some studies have shown that economic shocks and uncertainties like the global financial crisis of 2008 induced investors to liquidate their foreign investments and bring money back to the domestic markets. But as mentioned earlier, during this economic crisis, i.e. Covid-19, it was found that foreign equity asset ownership in India increased which suggests diversification away from home. Given the contradiction between the existing studies and broader data during Covid-19, it is a curious case to examine the proximity preference of investors in India during the pandemic and also compare the same with the pre-Covid 19 period. More specifically this study examines the local preference in equity mutual fund portfolios in India in recent times (post-Covid) and carry out a comparative study to examine the change in local bias phenomenon in mutual funds portfolio between pre-Covid and post-Covid periods (2013, 2019 and 2021). Lack of any study on local bias phenomenon in Indian mutual funds and a seeming change in investment trend during Covid-19 are potential issues in the economic and business context of the Indian financial sector which needs to be investigated.

Further, studies have shown that home bias is less for companies with larger market capitalization. A study on foreign ownership of Japanese stocks found that foreign investors overweight large firms and underweight small firms. Given the widely available information

on all listed companies in India, it is proposed to study whether location preference changes for different categories of MFs viz. Large-cap, Midcap, Large-midcap and Small-cap which invest in different sized companies in terms of market capitalisation.

Finally, studies in developed countries have shown that fund managers who exhibit local bias generate higher returns on their investments due to better access to information. This study examines whether fund managers in India generated better returns by investing in firms/companies closer to them or otherwise. To examine this, the comparison of local bias and the net returns is done for two periods – pre-Covid (2019) and post-Covid period (2021).

In this study, home bias or local bias is defined as the fund manager's preference for local stocks compared to a pre-specified benchmark (or market portfolio or benchmark index). This is a well-established methodology which has been used in various studies relating to the home/local bias phenomenon in mutual funds. This pioneering study on local bias in Indian MFs is done examining a total of 400 mutual funds – which is 90% of the total AUM of MFs in India – across these three time periods (2013, 2019 and 2021). The location and distance of over 1000 listed Indian companies are calculated in this study.

On calculating the local bias (LB) for 2013, 2019 and 2021, it was found that 2013 saw no local bias (-13%) suggesting that the average distance of the portfolio and the benchmark were not significantly different. However, by 2019, there was a negative local bias (-15%) which is statistically significant, suggesting that the fund managers invested in farther locations compared to the benchmark. By 2021, the extent of negative local bias became much larger (-49%) which shows that the mutual fund managers are investing 49% farther from the benchmark. This drastic increase in negative local bias (which means MFs investing in farthest locations) is mainly due to an increase in foreign stock investment by MFs. The findings suggest that distance as a proxy for information asymmetry has less explanatory power in the current context. Even when only domestic stocks are considered, the negative LB marginally increased from 2013 to 2021, suggesting that mutual funds have gradually increased the proportion of stocks which are located farther domestically. These results in post-Covid times suggest that investment decisions of mutual fund managers (who invest mainly in listed companies in India) are guided by factors other than distance. Further, the findings show that during Covid (an economic crisis) the MFs invested farther away from the benchmark and diversified internationally. This is contrary to the existing studies that suggest investors under-diversify and reduce their foreign investments during an economic crisis.

In the second part of the study, the empirical results show that local bias (or proximity preference) is absent in all categories of mutual funds irrespective of the size of the companies in which they invest. This is unlike the finding of earlier studies in which the local bias is less for companies with larger market capitalization. This suggests that there is no information-related advantage for any particular size of the company in which fund managers invest. These results also suggest that the investment decisions of mutual fund managers (who invest mainly in listed companies in India) are guided by factors other than distance.

Finally, when the local bias (LB) is compared with the net returns of various mutual fund schemes for two periods – pre-Covid (2019) and post-Covid period (2021) – the results are contrasting. The results of 2019 suggest that when fund managers invest in closer locations (local bias of +24%), the net returns generated are positive (+1.78%) whereas they generate negative net returns (-2.04%) when investing in a distant location (local bias of -130%). These results are consistent with the earlier studies that found fund managers generating abnormal returns by investing in companies closer to their offices. Existing literature links home bias or local bias to information advantage for the fund manager leading to better returns. However, in 2021, we find that mutual funds which invested in farthest locations (local bias of -188%) generated abnormally high net returns to the extent of +8.3% and mutual funds which has invested close to home location (closer than the benchmark to the extent of +17%), generated a negative net return of 3.3%. These results indicate that after Covid, fund managers have been able to generate better net returns by investing in farther locations. This shows that proximity which resulted in informational advantage earlier does not seem to be a significant factor in the post-Covid 19.

One of the contributions of this study to the literature is the local bias or home bias measure of equity mutual funds in India. While home bias has been extensively studied across various geographies, the home bias phenomenon in mutual funds in India is yet to be analysed. By comparing the local bias during pre-Covid and post-Covid periods, this study also contributes to the literature on the investment behaviour of fund managers in an emerging market like India in the backdrop of Covid-19. The study also compares the performance of mutual funds with a local bias and shows that mutual funds which invested farther away from the benchmark performed well and gave abnormal net returns to the investors in the post-Covid period. Given the fact that there has been no country-specific

study on India comparing the returns generated by mutual funds and local bias, this study contributes to the literature in this regard.

Theoretical model by Portes and Rey (2005) show that distance is one of the proxies for information asymmetry. This study examines the model to validate whether distance still has explanatory power in determining the portfolio flows in an economy. There are theoretical research on economic crises and capital flows which shows that during crisis periods or economic shocks, investors tend to invest in familiar local investments, which increases the equity home bias phenomenon. The outcome of this study is an important contribution to understand whether the earlier theoretical models on economic crisis hold good in the context of Covid-19.

Since this study is an analysis of equity mutual fund schemes in India, one of the practical implications of this study is the contribution to various stakeholders of mutual funds. The stakeholders include the regulator, mutual fund houses or fund managers and investors who invest in mutual fund schemes. One of the practical contributions of this study is providing a numerical measure of geographical diversification by calculating the local bias for every equity mutual fund scheme in India. This is one way of informing the stakeholders about the extent of geographical diversification of the respective mutual fund.

Although this study has examined the local bias before and after Covid-19, it has not analysed the reasons for the shift in the same. The scope of this study is limited to measuring the local bias of equity mutual funds in India in the pre and post-Covid period and not to analyse the reasons for the change. There could be many reasons for this change in home bias during Covid-19 viz. easy monetary policy and liquidity conditions leading to low-interest rates, information technology bridging the informational difference and improving commerce, stock market performance of various markets, country-specific idiosyncratic factors, industry-specific idiosyncratic factors, and so on. The recent development of increased use of information technology during Covid-19 is only a motivation and not a conclusion of this study. Analysing the reasons for the change in the home bias or local bias phenomenon during Covid-19 can be an interesting future area of study.

CHAPTER 1

INTRODUCTION

1.1. Overview

Home bias phenomenon refers to the inclination of investors to allocate larger proportions of their portfolio domestically. A variety of explanations including economic factors, behavioural factors and informational friction have been offered to explain this phenomenon. Among these, the one that has found extensive empirical support and attention is informational difference between domestic and foreign investors where the former have a cumulative information advantage over foreign investors. Informational difference is relevant even in the domestic context and information asymmetry exists in domestic investments too, depending on the proximity between the investor and the potential investment. The investors' inclination to invest higher proportions in assets located close to them within the boundaries of a country is known as local bias. Since the cause and effect of both home bias and local bias are similar, these terms are used interchangeably in this study. There are numerous theoretical and empirical research on the role of information asymmetry in home bias or local bias. Among the factors contributing to the information asymmetry, distance is one that has been extensively studied. These studies suggest a direct relationship between distance and information asymmetry in portfolio choice. As a corollary, international equity flow is inversely related to distance.

Despite the size of the Indian financial market, its weightage in the MSCI Emerging Market Index and the growth in the Indian mutual fund sector, there are no studies available on the local preference of equity mutual funds in India. Local bias phenomenon indicates geographical concentration of investment portfolios whereas the modern portfolio theory prescribes a well-diversified portfolio. After Covid, geographical diversification has become even more important given the location-specific spread of the disease and lockdowns which impact local economies. Geographical diversification at the domestic and international levels also helps investors in diversifying the risk emanating as a result of the high degree of positive correlation within **sectors**, geography and an economy.

During Covid-19, prolonged lockdowns in various parts of the world saw increased use of information technology in all walks of life. A study has highlighted that the pandemic, which led to a proliferation of remote communication technology and internet infrastructure, has resulted in a further reduction in the levels of informational asymmetry prompting venture capital investors to invest in firms and businesses which are farther from their location. Further,

data shows that foreign equity asset ownership in India during the pandemic period increased from USD 2.6 bn in 2019 to USD 6.4 bn in 2021, which is a 146% jump (*Reserve Bank of India International Investment Position*, 2022).

Table 1.1- Foreign Asset Ownership in India

Amount in USD Bn

S No	Year	FA - Foreign Assets	MC - Market Cap.	AFP - FA/MC
1	2019	2.6	2162	0.12%
2	2020	2.5	2552	0.10%
3	2021	6.4	3548	0.18%

Source – International Investment Position from RBI and Market Capitalisation (MC) data from World Federation of Exchanges (WFE).

Foreign assets ownership as a percentage of the market capitalisation of country gives the Actual Foreign Portfolio (AFP) which conveys the extent of foreign equity asset ownership. It may be seen in the Table 1.1 that AFP significantly increased from 0.12% to 0.18% during the 2019-2021 period. Thus, initial studies and data point in the Indian context suggest a reduction in equity home bias, implying that the explanatory power of distance as a proxy for information asymmetry may have reduced. There are also studies to show that during crisis periods or economic shocks, uncertainties compel investors to invest in familiar local financial assets which accentuates the equity home bias phenomenon. A study shows that during the global financial crisis of 2008, investors liquidated their foreign investments and brought money back to domestic markets. Existing studies also show that fund managers who exhibit proximity preference tend to generate higher returns on their investments due to easy access to information. However, during Covid-19, datapoint shows that foreign equity asset ownership in India increased, suggesting diversification away from home.

Based on the above issues, the research problem for this study is outlined as follows:

To examine the local bias phenomenon in the fast growing Indian equity mutual fund sector during “once in a century” pandemic and comparing it with the pre-Covid period to see changes in the investment behaviour of fund managers and effects of the change by comparing the local bias and net returns generated by the mutual funds.

Research Objectives - Given the issues highlighted above, it is a curious case to examine the proximity preference of fund managers of equity mutual fund portfolios in India in recent times (post-Covid) and carry out a comparative study to examine the change in local bias phenomenon in mutual funds portfolio between pre-Covid and post-Covid periods (2013, 2019 and 2021). Further, this research examines whether fund managers in the post-Covid period generated better returns by investing in firms/companies close to them or otherwise.

The study of local bias phenomenon has become more important after Covid-19 given the location-specific spread of the disease and lockdowns which impacted local economies, highlighting the importance of geographical diversification of investment portfolios. Lack of study on local bias phenomenon in Indian mutual funds and a seeming change in investment trend during an economic crisis are potential issues which need investigation to understand their effects on the larger economic and business principles of diversification of portfolio. Analysing these issues will also help in understanding the investment behaviour of institutional investors during the pandemic.

Based on the above overview, an introduction to this study “Examining local equity preference in mutual fund portfolios in India” is given. Three elements have been discussed to set the background for this study followed by current developments which motivate and present a context to the study. These three elements are; (i) home bias or local bias as a phenomenon and the existing empirical and theoretical studies on this phenomenon; (ii) Covid-19, an economic crisis which resulted in increased use of digital communication technology affecting information access; (iii) country-specific developments, more particularly the growth and importance of the Indian mutual funds industry. Based on the motivation and the context, the research problem is presented and the broad outline of the study is given.

1.2. Background

To begin this study, the existing empirical and theoretical studies on home bias or local bias phenomenon are introduced. The background study broadly covers the underlying concept of portfolio theory, empirical studies on international diversification of portfolios, home bias or local bias phenomenon, various reasons given to explain this phenomenon and some factors influencing home bias or local bias are analysed.

1.2.1. *Modern Portfolio Theory*

This theory was pioneered by American economist, Harry Markowitz in his work “Portfolio Selection” (1952). The portfolio allocation theory is based on risk and return on investments. It gives a method of selecting an optimal portfolio to maximise the overall return for a given level of risk (Markowitz, 1952). Risk in a portfolio is measured by the standard deviation of returns. This optimal portfolio can be created by diversification of assets or securities in a

portfolio by holding different assets with low or negative correlation. When a mixture of assets or securities are held in a portfolio there will be different combinations of risk and return. The fundamental assumption of this theory is that investors are risk-averse and will choose higher returns for a given level of risk. So, for a given level of risk (standard deviation of the portfolio), an investor gets the highest expected return from one particular portfolio. When each point in the risk-return graph giving the highest return for a particular portfolio with a given risk is plotted, it is termed the 'efficiency frontier'. The efficiency frontier represents those portfolios which give the highest return for a combination of stocks with the lowest risk (standard deviation). The combined risk of the portfolio is less than the risk of individual stocks for a given return. The benefit of diversification is one of the key findings of the efficiency frontier. The curvature of the efficiency frontier also tells about the limits to diversification or reducing the marginal return to risk. Once a portfolio is well diversified, the stock-specific risk or idiosyncratic risk or diversifiable risk can be eliminated but the portfolio still has market risk or systematic risk which is associated with market conditions. The risk remaining in a well-diversified portfolio is the systemic risk or market risk. A financial model which establishes a relationship between systemic risk and the expected returns of a portfolio is the capital asset pricing model (CAPM) (Lintner, 1965; Sharpe, 1964). This model is represented below.

$$r - r_f = \beta(r_m - r_f) \quad (1.1)$$

r is the expected return from a stock or portfolio

r_f is the risk-free return (typically from Treasury bills – T-bills)

r_m is the expected return from the market portfolio

β (*beta*) is the sensitivity of a stock or portfolio in comparison to the market (change in stock or portfolio change to every 1% change in market or covariance of stock/portfolio returns with market returns)

This model (Eq. 1.1) shows a linear relationship between the beta (a measure of risk) of a stock or portfolio and returns generated by such stock or portfolio. For every given beta or risk, this model gives the expected return to the investors.

As already discussed, diversification can reduce risk depending upon the correlation among security returns. If the return on securities is perfectly correlated, then any amount of diversification will not help in bringing down the risk. Within an economy, there is a strong tendency for economic phenomena to move more or less in the same direction. The existence of a relatively high degree of positive correlation within an economy indicates limits to mitigating risk by diversification. This suggests the possibility that risk reduction might be

facilitated by diversifying securities portfolios internationally. This establishes the importance of international diversification.

1.2.2. *International Diversification*

Given the limitations of diversification domestically, investors should hold a well-diversified portfolio of both domestic and international assets (Grubel, 1968; Levy & Sarnat, 1970). Assuming a frictionless global financial market, the international version of the capital asset pricing model (ICAPM) establishes that risk-adjusted returns are maximized when investors hold a world market portfolio in which the proportion of domestic assets should be equal to the country's share in the world market capitalisation. In ICAPM, the beta or sensitivity of a portfolio or country portfolio is measured with respect to the global market or global index. This model presumes that world capital is frictionless without any transaction and information cost with no constraints on capital flow across countries. In the 1980s, there were significant frictions in the international capital market which contributed to domestic preference. However, even after increasing financial integration, the domestic equity preference continued to remain a pervasive phenomenon. Even in the current times, investors continue to hold a large proportion of domestic assets in their portfolios. This phenomenon of holding disproportionate domestic assets in the portfolio is known as home bias.

1.2.3. *Home Bias*

Equity home bias can also be seen as a lack of international diversification (French & Poterba, 1991). Finance literature interprets the equity home bias as the difference between the actual holding of domestic equity and the share of domestic equity in the world market capitalisation. Another related expression for location preference is local bias. This is similar to home bias but within the boundaries of a country or intra-national phenomenon. Just as the home bias phenomenon refers to the tendency to invest larger proportions domestically, local bias indicates investors' inclination to invest higher proportions in assets located close to them (Gaar et al., 2020). Since the cause and effect of both home bias and local bias are similar in this study, home bias, equity home bias, local bias, location bias and location preference are used interchangeably to represent home bias or proximity preference. While calculating home bias, it is generally determined as the difference between the optimal portfolio holdings and actual portfolio holding of foreign stocks as a percentage of the optimal holding. While calculating the local bias of domestic mutual funds, the optimal portfolio holding is the

market portfolio or the benchmark index. In the domestic context of mutual funds, local bias is defined as the fund manager's preference for local stocks compared to a pre-specified benchmark or market portfolio or benchmark index (Coval & Moskowitz, 1999). In different business environments and different stages of the evolution of the financial markets, different explanations have been given to account for the home bias phenomenon.

1.2.4. Various Explanations to Home Bias

The equity home bias phenomenon has remained a puzzle in financial economics and significant theoretical and empirical work has been done in this area. A variety of reasons including economic factors, behavioural factors and informational friction have been offered to explain this phenomenon

1.2.4.1. Economic and Behavioural Factors

Earlier studies point to economic barriers to international investment as one of the reasons for this phenomenon. Barriers include capital controls and foreign taxes as deterrents for international diversification (Black, 1974). However, with extensive financial liberalisation across the globe including emerging economies, the capital controls have significantly reduced. So, the other explanations offered for the lack of diversification are home advantages in terms of lower transaction cost (Martin & Rey, 2004), no exchange risk (Fidora et al., 2007), regulatory regime or legal framework (Dahlquist et al., 2003; La Porta et al., 1999), and absence of sovereign risk. Although these barriers have been reduced in the liberalized global financial environment, studies suggest that the preference for domestic equities continues to remain. Some researchers explain the home bias phenomenon due to behavioural and cultural factors. One study used an online experiment to show that home bias exists because of behavioural bias as investors are emotionally driven and make investment decisions despite insufficient information (Lin & Viswanathan, 2016).

1.2.4.2. Information Asymmetry and Home Bias

Among the various explanations, the informational difference (information asymmetry) between domestic and foreign investors is attributed as one of the important factors. Informational difference refers to a situation where domestic investors have a cumulative information advantage over foreign investors. Also known as information failure, information asymmetry occurs when one of the parties to an economic transaction possesses greater

information or material knowledge than the other. Generally, the seller of a good or service possesses more information than the buyer, leading to asymmetric information (Akerlof, 1978). But the reverse can also be true where the buyer has more information than the seller, especially in the financial markets. There are various theoretical and empirical research on the role of information asymmetry in home bias. Some of the factors which affect or contribute to the information asymmetry include distance (Coval & Moskowitz, 1999), language and culture (Aggarwal et al., 2012; Anderson et al., 2011; Grinblatt & Keloharju, 2001), accounting standards or transparency and corporate governance (La Porta et al., 1999). Of these numerous factors which contribute to the information asymmetry in portfolio choice, distance is one that has been extensively studied. There are many researches which suggest a direct relationship between distance and information asymmetry in portfolio choice. As a corollary, international equity flow and equity holdings are inversely related to distance.

1.2.4.3. Information Asymmetry, Distance and Home Bias

According to the gravity model, bilateral trade between two countries (in goods) is proportional to size, measured by the GDP of the two countries, and inversely proportional to the geographic distance between them. From a theoretical standpoint, one of the initial studies (Martin & Rey, 2004) proposed a model similar to the ‘gravity equation’ of international trade for financial assets, establishing a relationship between distance and flow of financial assets. Subsequently, Portes and Rey (2005) examined international equity flows and found that the geographical distance between two countries acts as a good proxy for information asymmetries. They showed that physical distance affects international equity flows and international equity holdings significantly. Their model integrates elements of finance literature on asset trade (equity) and the gravity model of international trade (in goods). In their model, which is like the ‘gravity equation’ for financial assets trade (portfolio flows), equity market capitalisation represents the market size and distance is one of the proxies for informational asymmetries. This model also shows an inverse relationship between portfolio flows and distance between two countries. This inverse relationship can be attributed to information asymmetry. The model shows that the more two countries are located farther apart, the information asymmetry between them increases and the portfolio flows reduce. Portes and Rey (2005), use international telephone call traffic as another proxy for information flow in the same model and their empirical evidence suggests a positive relationship between them. This suggests that with increasing international call flow between

two countries, the financial asset trade also increases. Importantly, it is also seen that when regression is run with financial asset trade as the dependent variable and both distance and international telephone call flow as independent variables along with other control variables, the negative coefficient of distance is reduced implying that the information asymmetry caused by distance is mitigated by international telephone call flow (Portes & Rey, 2005).

There are many other studies which have empirically proven distance as a proxy for information asymmetry (Aviat & Coeurdacier, 2007; Huberman, 2001; Ivković & Weisbenner, 2005). These studies document the effect of distance on investors' decisions and their local bias and interpret distance as a proxy for information asymmetry. Coval and Moskowitz (1999) analysed the effect of distance on domestic portfolio choice by analysing the mutual fund portfolios in the US. Their study concluded that the explanation of informational differences in international portfolio investment holds good even in the domestic context. This study showed that home bias was relevant in the 90s despite advancements in information technology.

1.2.4.4. Financial Globalisation and Home Bias

However, another strand of literature shows that in the last few decades, financial globalisation has led to a reduction in home bias (Mercado Jr, 2013; Riff & Yagil, 2020). Financial globalisation generally refers to an economic environment of liberalized capital movement, less transaction cost, speed of transaction fostered by electronic trading etc. However one of the important aspects of financial globalization is increased access to information both within and across borders (Lane & Milesi-Ferretti, 2003). Increased use of information technology coupled with a drastic reduction in communication costs has improved access to information in the last few decades across the globe.

1.2.4.5. Information Technology and Home Bias

Information technology and communication cost are key to improving access to information thereby reducing information asymmetry. An important study on the impact of information technology on increasing the distance between lenders and small borrowers validates this premise (Petersen & Rajan, 2002). In this study, the increase in the distance between borrowers-lenders is attributed to the greater use of information technology by the latter. When lenders have cheaper, faster and better access to information, it enables them to lend to distant borrowers without diluting the underwriting standards.

The use of information technology in both computing and communication is important in improving the access to information. Communication modes like telephone, mail and other electronic medium significantly improves the speed of communication at a very low cost. Also, the use of information technology in the credit scoring model helps significantly improve the computing capability required for credit decisions (DeYoung et al., 2011). Information technology has not only improved access to information for lenders but also for investors. Developments in information technology like the Internet have further improved access to investors in the form of real-time information on financial markets, detailed financial reports and analysis through disclosures on websites. Since the Internet significantly improves access to quality information it reduces the information asymmetry between investors and firms and reduces the importance of distance in information access (Choi et al., 2014).

1.3. Context – Indian Mutual Funds

Compared to advanced economies, studies on the local bias phenomenon in a specific emerging economy like India have been limited. Emerging economies' share in the world market capitalization has increased from 18% in 2013 to 26% in 2021. Amongst emerging markets, the weightage of India in the MSCI Emerging Market Index has sharply grown from 8.2% in 2019 to 14.5% in 2021 suggesting its importance in the emerging market space. In the period 2013 to 2021, the Indian equity mutual funds (MF) have grown by 720% in terms of assets under management (AUM). Further, the equity MF as a percentage of total market capitalisation has increased from 2.5% to 5% during this period. Despite this growth, there is no study available on the local preference of equity mutual funds in India (Table 1.2).

Despite the annual equity mutual fund inflow (*Amfi Quarterly Data | Mutual Funds in India | Investment Plans*, n.d.) surging to over Rs.1.6 Tn in the post-Covid-19 period (Table 1.3) in India, it still seems that mutual fund managers are chasing only a few stocks. Even in the Nifty 100 and Nifty 500 index, 63% and 57% of weightage are given to companies located in Mumbai respectively, indicating limited geographical diversification.

Given the above backdrop, it is a curious case to examine the location preference in equity mutual fund portfolios in India in recent times and also carry out a comparative study to examine the change in local bias phenomenon in mutual fund portfolios for different periods.

Table 1.2 - Indian Mutual Funds Industry – Snapshot

	2013	2019	2021
MFs as a percentage of total household savings	2.5%	7.0%	9.8%
AUM of equity MF (Rs.in Bn)	1580	7550	12960
Total AUM of all MFs (Rs. in Bn)	6907	26328	37332
Equity MF/Total market capitalisation	2.5%	5.0%	5.0%
Total No of MF folio in India - in Mn	31.17	86.26	114.38
No. of equity MF folios in India - in Mn.	41.31	60.34	76.55
Weightage of India in MSCI - Emerging Market Index	6.5%	8.2%	14.5%

*AUM – Assets under management

This table shows the growth of the Indian mutual fund industry since 2013. These numbers have been calculated with data from various sources.

Source: RBI, AMFI, NSE, MSCI

Table 1.3 - Equity Mutual Fund Inflow in India

	EQUITY MF INFLOWS		Rs. In Bn
S No	Fin. Year	Inflow	
1	2013-14	-93	
2	2014-15	1214	
3	2015-16	740	
4	2016-17	704	
5	2017-18	1711	
6	2018-19	1256	
7	2019-20	841	
8	2020-21	-260	
9	2021-22	1644	

This table shows annual inflows into equity mutual funds from 2013 till 2022. Only the equity mutual funds inflow has been considered. The financial year in India is from April to March of next year.

Source: AMFI <https://www.amfiindia.com/research-information/amfi-quarterlydata>

Box. 1.1: The Evolution of Mutual Funds in India

There are many research studies which suggest that strong and diverse financial systems promote economic growth. Financial intermediaries and markets which constitute a financial system mainly perform the function of mobilising savings and allocating these resources for productive economic activities. To encourage savings and investment among Indian households and to ensure their participation in the gains accruing to businesses and

corporations from economic activities, the Government of India and Reserve Bank of India took the initiative of establishing Unit Trust of India (UTI) in 1963, which was India's first mutual fund. Until 1987, UTI was the only government-promoted mutual fund in India. By 1988, the total AUM of UTI was Rs.67 Bn. From 1987 until the early 1990s, India saw the entry of mutual funds which were set up by public sector banks (PSBs), Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC) and SBI Mutual Fund was the first non-UTI mutual fund set up in June 1987. By the end of 1993, the total AUM of mutual funds in India was Rs.470 Bn.

A significant development in the evolution of the Indian capital market happened in April 1992 when the Securities and Exchange Board of India (SEBI), an independent regulatory body for the securities market, was formed. The year 1993 marked the beginning of private mutual fund with Kothari Pioneer being the first to be registered in July 1993. In the next decade many private players including foreign sponsors set up mutual funds in India. By the end of 2003, there were close to 33 mutual funds with an AUM of Rs.1218 Bn. In 2003, UTI was bifurcated into Special Undertaking of Unit Trust of India (SUUTI) and UTI Mutual Fund following the repeal of the UTI Act 1963.

The next decade starting from 2003 saw some consolidation in private mutual funds. During this decade, the global financial crisis in 2008 resulted in the meltdown of markets, severely testing the investors' confidence in mutual funds as a viable investment product. Subdued market conditions coupled with some regulatory changes like the abolition of entry load on mutual fund investment resulted in sluggishness in mutual funds between 2010 and 2013. The AUM during this period remained stagnant around Rs. 5500-6500 Bn. The dawn of 2014 saw favourable market conditions and several progressive measures introduced by SEBI to revitalize the mutual fund industry. These resulted in a steady increase in the AUM as well as the number of investors in mutual funds. This period also saw the popularisation of Systematic Investment Products (SIP) and the penetration of mutual funds into tier II and tier III cities in the country. Since 2013-14, the mutual fund industry has made steady progress with the investor base (folios) more than tripling from 31 Mn in 2013 to 114 Mn in 2021, and AUM growing five times from around Rs. 7 Tn to Rs. 37 Tn in the same period. Equity MFs have grown around eight times from Rs.1.6 Tn to Rs.13 Tn in the years 2013 to 2021.

Source – Association of Mutual Funds of India (AMFI) <https://www.amfiindia.com/investor-corner/knowledge-center/history-of-MF-india.html>

Further, important studies have shown that home bias is less for companies with larger market capitalization. Kang and Stulz (1997) in their study of foreign ownership of Japanese stocks found that foreign investors overweight large firms and underweight small ones. Given the widely available information on all listed companies in India, it is important to understand whether location preference changes for different categories of MFs (Box. 1.2) viz. Large-cap, Midcap, Large-midcap and Small-cap which invest in different sizes of companies in terms of market capitalisation.

Box. 1.2: Different Categories of Mutual Funds in India

To bring about uniformity in characteristics and composition in different categories of mutual funds, SEBI came up with guidelines for the categorisation and rationalisation of mutual fund schemes in October 2017 (SEBI, n.d.). This was mainly to ensure uniformity in practice and standardize the scheme categories to enable small investors to easily evaluate different options available and take informed decisions to invest in mutual funds. For equity schemes, the following categories along with scheme characteristics were laid out by SEBI.

Sr. No	Category of Schemes	Scheme Characteristics	Type of the Scheme (uniform description of the scheme)
1	Multi Cap Fund	Minimum investment in equity & equity related instruments - 75% of total Assets with min 25% in large-cap, 25% in midcap and 25% in small-cap companies.	Multi Cap Fund- An open-ended equity scheme investing across large-cap, mid-cap, and small-cap stocks
2	Flexi Cap Fund	Minimum investment in equity & equity-related instruments - 65% of total assets	Flexi Cap Fund - An open-ended dynamic equity scheme investing across large cap, mid-cap, and small-cap stocks.
3	Large Cap Fund	Minimum investment in equity & equity related instruments of large-cap companies- 80% of total assets	Large Cap Fund- An open-ended equity scheme predominantly investing in large-cap stocks

4	Large & Mid Cap Fund	Minimum investment in equity & equity-related instruments of large-cap companies- 35% of total assets Minimum investment in equity & equity-related instruments of mid-cap stocks- 35% of total assets	Large & Mid Cap Fund- An open-ended equity scheme investing in both large-cap and mid-cap stocks
5	Mid Cap Fund	Minimum investment in equity & equity related instruments of mid-cap companies- 65% of total assets	Mid-Cap Fund- An open-ended equity scheme predominantly investing in mid-cap stocks
6	Small-cap Fund	Minimum investment in equity & equity related instruments of small-cap companies- 65% of total assets	Small Cap Fund- An open-ended equity scheme predominantly investing in small-cap stocks
7	Dividend Yield Fund	The scheme should predominantly invest in dividend-yielding stocks. Minimum equity investment- 65% of total assets	An open-ended equity scheme predominantly investing in dividend-yielding stocks
8a	Value Fund	The scheme should follow a value investment strategy. Minimum investment in equity & equity-related instruments - 65% of total assets	An open-ended equity scheme following a value investment strategy
8b	Contra Fund	The scheme should follow a contrarian investment strategy. Minimum investment in equity & equity-related instruments - 65% of total assets	An open-ended equity scheme following a contrarian investment strategy
9	Focused Fund	A scheme focused on the number of stocks (maximum 30). Minimum investment in equity & equity-related instruments - 65% of total assets	An open-ended equity scheme investing in a maximum of 30 stocks (mention where the scheme intends to focus, viz., multi-cap, large cap, mid cap, small cap)
10	Sectoral/ Thematic	Minimum investment in equity & equity related instruments of a particular	An open-ended equity scheme investing in the sector (mention the sector)/ An open-ended equity scheme following theme (mention the theme)

		sector/ particular theme-80% of total assets	
11	ELSS	Minimum investment in equity & equity related instruments - 80% of total assets (in accordance with Equity Linked Saving Scheme, 2005 notified by Ministry of Finance)	An open-ended equity-linked saving scheme with a statutory lock-in of 3 years and tax benefit

The composition and categorisation of mutual funds have undergone changes in the past as well. Based on the categorization in 2017, some of the scheme categories were changed to comply with the current guidelines of SEBI.

Source – SEBI circular on Categorization and Rationalization of Mutual Fund Schemes, October 2017 and subsequent circulars in September and November 2020 on Multicap Fund and Flexi-cap Fund respectively.

Finally, studies in developed countries have shown that fund managers who exhibit location preference tend to generate higher returns on their investments due to better access to information. On looking at the broader returns from equity mutual funds in India in the last 3 and 5 years from the sample (Table 1.3), we find that mutual funds have not consistently outperformed the benchmark returns. Despite a seemingly concentrated investment domestically, the mutual funds, in general have not been able to outperform the benchmark consistently for a sustained period of time. It is a curious case to find out whether fund managers in India generated better returns by investing in firms/companies closer to them or otherwise.

Table 1.4 - Indian Equity MF performance – 3-year and 5-year Performance

October 2021			
Avg. 5-year returns – MFs	Avg. 5-year returns – B'mark	Difference	No of MFs
15.56%	16.21%	-0.65%	140
Avg. 3-year returns – MFs	Avg. 3-year returns – B'mark	Difference	No of MFs
21.89%	21.71%	0.18%	160

B'Mark – Benchmark, MFs – Average return of Mutual Fund Schemes considered for the study
This table gives the 3-year and 5-year returns of all equity mutual funds which have been considered for this local preference study.

Source: AMFI

1.4. Motivation for the Study

During Covid-19, prolonged lockdowns in various parts of the world saw increased usage of information technology resulting in the proliferation of digital communication technology and internet infrastructure in all walks of life. **One of the World Bank Reports (World Development Report, 2021) mentions about the increased use of videoconferencing facility across the world during Covid-19. It states that “ the three main platforms reported around 700 million daily users in March–April 2020. Zoom’s average number of users jumped from 10 million in December 2019 to 300 million in April 2020. Cisco’s Webex recorded 324 million users in March 2020, doubling from January 2020. Microsoft Teams had 75 million daily users in April 2020.”**

Furthermore, World Bank data shows that internet users as a percentage of population significantly increased from 54% in 2019 to 60% in 2020 for the world. For India also, this number increased from 30% in 2019 to 43% in 2020 showing a 43% jump during Covid. While the internet user base has been growing in India, the growth in 2020 was significantly higher on a large base (World Development Indicator, World Bank Open Data).

In the world of investments and financial markets, there has been swift adoption of remote communication technology that has transformed traditional paper-based information and in-person engagements to online content and digital communication. During Covid-19, all forms of information dissemination by listed corporates in India viz. quarterly results, investor presentations, annual general body meetings, outcomes of board meetings etc were increasingly being increasingly done digitally. Various studies have shown that web-based disclosure of information by companies lowers information asymmetry (Blankespoor et al., 2014; Gajewski & Li, 2015). A study in China highlighted that Covid-19 led to the proliferation of remote communication technology and internet infrastructure which resulted in a further reduction in informational asymmetry between investors and investee companies, prompting venture capital investors to invest in businesses which were farther from their location (Han et al., 2021). Further, the Reserve Bank of India’s (RBI) report on International Investment Position (IIP) of India shows that foreign equity asset ownership in India increased from USD 2.6 bn in 2019 to USD 6.5 bn in 2021, which is a 146% jump during the pandemic period (*Reserve Bank of India International Investment Position*, 2022). Thus, initial studies and broader data in the Indian context suggest that investors invested in farther locations and this increase in foreign equity asset ownership also suggests a reduction in equity home bias. These findings indicate that the

explanatory power of distance as one of the proxies for information asymmetry may have been reduced.

There are also studies which show that during crisis periods or economic shocks, uncertainties compel investors to invest in familiar financial assets which accentuates the equity home bias phenomenon (Cao et al., 2011). Some studies have shown that economic shocks and uncertainties like the global financial crisis of 2008 induce investors to liquidate their foreign investments and bring money back to the domestic markets. There are research studies on foreign and domestic flows, especially during the financial crises which suggest that during the growth cycles, foreigners invest more abroad and the capital inflows increase while domestic investors invest in countries other than their home country. During a financial crisis, there is a sharp reduction in inflows from foreigners and domestic investors stop investing abroad (Forbes & Warnock, 2012). The same holds good even for lending by banks and financial institutions. A study on the global market for syndicated bank loans also points to the phenomenon of “flight home” when there is a crisis in the international financial markets (Giannetti & Laeven, 2012). Contrary to these findings, during the Covid-19 pandemic which was also an economic crisis, one of the data points in the Indian context suggests that foreign equity asset ownership in India increased which suggests diversification away from home. Given the apparent contradiction in a data point during Covid-19 and past studies on international investment during economic crises, it is a curious case to examine the location preference of Indian investors.

1.5. Research Problem and Outline of this Study

Given the context of Indian mutual funds and the motivation from developments in recent times, the following are potential issues in the economic and business context of India that require further study:

Potential Issue 1a. Literature review on home bias or local bias phenomenon suggests that there are hardly any studies on local bias phenomenon in an emerging economy like India. Most of the studies on home bias and local bias are focussed on developed economies. Given the growth and importance Indian equity mutual fund (MF) sector in the recent times, it is important to study the location preference among mutual fund managers.

Potential Issue 1b. It is evident from existing literature that crisis periods or economic shock uncertainties compel investors to invest in familiar domestic financial assets which accentuates the home bias phenomenon. During global financial crisis of 2008, studies show that investors liquidated their foreign investment and brought money back to the domestic markets. To the contrary, during the Covid-19 pandemic which was also an economic crisis, data point on foreign equity ownership of India suggests that it increased significantly which implies diversification away from home.

Potential Issue 1c. Covid period characterized by prolonged lockdowns in various parts of the world led to increased use of remote communication technology in business. This ideally should reduce the information friction among investors and firms. A study in China also suggest that Covid-19 led to a proliferation of remote communication technology and internet infrastructure prompting venture capital investors to invest in businesses which are farther from their location. Given these developments during Covid-19, it is a curious case to examine the local bias in the Indian context.

Potential Issue 2: Studies suggest that local bias is lesser for large companies as information on such companies is widely available. Given the widely available information on all listed companies in India, it is proposed to study whether local bias for listed companies is still dependent on the size of the companies.

Potential Issue 3: Studies on home bias phenomenon have shown that fund managers who exhibit home bias tend to generate higher returns on their investments due to better access to information. This trend needs to be examined for Covid-19 period for India.

Based on the above issues, the research problem for this study can be outlined as follows:

Research Problem - To examine the local bias phenomenon in the fast-growing Indian equity mutual fund sector during “once in a century” pandemic and comparing it with the pre-Covid period to see changes in the investment behaviour of fund managers and the effects of the change by comparing the local bias and the net return of mutual funds.

Proposed study based on the Potential Issues 1a to 1c:

1. Given the above backdrop, it is a curious case to examine the local bias in equity mutual fund portfolios in India in recent times (post-Covid).
2. A comparative study to examine the change in local bias in mutual fund portfolios between pre-Covid and post-Covid periods (2013, 2019 and 2021) will help in understanding the influence of the pandemic which subsumes the possible influence of information technology on the local bias or proximity preference.

Proposed study based on Potential Issue 2: It is proposed to study whether location preference changes for different categories of MFs viz. Large-cap, Midcap, Large-midcap and Small-cap which invest in different sized companies in terms of market capitalisation.

Proposed study based on Potential Issue 3: To examine this, the comparison of local bias and the net returns is done for two periods – pre-Covid (2019) and post-Covid period (2021) to see whether there has been any change.

To examine all the above issues, this pioneering study on the local bias phenomenon in Indian MFs is done by examining a total of 400 mutual funds across three periods (2013, 2019 and 2021). These MFs comprise 90% of the total AUM of MFs in India. The location and distance of over 1200 Indian listed companies are analysed in this study.

1.6. Theoretical and Practical Contributions of the Study

The theoretical model of Portes and Rey (2005) shows that distance is one of the proxies for information asymmetry. According to this model, international equity flow and equity holdings are inversely related to distance and empirical findings have strongly supported this model in the past. Given the significant improvement in information technology during Covid-19, this study examines the above model to validate whether distance still has explanatory power in determining portfolio flows in an economy. There are also theoretical research on economic crises and capital flows that show that during crisis periods or economic shocks, investors tend to invest in familiar local investments, which increases the equity home bias phenomenon. This study compares the local bias phenomenon before and after Covid-19. The outcome of this study is an important contribution to understand whether the earlier theoretical models on economic crises hold good in the context of Covid-19.

Since this study is an analysis of equity mutual fund schemes in India, it is a valuable contribution to the various stakeholders of MFs. The stakeholders include the regulator,

mutual fund houses or fund managers and investors who invest in mutual fund schemes. One of the practical contributions of this study is providing a numerical measure of geographical diversification by calculating the local bias for every equity mutual fund scheme in India. This is one way of informing the stakeholders about the extent of geographical diversification of their respective mutual funds.

After Covid, geographical diversification has become ever more important given the location-specific spread of the disease and lockdowns which impact local economies. Geographical diversification at the domestic and international levels helps investors in diversifying the risk emanating as a result of the high degree of positive correlation within sectors, geography and economy. This study helps understand the extent of local bias in the Indian equity mutual funds sector and identify those MFs which have potential risk of a geographically concentrated portfolio. For investors and fund managers, the return generated by mutual funds for a given risk is important. Another practical contribution of this study is to compare the extent of local bias with the net returns generated by the mutual funds in India, thus giving vital information on the performance of various MF schemes vis-à-vis the local bias of each scheme before and after Covid-19.

1.7. Chapter Conclusion

This chapter introduces the concept of home bias and local bias and the various explanations presented in the past to explain this phenomenon. Studies have shown that information asymmetry is an important factor in explaining home bias and information technology plays a key role in reducing this information asymmetry. During Covid-19, there has been a proliferation of digital information technology which suggests a reduction in information friction. In the last decade, Indian mutual funds have grown considerably but despite the size and importance of the Indian financial market, there have been no studies to measure the local bias in the Indian equity mutual funds portfolio. Against the backdrop of a significant increase in the size and importance of the mutual fund portfolios in India and Covid-19, this study measures the local bias before and after the pandemic to examine whether there has been any significant change in the local bias phenomenon. The study further investigates local bias for different categories of mutual funds and also examines whether a change in the local bias phenomenon has resulted in a change in the returns generated by mutual funds in India.

CHAPTER 2

REVIEW OF LITERATURE

2.1. Overview

This chapter on the review of literature aims to understand the extant studies, both empirical and theoretical on the home bias phenomenon. These studies broadly cover the current body of knowledge on home bias and local bias across multiple geographies studied in different contexts. To ensure a systematic review of the literature, different areas of studies within the home bias literature is discussed. The literature review has been arranged based on the three objectives of the study which were outlined in Chapter 1 – Introduction. These three objectives include examining the local bias in equity mutual fund portfolios in India in recent times and comparing the same with the pre-Covid period; studying whether location preference changes for different categories of MFs viz. Large-cap, Midcap, Large-midcap and Small-cap which invest in different sized companies in terms of market capitalisation; and finally the comparison of local bias and the net returns of mutual funds for two periods – pre-Covid (2019) and post-Covid period (2021).

The theoretical underpinning of the home bias phenomenon is the modern portfolio theory based on which diversification of portfolio evolves. This concept is extended further in the context of international diversification and subsequently home bias and local bias phenomenon are defined and explained. Out of the many possible reasons for home bias explained by authors, information asymmetry is a predominant factor. Some works on the factors that affect information asymmetry are reviewed. Some theoretical studies on information asymmetry and distance are also reviewed. As the context of this study is equity mutual funds in India, some of the literature on home bias in emerging economies and India are analysed. Another strand of literature on the home bias phenomenon during the economic crisis and Covid is reviewed as these developments are the motivation for this study. For the other two research objectives too viz. local bias changes for different categories of MFs and comparison of local bias and net returns for two periods the existing literature is reviewed. After the systematic literature review, a summary of the literature review along with citations and research gaps is presented. Based on the research gaps, the research questions and research objectives are determined, following which the theoretical premise of this study is articulated. Once the theoretical premise is set, the study examines these theoretical premises

in the current context (post-Covid) by comparing the outcome of this study with the outcome of some of these well-established theoretical models.

2.2. Systematic Literature Review

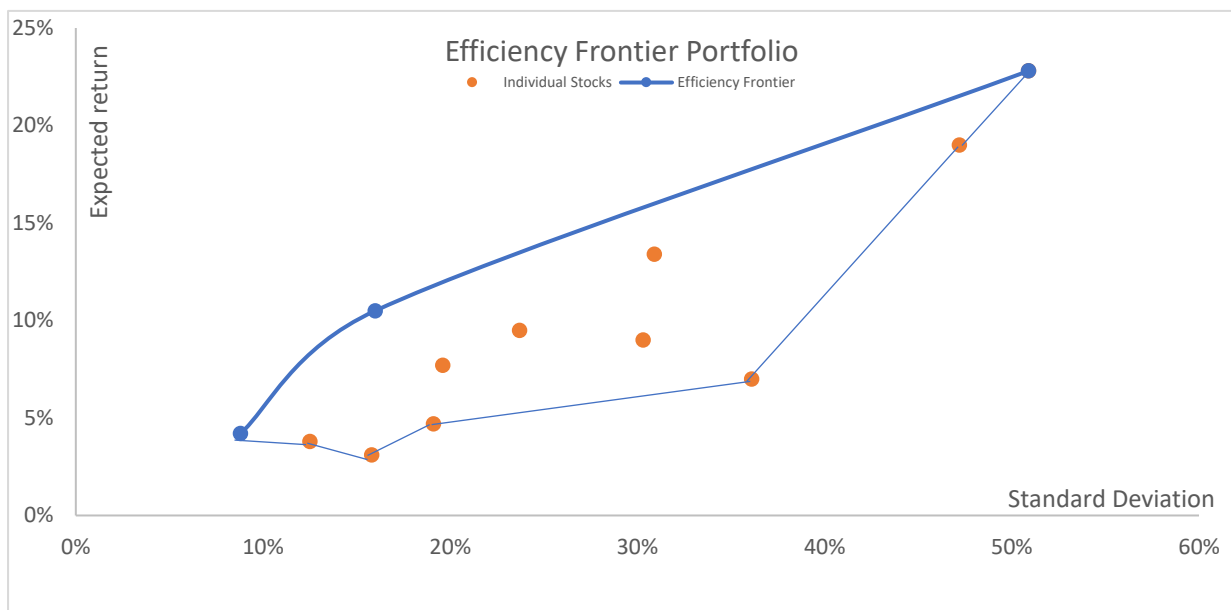
Through a systematic literature review of existing empirical and theoretical studies on home bias/local bias phenomenon, a background is set for identifying the research gaps. The background study broadly covers the underlying concept of portfolio theory, empirical studies on international diversification of portfolios, home bias and local bias phenomenon, various reasons given to explain this phenomenon and some of the factors deeply influencing home bias.

2.2.1 Modern Portfolio Theory

Modern portfolio theory was pioneered by American economist Harry Markowitz in his work “Portfolio Selection” (1952). This work is a portfolio allocation theory based on risk and returns on investments (Markowitz, 1952). It gives a method of selecting an optimal portfolio to maximise the overall return for a given level of risk. Risk in a portfolio is measured by the standard deviation of returns. This optimal portfolio can be created by diversification of assets or securities in a portfolio by holding different assets with low or negative correlation. When different proportions of assets or securities are held in a portfolio there will be different combinations of risk and return.

The fundamental assumption of this theory is that investors are risk-averse and will choose higher returns for a given level of risk. So, for a given level of risk (standard deviation) of a group of securities, the investor gets the highest expected return from one particular portfolio. When each point in the risk-return graph giving the highest return for a particular portfolio with a given risk is mapped, it is termed the efficiency frontier (Figure 2.1).

Figure. 2.1: Efficiency Market Portfolio



Source – Author. A broad illustration of the Efficiency Frontier Portfolio

In this figure, each dot represents the expected returns and risk (standard deviation) of 10 individual stocks. The shaded area shows the expected return and risk of the combination of these 10 stocks. The dark shaded line on the leftmost side represents the efficiency frontier where the expected returns are highest for a given level of risk.

The efficiency frontier represents those portfolios which give the highest return for a combination of stocks with the lowest risk (standard deviation). The combined risk of the portfolio is less than the risk of individual stocks for a given return. The benefit of diversification is one of the key findings of the efficiency frontier. The curvature of the efficiency frontier also tells about the limits to diversification or reducing the marginal return to risk.

Once a portfolio is well diversified, the stock-specific risk, also called idiosyncratic risk or diversifiable risk can be eliminated but the portfolio still has market risk or systematic risk associated with market conditions. A financial model which establishes a relationship between systemic risk and the expected returns of a portfolio is the capital asset pricing model (CAPM) (Lintner, 1965; Sharpe, 1964). (Eq.2.1)

This model is represented as

$$r - r_f = \beta(r_m - r_f) \quad (2.1)$$

r is the expected return from a stock or portfolio

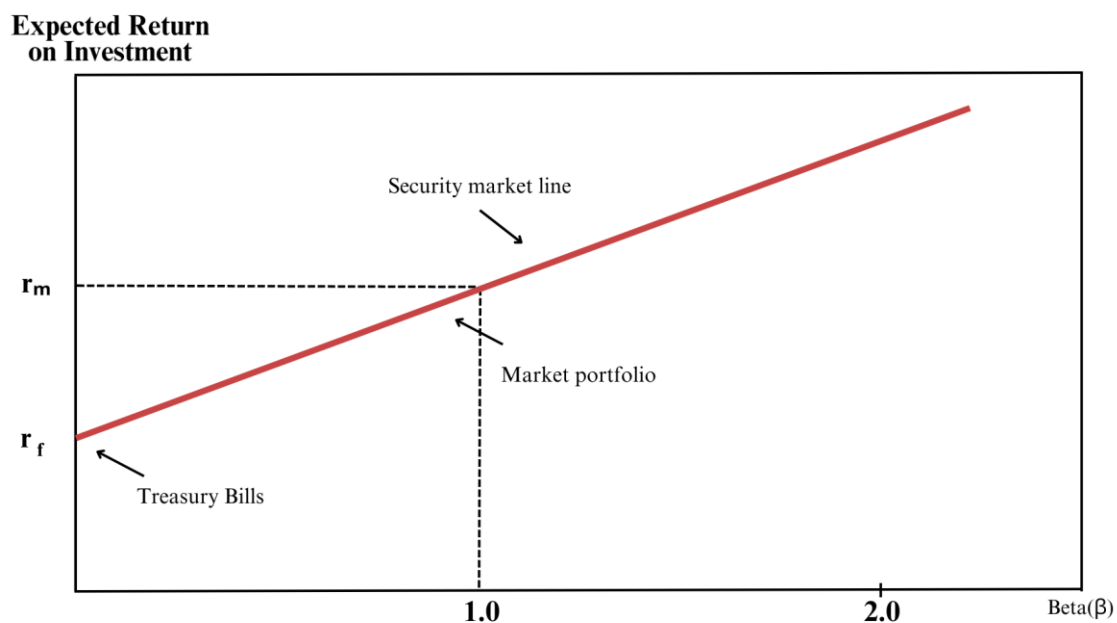
r_f is the risk-free return (typically from Treasury bills – T-bills)

r_m is the expected return from the market portfolio

β (beta) is the sensitivity of a stock or portfolio in comparison to the market (change in stock or portfolio change to every 1% change in market or covariance of stock/portfolio returns with market returns)

The CAPM shows a linear relationship between the beta (a measure of risk) of a stock or portfolio and returns generated by such a stock or portfolio. For every given beta or risk, this model gives the expected return to the investors. According to this model, all investments plot along the sloping line called the security market line (Figure 2.2).

Figure. 2.2: Security Market Line



Source – Author. A broad illustration of the Security Market Line.

This graph represents the capital asset pricing model where the expected return (or risk premium) of each portfolio is proportional to its beta. The risk premium is the difference between the expected return on the portfolio and the risk-free rate. Treasury bill (T-bill) is considered risk free and the risk premium for T-bill is zero.

An important point to be noted here is that the degree to which diversification can reduce risk depends upon the correlation among security returns. If the return on securities is perfectly correlated, then any amount of diversification will not help in bringing down the risk. Within an economy, there is a strong tendency for economic phenomena to move more or less in the same direction. The existence of a relatively high degree of positive correlation within an economy indicates limits to mitigating risk by diversification. This suggests the possibility that risk reduction might be facilitated by diversifying securities portfolios internationally.

Post-liberalization the extent of correlation between major international markets until 2010 shows an increase thus reducing the benefits of international diversification (Levy & Levy, 2014). However, a recent empirical study shows that the extent of correlation in international markets from 2010 onwards has reduced which suggests the economic benefits of international diversification (Levy, 2017).

2.2.2. *International Diversification*

Given the limits to diversification domestically, investors should hold a well-diversified portfolio of both domestic and international assets. Gains from international diversification have been well documented (De Santis & Gerard, 1997; Eldor et al., 1988; Grubel, 1968; Levy & Sarnat, 1970; Solnik, 1974b).

Assuming a frictionless global financial market, the international version of the capital asset pricing model (ICAPM) establishes that risk-adjusted returns are maximized when investors hold a world market portfolio in which the proportion of domestic assets is proportional to the country's share in the world market capitalisation (Sercu, 1980; Solnik, 1974a). In ICAPM, the beta or sensitivity of a portfolio or country portfolio is measured with respect to the global market or global index. This model presumes that world capital is frictionless without any transaction and information costs and no constraints on capital flow across countries. In the 1980s, there were significant frictions in the international capital market which contributed to domestic preference. However, even after increasing financial integration, the domestic equity preference continued to remain a pervasive phenomenon. Even in the current times, investors continue to hold a large part of domestic assets in their portfolios. This phenomenon of holding disproportionate domestic assets in the portfolio is known as home bias.

2.2.3. *Home Bias Phenomenon*

Strong preference for domestic equities despite gains from international diversification is well known (French & Poterba, 1991). This lack of international diversification is referred to as equity home bias or home bias. Finance literature records another phenomenon which is local bias or location bias (Gaar et al., 2020). This is similar to home bias but within the boundaries of a country or intra-national phenomenon. It is generally related to the distance within the country. Just as the home bias phenomenon refers to the tendency to invest larger proportions domestically, local bias indicates investors' inclination to invest higher proportions in assets located close to them. It is also referred to as "home bias at home"

(Coval & Moskowitz, 1999). A study on equity investments by German individual investors suggests that local bias is not restricted to national borders and extends to cross borders (Baltzer et al., 2013). Since the cause and effect of both home bias and local bias/location bias are similar, in this entire study, home bias, equity home bias, local bias, location bias, and location preference are used interchangeably to represent home bias or proximity preference.

The equity home bias is generally represented as the difference between the actual holding of domestic equity and the share of domestic equity in the world market capitalisation (Coeurdacier & Rey, 2013). Early studies have established that despite gains from international diversification, there is a strong preference for domestic equities among investors in the international market. Literature suggests that home bias is a perennial feature of the international financial market. Economists have also termed this well-known puzzle in international finance as the “disinclination of capital to migrate” (Flandreau, 2006). Home bias is determined as the difference between the optimal portfolio holdings and actual portfolio holding of foreign stocks as a percentage of the optimal holding. While calculating the local bias of domestic mutual funds, the optimal portfolio holding is the market portfolio or the benchmark index. In the domestic context of mutual funds, home bias or local bias is defined as the fund manager’s preference for local stocks compared to a pre-specified benchmark or market portfolio or benchmark index (Coval & Moskowitz, 1999).

2.2.4. *Various Explanations to Home Bias*

The equity home bias phenomenon has remained a puzzle in financial economics and significant theoretical and empirical work has been done in this area. A variety of explanations including economic factors, behavioural factors and informational friction have been offered to explain this phenomenon which has been captured in some of the literature review essays (Ardalan, 2019; Karolyi & Stulz, 2003; Lewis, 1999; Cooper et al., 2013).

2.2.4.1. *Economic and Behavioural Factors*

Earlier studies point to economic barriers to international investment as one of the reasons for the home bias phenomenon. These barriers include capital controls and differential tax treatment as deterrents for international diversification (Black, 1974; Stulz, 1981). However, with extensive financial liberalisation across the globe including in emerging economies, the barriers to foreign investments have significantly reduced. So, the other explanations offered

for the lack of diversification are home advantages in terms of lower transaction cost (Martin & Rey, 2004), no exchange risk (Fidora et al., 2007) and good regulatory framework (Dahlquist et al., 2003; La Porta et al., 1999). Lin and Vishwanathan (2016) explain the home bias phenomenon using behavioural factors. In their study, the authors use an online experiment to show that home bias exists because of behavioural bias as investors are emotionally driven and make investment decisions despite insufficient information.

2.2.4.2. Information Asymmetry and Home Bias

Among the many explanations offered for home bias, the main one that has found extensive empirical support and attention is informational difference between domestic and foreign investors where the former have a cumulative information advantage over foreign investors (Brennan & Cao, 1997; Gehrig, 1993). Information asymmetry, also known as information failure, occurs when one of the parties to an economic transaction possesses greater information or material knowledge than the other. Generally, the seller of a good or service possesses greater information than the buyer leading to asymmetric information (Akerlof, 1978). But the reverse can also be true where the buyer has more information than the seller, especially in the financial markets. Later studies argue that the informational difference is relevant even in the domestic context and information asymmetry exists even in domestic investment depending on the proximity between the investor and the potential investment (Coval & Moskowitz, 1999). The study analysed the effect of distance on domestic portfolio choice in the US. It affirmed home bias even in the domestic mutual fund portfolio of US fund managers wherein they tend to invest in companies closer to their headquarters. The study found that mutual fund managers invest in companies which are closer by 9-11% than the benchmark average distance. According to this study, home bias can be due to relative information advantage where local investors can talk to employees, managers and suppliers of the firm. They may obtain important information from local media and have close personal ties with local executives. Home bias can also be due to the comfort of local companies as investors hear about them or the psychological desire to invest in the local community. The local brokerage may encourage local investment if there exist close ties between brokers and local corporate executives.

There are various theoretical and empirical research on the role of information asymmetry in home bias. There are many factors which affect or contribute to the information asymmetry, including language and culture, distance, accounting standards or transparency and corporate

governance (Ahearne et al., 2004; Coval & Moskowitz, 1999; Grinblatt & Keloharju, 2001; La Porta et al., 1999). One study while emphasizing the importance of distance between investors and potential investment, also documents that language and culture play an important role in a specific category of financial institutions. In this study, it is observed that Finnish investors whose native language is Swedish are more likely to invest in stocks of Finnish companies that publish their annual reports in Swedish and whose CEOs speak Swedish, compared to Finnish investors whose native language is Finnish (Grinblatt & Keloharju, 2001). In other studies, the culture of uncertainty avoidance, individualism, masculinity, etc. in a country appears to play an important role in portfolio diversification and investment in foreign stocks (Aggarwal et al., 2012; Anderson et al., 2011; Bell et al., 2012). Another study suggests that foreign firms which opt to list in US stock exchanges have to follow stringent regulation and disclosure norms of the Securities Exchange Commission (SEC) of the US. Stocks adhering to these stringent norms are less underweighted in the US equity portfolios (Ahearne et al., 2004). Another study points to corporate governance in the form of rights of minority shareholders and better corporate disclosure leading to more dispersed ownership of firms (La Porta et al., 1999). Yet another study suggests that the extent of corporate disclosure directly affects stock performance and institutional ownership among other factors (Healy & Palepu, 2001). Of these factors, distance is seen as a dominant factors that affect information asymmetry in portfolio choice.

2.2.4.3. Information Asymmetry, Distance, and Home Bias

According to the gravity model, bilateral trade between two countries (in goods) is proportional to size, measured by the GDP of the two countries, and inversely proportional to the geographic distance between them. From a theoretical standpoint Martin and Rey (2004) first proposed a model similar to the ‘gravity equation’ of international trade for financial assets. Subsequently, Portes and Rey (2005) examined international equity flows and found that the geographical distance between two countries acts as a proxy for information asymmetries. They showed that physical distance affects international equity flows and international equity holdings significantly. Their model integrates elements of finance literature on asset trade (equity) and the gravity model of international trade (in goods). Similar to “gravity equation” for trade, equity market capitalisation in the Portes and Rey (2005) model represents the market size and distance is a proxy for informational asymmetries. Similar to the gravity model, this model also shows an inverse relationship

between portfolio flows and distance between the two countries. This inverse relationship between distance and portfolio flows can be attributed to information asymmetry. It shows that the more two countries are located further apart, the information asymmetry between them increases and the portfolio flows reduce. The authors, in the same model, also use international telephone call traffic as another proxy for information flow and the empirical evidence suggests a positive relationship between them. This implies that with increasing international call flow between two countries, the financial asset trade also increases. Importantly, it is also seen that when regression is run with financial asset trade as the dependent variable and both distance and international telephone call flow as independent variables, along with other control variables, the negative coefficient of distance is reduced implying that the information asymmetry caused by distance is mitigated by international telephone call flow (Portes & Rey, 2005).

There are other studies similar to Portes and Rey which have empirically proven distance as a proxy for information asymmetry. These studies (Aviat & Coeurdacier, 2007; Coval & Moskowitz, 1999; Grinblatt & Keloharju, 2001; Huberman, 2001; Ivković & Weisbenner, 2005) document the effect of distance on investors' decisions and their local bias and interpret distance as a proxy for information asymmetry. One of the studies found that individual investors or households also exhibit a strong location preference while investing in domestic stocks. The study showed their disproportionate preference for local stocks headquartered within 250 miles and it also helped the individual investors in generating an additional return of 3.7 per cent per year. Thus individual investors are also able to process and benefit from locally available information for generating higher returns (Ivković & Weisbenner, 2005). Another study provides compelling evidence that proximity is closely associated with familiarity and investors generally invest in firms that are familiar to them. In this study, the shareholders of Regional Bell Operating Company (RBOC) live in the area where the company serves, giving them a sense of comfort and familiarity (Huberman, 2001). In another research, two important strands of literature viz. international trade of goods and international asset portfolio are bridged together. The study investigates whether trade in goods and financial assets holdings are mutually reinforcing. The results show that a 10% increase in bilateral imports leads to a 6-7% increase in bilateral asset holdings, thus showing complementarity between trade in goods and trade in an asset portfolio. The study concludes that the significant impact of distance on an asset portfolio is a result of the complementarity between trade in goods and trade in an asset portfolio (Aviat & Coeurdacier, 2007).

Coval and Moskowitz (1999) analysed the effect of distance on domestic portfolio choice by analysing the mutual fund portfolios in the US. Their study concluded that the explanation of informational differences in international portfolio investment holds good even in the domestic context. The study found that fund managers invest in companies which are closer by 9-11% than the benchmark. This empirical study showed that the economic significance of geography on domestic portfolio choice was relevant despite advancements in communication and information technology during the late 1990s.

2.2.4.4. Financial Globalisation and Home Bias

Later studies have highlighted the reduction in home bias in the last few decades due to financial globalisation (Baele et al., 2007; Coeurdacier & Rey, 2013; Mercado Jr, 2013; Riff & Yagil, 2020). Financial globalisation generally refers to an economic environment of liberalized capital movement, increased access to information across borders, less transaction cost, speed of transaction fostered by electronic trading, corporate governance by listed entities etc (Lane & Milesi-Ferretti, 2003). One study which analysed 46 countries has evidence that the home bias of US investors reduced in 27 countries, especially countries with better corporate governance and dispersed ownership of corporations. Home bias decreased the most in S.Korea as US investors invest more in large corporations with dispersed ownership (Kho et al., 2009; La Porta et al., 1999). In the Asian context, a study shows that greater financial integration leads to a decline in home bias. The results are similar to those studies done for advanced economies. In this study, foreign direct investment and global betas are used as measures of financial integration (Mercado Jr, 2013).

2.2.4.5. Information Technology and Home Bias

Information technology and communication cost are key to improving access to information thereby reducing information asymmetry. An important study on the impact of information technology on increasing the distance between lenders and small borrowers validates this premise. In this study, the increase in the distance between borrowers-lenders is attributed to the greater use of information technology by the latter. When access to information on borrowers is cheaper, faster and better, it enables banks to lend to distant borrowers without diluting the underwriting standards (Petersen & Rajan, 2002). The use of information technology in both computing and communication is important in improving the access to information. Modes like telephone, mail and other electronic medium significantly improve

the speed of communication at a very low cost. Also, the use of information technology in the credit scoring model helps significantly improve the computing capability required for credit decisions (DeYoung et al., 2011). Later studies also establish that information technology has not only improved access to information for lenders but also for investors. Developments in information technology like the Internet have improved access to investors in the form of real-time information on financial markets, detailed financial reports and analysis through disclosures on websites. Since the Internet improves access to quality information it reduces the information asymmetry between investors and the firm and increases the volume of cross-border portfolio flows (Choi et al., 2014).

2.2.5. *Home Bias in Mutual Funds and Emerging Economies like India*

While home bias in international investment at a cross-country level or country-specific level is well documented, there are few specific studies on home bias in mutual funds across countries. One among these covers the mutual funds of 26 developing and developed countries to investigate their investment pattern. There is robust evidence that these funds allocate disproportionately large portions of funds to domestic stocks. The study further highlights that the home bias reduces as the capital markets of the host country develop in terms of higher market capitalisation and lower transaction costs (Chan et al., 2005). Another study on mutual funds in Latin America shows the persistence of home bias among domestic fund managers. Foreign fund managers prefer investing in companies with higher market capitalisation, and higher visibility and those companies which have an international listing in the form of American Depository Receipt (ADR) (Piccioni Jr et al., 2012). There are also specific studies on fund managers exhibiting location preference by locating themselves in financial centres to ensure the performance of their funds (Christoffersen & Sarkissian, 2009; Hong et al., 2005; Parwada, 2008). One of these studies suggests that there is a local bias among entrepreneurial money managers as new money managers are less capable of overcoming the information asymmetry problem and thus show a stronger local bias in their equity holdings (Parwada, 2008). Another study suggests that mutual funds with experienced managers located in cities which are financial centres tend to outperform (Christoffersen & Sarkissian, 2009) the benchmark. Another similar study documents that fund managers' investment patterns are similar when they are in the same cities (Hong et al., 2005). Some literature also shows that US global funds do not exhibit home bias. Younger fund managers

and those with foreign education backgrounds invest more in international markets (Hiraki & Liu, 2021).

While home bias is a well-documented and extensively studied area in cross-country studies of developed markets and some emerging markets, there are no country-specific studies on home bias in mutual fund portfolios in India. Most of the studies available are cross-country analyses on home bias in the context of international diversification or international portfolio investment where India is in the sample of developing countries. In these cross-country studies to examine home bias measures, it is found that emerging economies like India exhibit extreme home bias and investors in emerging economies predominantly invest in the domestic market (Mercado Jr, 2013; Mishra, 2015; Mukherjee et al., 2018; Kim et al., 2014).

2.2.6. Covid-19 and Home Bias

During Covid-19, prolonged lockdowns in various parts of the world saw increased information technology usage resulting in the proliferation of digital communication technology and internet infrastructure in all walks of life. The world of investments and financial markets has seen swift adoption of remote communication technology which has resulted in the transforming of traditional paper-based reports and in-person engagements to digital content and online conferences and meetings. During the pandemic, all forms of information dissemination by Indian listed corporates viz. quarterly results, investor presentations, annual general body meetings, outcomes of board meetings, financial and non-financial disclosures etc. were increasingly done digitally instead of paper-based reports and physical meetings. Research in the past has established that web-based disclosures, through the Internet, social media, or company websites lower information asymmetry (Blankespoor et al., 2014; Choi et al., 2014; Gajewski & Li, 2015). A preliminary study in China suggests that Covid-19 has led to a proliferation of remote communication technology and internet infrastructure which has resulted in a significant reduction in the levels of informational asymmetry prompting venture capital investors to invest in firms and businesses which are farther from their location (Han et al., 2021). Another study found that Euro-area investors in listed securities rebalanced their portfolio by extending it to the extra-Euro area during Covid-19 (Carvalho & Schmitz, 2021). One researcher studied the quarterly reports for measuring information asymmetry and found that information asymmetry was reduced during the Covid-19 period (Maiz Jiménez et al., 2021).

While all these studies suggest the importance of distance in informational difference, it has already been seen how the developments in information technology have gone much beyond voice-based communication and significantly reduced information asymmetry. Information technology, more specifically the internet, gives real-time information and reports on financial markets which have offset information friction. It has already been seen that reduced information friction leads to increased portfolio flows which are indicative of a reduction in home bias (Choi et al., 2014).

2.2.7. Economic Crisis and Home Bias

Paradoxically, there is another strand of literature which shows that during crisis periods or economic shocks, investors tend to invest in familiar local investments, which accentuates the equity home bias phenomenon. (Riff & Yagil, 2016) One study established that even modest levels of uncertainties caused by economic shocks induce under-diversification or home bias by reducing the proportion of foreign equity portfolios. In this model, home bias derived from pessimism induced by uncertainty is greater in an unfamiliar asset compared to a familiar asset. Their analysis also shows that home bias can explain the failure of empirical tests of the international CAPM (Cao et al., 2011). There are also studies which suggest that during uncertainty the portfolios of investors who are averse to ambiguity are generally under-diversified. Their model shows that even a marginal increase in the ambiguity of asset returns leads to strong home bias in portfolio holdings (Uppal & Wang, 2003).

Another study points out that during the global financial crisis of 2008, investors across the world liquidated their foreign investments and brought money home. In other words, the crisis saw an unprecedented incidence of stops and retrenchments, as investors around the world liquidated foreign investment positions and brought money home. This study categorises episodes of capital flows by domestic and foreign investors into four categories. These are named surge, stop, flight and retrenchment episodes. “Surges” are episodes of sharp increase in gross capital inflows. “Stops” are periods when there is a sharp decrease in gross capital inflows. “Flights” are episodes of a sharp increase in gross capital outflows; and “retrenchments” are characterised by a sharp decrease in gross capital outflows. Higher levels of global risk are positively correlated with stops and retrenchment and negatively correlated with surges and flight. As a corollary, less global risk leads to surges in capital inflows from foreign investors and retrenchment in capital flows by domestic investors. Extreme capital

flow episodes are associated primarily with global factors (especially risk) and contagion rather than domestic factors. Domestic factors play a less important role in sudden and extreme capital flows. The relation between global risk and capital flows is due to economic uncertainty; on the contrary, some of the episodes of surges, stops and retrenchment can also be explained through global growth. It is also interesting to note that global liquidity and global interest rates are not significantly related to many of the extreme capital flow episodes in this study (Forbes & Warnock, 2012). There is similar research which analyses foreign and domestic flows, especially during financial crises. During the growth cycle, foreigners invest more in a country and the capital inflows increase while domestic investors invest abroad. During financial crises, there is a sharp reduction in inflows from foreigners and domestic investors stop investing abroad (Broner et al., 2013). A study on the global market for syndicated bank loans also points to the phenomenon of “flight home” when there is a crisis in the international financial markets. It shows that the home bias of lenders’ loan origination increases by 20% when the country of origin (from where the loan originated) experiences some kind of banking crisis. Banks with less financial strength and less stable funding sources show a greater degree of home bias. The results suggest that the home bias of international capital allocation tends to increase in the presence of adverse economic shocks, affecting the asset returns of international investors (Giannetti & Laeven, 2012).

Specific studies on international mutual fund flows during economic crisis reveals that such crises resulted in outflow or withdrawal of funds not only from the country in which crisis originated but also led to larger contagion effect over time. Mexican devaluation in 1994 led to significant outflow from Mexico and Brazil. The collapse of Thai Bhat in 1997 led to outflow in mutual funds not only in some Asian countries but also in Latin America and some of the East European countries. The Russian currency devaluation in 1998 resulted in massive outflow of international mutual fund from various countries showing pronounced contagion effect (Kaminsky et al., 2001). Another study analysing the flows of international mutual funds during global financial crisis of 2008 shows outflow of funds from economies facing crisis and mutual fund managers tend to accumulate cash (Raddatz & Schmukler, 2012).

2.2.8. *Home Bias and Size of the Firm*

In a study relating to home bias and size of the firms, it is argued that foreign investment in Japanese equities is concentrated in the largest firms (Kang & Stulz, 1997). In their model, it has been shown that foreign investors generally know more about larger firms. Another study

reinforces these findings, asserting that foreign investors prefer stocks with larger market capitalisation and greater visibility compared to small firms which have relatively less information (Piccioni Jr et al., 2012). Home bias gets accentuated in small global equity funds as they overinvest in domestic assets, while the largest global funds hire fund managers with global exposure to overcome information barriers and invest in foreign stocks and generate more value for investors (Hiraki & Liu, 2021). The study by Coval and Moskowitz (1999) also showed similar results of fund managers investing in farther locations when choosing large firms compared to smaller firms.

2.2.9. *Home Bias and Fund Performance*

In the studies relating to location bias and mutual fund performance, it was seen that fund managers generate abnormal returns from geographically proximate investments (Coval & Moskowitz, 2001). Similar to institutional investors, individual investors or households also exhibit a strong location preference while investing in domestic stocks. A study shows their disproportionate preference for local stocks which are headquartered within 250 miles. This also helps individual investors in generating an additional return of 3.7 per cent per year. Thus individual investors are also able to process and benefit from locally available information for generating higher returns (Ivković & Weisbenner, 2005). In a study on the Indonesian market, it was found that domestic investors make higher profits compared to foreign investors (Dvořák, 2005). In a study on select stocks in the German Security Exchange, it was seen that traders located outside Germany in non-German speaking cities showed a lower proprietary trading profit. On examining the reasons, there was evidence of an informational advantage due to proximity to the corporate headquarters of the traded stock (Hau, 2001). Using S.Korean data, one study showed that foreign institutional investors pay more than domestic investors while purchasing shares and receive less when they sell, especially in large and medium size trades (Choe et al., 2005).

While most studies point to higher returns from local investments, there are a few exceptions. One study analysed whether individual investors earned superior returns on their local investment for the period between 1991 and 1996. It was found that individuals do not generate abnormally high returns (Seasholes & Zhu, 2010). In another study, the local effect of equity ownership by foreign institutional investors in Taiwan was analysed. The empirical results reveal that stocks with high foreign ownership outperform stocks with low foreign ownership (Huang & Shiu, 2009).

2.3. Research Gaps

Based on the study of existing literature there is a curious case to examine the local bias in mutual funds in a post-Covid set-up for an emerging economy like India. It also needs to be re-examined whether the phenomenon of home bias/location bias changed during an economic crisis like Covid-19 and compare the same with the pre-Covid period. The research gaps which emerge as a result of the existing literature are as follows:

S No	Theme	Citations	Research Gaps
1.	Modern Portfolio Theory: Diversification of assets and Capital Asset Pricing Model (CAPM)	(Levy, 2017; Levy & Levy, 2014; Lintner, 1965; Markowitz, 1952; Sharpe, 1964)	NA
2.	Benefits of International Diversification: International Capital Asset Pricing Model (ICAPM)	(R.A.De Santis, 2006; Eldor et al., 1988; Grubel, 1968; Levy & Sarnat, 1970; Sercu, 1980; Solnik, 1974b, 1974a)	NA
3	Home Bias Phenomenon: Domestic equity preference despite benefits of international diversification.	(Coeurdacier & Rey, 2013; Coval & Moskowitz, 1999; Flandreau, 2006; French & Poterba, 1991)	NA

4	Various Explanations for Home Bias Phenomenon	(Ardalan, 2019; Karolyi & Stulz, 2003; Lewis, 1999)	NA
a	Economic and Behavioural Factors	(Black, 1974; Grinblatt & Keloharju, 2001; Lin & Viswanathan, 2016; Martin & Rey, 2004; Stulz, 1981)	NA
b	Information Asymmetry and Home Bias: Informational difference between a domestic investor and a foreign investor.	(Aggarwal et al., 2012; Ahearne et al., 2004; Anderson et al., 2011; Brennan & Cao, 1997; Coval & Moskowitz, 1999; Gehrig, 1993; Grinblatt & Keloharju, 2001; Healy & Palepu, 2001; La Porta et al., 1999)	NA
c	Information Asymmetry, Distance and Home Bias	(Aviat & Coeurdacier, 2007; Choi et al., 2014; Coval & Moskowitz, 1999; Huberman, 2001; Ivković & Weisbenner, 2005; Martin & Rey, 2004; Portes & Rey, 2005)	In the post-Covid international financial set-up, where information technology is advanced, it needs to be relooked whether the model akin to the

d	Financial Globalization and Home Bias	(Baele et al., 2007; Coeurdacier & Rey, 2013; Kho et al., 2009; La Porta et al., 1999; Mercado Jr, 2013; Riff & Yagil, 2020)	gravity model showing distance has the explanatory power to determine the portfolio flows. Financial globalisation has led to increased access to information across and within borders. There is no study to examine the impact of the same in the Indian context.
e	Information Technology and Home Bias	(Choi et al., 2014; DeYoung et al., 2011; Petersen & Rajan, 2002)	
5.	Home bias in Mutual Funds and in Emerging Economies like India	(Chan et al., 2005; Christoffersen & Sarkissian, 2009; Hiraki & Liu, 2021; Hong et al., 2005; Mercado Jr, 2013; Mishra, 2015; Mukherjee et al., 2018; Parwada, 2008; Piccioni Jr et al., 2012)	Despite a well-developed equity market, growing mutual funds sector in India and the increasing importance of India among emerging markets, there has been no specific research on home bias or local bias phenomenon in domestic mutual fund portfolio in India.

6.	Covid-19 and Home Bias	(Blankespoor et al., 2014; Carvalho & Schmitz, 2021; Choi et al., 2014; Gajewski & Li, 2015; Han et al., 2021; Maiz Jiménez et al., 2021)	Covid-19 resulted in the large-scale use of technology and internet infrastructure which improved information access. However, there is no research on its impact on home bias/local bias in the context of mutual funds in India.
7.	Economic Crisis and Home Bias: Under-diversification and preference for familiar local investments.	(Broner et al., 2013; Cao et al., 2011; Forbes & Warnock, 2012; Giannetti & Laeven, 2012; Uppal & Wang, 2003)	There has not been any major study on the equity bias phenomenon before and after Covid-19 to study its trend during the recent economic crisis.
8.	Home Bias and Size of the Firm	(Coval & Moskowitz, 1999; Hiraki & Liu, 2021; Kang & Stulz, 1997; Piccioni Jr et al., 2012)	There has been no study to compare the home bias/local bias in different categories of mutual funds – Large, Midcap, Smallcap etc., especially in the context of mutual funds in India.

9.	Home Bias and Fund Performance	(Choe et al., 2005; Coval & Moskowitz, 2001b; Dvořák, 2005; Hau, 2001; Huang & Shiu, 2009; Ivković & Weisbenner, 2005; Seasholes & Zhu, 2010)	There are no specific studies on the relationship between home/ local bias and returns generated by mutual fund schemes for an emerging economy like India and compare the same during pre-Covid and post-Covid periods to see any change in the trend.
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2.3.1. Summary of Research Gaps

1. India has a well-developed capital market. It has also taken various steps towards financial globalisation coupled with advancements in information technology and a reduction in communication costs. Despite a well-developed equity market, growing mutual funds sector in India and the increasing importance of India among emerging markets, there has been no specific research on the home bias or local bias phenomenon in domestic mutual fund portfolios in India.
- 2a. In a post-Covid international financial set-up where information technology has advanced, the model akin to the gravity model showing distance having the explanatory power to determine portfolio flows needs to be relooked at.
- 2b. Financial globalisation has led to increased access to information across and within borders. Improvements in information technology lead to a reduction in home bias but there is no research on its impact on home bias/local bias in the context of mutual funds in India.
- 3 Earlier studies suggest that investors tend to under-diversify and reduce their foreign investments during an economic crisis. There is no study which has examined the investment behaviour of mutual funds during the Covid-19 pandemic in an emerging market like India.
4. There are no studies to validate the findings of earlier researches on whether the extent of local bias depends on the size of companies the funds invest in.
5. Finally, there are no studies comparing the local bias and the performance (net returns) of mutual fund portfolios in India.

2.4. Research Problem

Based on the research gaps enumerated above, there are a few potential issues in the economic and business context of the Indian financial sector which requires further study.

Potential Issue 1a: Compared to advanced economies, studies on the equity home bias or local bias phenomenon in emerging economies like India have been limited. As mentioned earlier, emerging economies are fast growing and their share in the world market capitalization has increased from 18% in 2013 to 26% in 2021. Amongst emerging markets, the weightage of India in the MSCI Emerging Market Index has sharply grown from 8.2% in 2019 to 14.5% in 2021, suggesting its importance in the emerging market space. During 2013 to 2021, the Indian equity mutual funds (MF) have grown by 720% in terms of assets under management (AUM). Further, the equity MF as a percentage of total market capitalisation has increased from 2.5% to 5% during this period. However, despite the growth, size and importance of India and its mutual funds sector, there is no study available especially on the home bias or local preference of Indian equity mutual funds.

Potential Issue 1b: There are studies to show that during crisis periods or economic shocks, uncertainties compel investors to invest in familiar financial assets which accentuates the home bias phenomenon. Some studies have shown that economic shocks and uncertainties like the global financial crisis of 2008 induce investors to liquidate their foreign investment and bring money back to the domestic markets. However, during the Covid-19 pandemic, which was also an economic crisis, one of the data points suggests that foreign equity asset ownership in India increased, implying diversification away from home. There thus seems to be an apparent contradiction between what the data point suggests and past studies on economic crises.

Potential Issue 1c: During Covid-19 prolonged lockdowns in various parts of the world saw increased information technology usage in all walks of life. In the world of investments and financial markets, there was swift adoption of remote communication technology which transformed traditional paper-based information and in-person engagements to online content and digital communication. This ideally should have reduced the information friction among investors and firms. Some studies highlight that Covid-19 led to a proliferation of remote communication technology and internet infrastructure, prompting venture capital investors to

invest in businesses farther from their location. Given these developments during Covid-19, it is a curious case to examine whether these changes had any effect on local bias in India.

Potential Issue 2: Existing studies suggest that home bias is lesser for larger companies compared to mid-size and smaller companies as information on them is widely available and extensively analysed. Given the widely available information on all listed companies in India, it is proposed to study whether location preference changes for different categories of MFs.

Potential Issue 3: Studies in developed countries have shown that fund managers who exhibit home bias tend to generate higher returns on their investments due to better access to information. In the post Covid-19 world, it needs to be examined whether fund managers in India generated better returns by investing in firms/companies closer to them or otherwise.

Based on the above issues, the research problem for this study is outlined as follows : To examine the local bias phenomenon of the fast growing Indian equity mutual fund sector during the pandemic and comparing it with pre-Covid period to see any change in the investment behaviour of fund managers and the effects of the change by comparing the local bias and the net return of mutual funds.

Research Questions based on Potential Issues 1a to 1c

Research Question RQ1: Whether Indian equity mutual funds exhibit local bias in the post-Covid period?

Research Question RQ2: What has been the trend in local bias in Indian mutual funds in the last decade, more specifically from 2013 to 2021?

Research Question RQ3: What has been the change in local bias just before Covid-19 (2019) and post-Covid-19 (2021)?

To address the above research questions, a study has been undertaken to find answers to these questions which comprise the research objectives of this study.

Research Objective 1a aligned to RQ1: Given the above backdrop of an under-researched equity mutual fund market of India in the context of home bias or local bias and the recent developments during Covid-19, it is a curious case to examine the home bias or local bias in equity mutual fund portfolio in India in the recent times (post-Covid).

Research Objective 1b aligned to RQ2 and RQ3: A comparative study to examine the change in local bias phenomenon in mutual funds portfolio between pre-Covid and post-Covid periods (2013, 2019 and 2021) will help understand the influence of pandemic which subsumes the possible influence of information technology on proximity preference.

Research Question RQ4 based on Potential Issue 2: Does home bias or local bias significantly vary for different categories of mutual funds which invest in different sizes of companies in terms of market capitalisation?

Research Objective 2 aligned to RQ4: It is proposed to study whether home bias measure changes for different categories of MFs viz. Large-cap, Midcap, Large-midcap and Small-cap wherein these mutual funds invest in different sizes of listed companies in terms of market capitalization.

Research Question RQ5 based on Potential Issue 3: Is proximity to investee companies important for mutual fund managers in India to generate better returns and what has been the trend of returns generated by mutual funds in the pre-Covid and post-Covid period vis-à-vis local bias?

Research Objective 3 aligned to RQ 5: The final research objective is to compare the local bias and the net returns for two periods – pre-Covid (2019) and post-Covid (2021) – to see whether fund managers still prefer investing in firms closer to them or did their investment behaviour change during the pandemic.

2.5. Theoretical Premises of this Study

As already discussed, according to the modern portfolio theory (Markowitz, 1952), an investor can construct a portfolio of multiple assets (through diversification) that will offer the highest returns for a desired level of risk. Assuming a frictionless global financial market, the international version of the capital asset pricing model (ICAPM) establishes that risk-adjusted returns are maximized when investors hold a world market portfolio in which the proportion of domestic assets is proportional to the country's share of world market capitalisation. But in reality, domestic assets make up a disproportionately large part of the average investor's total asset holdings. This lack of international portfolio diversification is commonly referred to as equity home bias or home bias and has puzzled economists for several decades.

The modern portfolio theory assumes the timely and complete receipt of all information relevant to their investment by investors. ICAPM, which is developed on the modern portfolio theory model presumes that the world capital is frictionless without any transaction and information costs and with no constraints on capital flow across countries. In reality, world markets comprise information frictions in the form of insiders who have superior information than other investors due to various reasons.

Several theoretical explanations have been offered to identify the causes of home bias, including the role of non-traded goods, explicit trading costs, exchange rate risk, and information asymmetries. Although all these theories were initially presented as potential explanations, only information asymmetry, has found notable empirical support and has received most attention in recent years. According to this theory, domestic investors have less information about foreign markets and therefore hesitate to diversify internationally.

A notable theoretical paper on information asymmetries and equity home bias is that of Gehring (1993). He introduces the noisy rational expectations model where investors remain incompletely informed about foreign markets, leading to the development of a domestic bias. Related to this concept of information asymmetries is a paper by Brennen and Cao (1997), which develops a rational expectations equilibrium model based on the presence of information lags between domestic and foreign investors. They show that foreign purchases of US investors are positively correlated with lagged foreign market returns. This is consistent with US residents being at an informational disadvantage relative to locals in these markets,

and trading on new information with a lag. This suggests that home bias or local bias is caused by a mix of both institutional and behavioural biases, and therefore it is a complex task to find a perfect theoretical model that correctly describes actual portfolio choice.

There are various theoretical and empirical research on the role of information asymmetry in home bias. Some of the factors that affect or contribute to the information asymmetry include distance, language and culture, accounting standards or transparency and corporate governance. Of these factors, distance is one that strongly affects information asymmetry in portfolio choice and several studies have been done on this.

According to the gravity model, bilateral trade between two countries is proportional to their size, measured by GDP, and inversely proportional to the geographic distance between them (Tinbergen, 1963). A theoretical study by Martin and Rey (2004) proposed a model similar to the 'gravity equation' of international trade for financial assets. Subsequently, Portes and Rey (2005) examined international equity flows and found that the geographical distance between two countries acts as a proxy for information asymmetries. They showed that physical distance significantly affects international equity flows and international equity holdings. Their model integrates elements of finance literature on asset trade (equity) and the gravity model of international trade (in goods).

Literature suggests that Krugman's (1980) seminal contribution to international trade was motivated by the gravity model which has been extensively tested empirically and has demonstrated empirical regularity. Krugman's model explains how trade flows are proportional to country size, and adversely affected by trade barriers. Based on this model, it can be conjectured that distance proxies for trade barriers, and the model in a way explains that distance has a negative impact on trade flows (Krugman, 1980).

Box. 2.1: Gravity Model for International Trade

Using the analogy of Newton's universal law of gravitation, Jan Tinbergen (1963) gave an equation to explain the flow of international trade between two countries. This equation is called the gravity equation in international trade.

$$\text{Trade Flow} - F_{ij} = G * \frac{(M_i)^\alpha (M_j)^\beta}{(D_{ij})^\delta} \quad (2.2)$$

- F_{ij} is flow or volume of trade (net exports) from country i to country j
- M is the market size (GDP) for countries i and j
- D_{ij} is the distance between countries i and j
- α , β and δ coefficients ≈ 1

According to this equation, bilateral trade between two countries is directly proportional to the economic size of the countries, measured by GDP, and inversely proportional to the geographic distance between them (Tinbergen, 1963). This model has proven to be a stable model over a period of time across different sample countries. Further, it is among the most robust models which have been tested empirically across countries to predict trade flows between them for many goods and services.

Despite it being empirically robust, there are some scholars who believed that there is no theoretical justification for the gravity equation. Alan V. Deardorff has argued in his paper that the gravity equation has a theoretical basis (Deardorff, 2011). Besides, various studies provide theoretical arguments for complementarity between trade in goods and asset holdings (Obstfeld & Rogoff, 2000; Rose & Spiegel, 2004; Serrat, 2001).

In the model by Portes and Rey which is a gravity-like equation (Eq. 2.2.) for financial assets trade (portfolio flows), equity market capitalisation represents market size and distance is a proxy for informational asymmetries. Similar to the gravity model, this model shows an inverse relationship between portfolio flows and distance between two countries. The inverse relationship between distance and portfolio flows can be attributed to information asymmetry. It shows that the more two countries are located further apart, the information asymmetry increases and the portfolio flows reduce. In the same model, Portes and Rey use international telephone call traffic as another proxy for information flow and the empirical evidence suggests a positive relationship between them. This suggests that with increasing

international call flow between two countries, the financial asset trade also increases. Importantly, it is also seen that when regression is run with financial asset trade as a dependent variable and both distance and international telephone call flow as independent variables, along with other control variables, the negative coefficient of distance is reduced. This implies that the information asymmetry caused by distance is mitigated by international telephone call flow.

Gravity-Like Model for Financial Asset Trade – Equation

$$\log(\text{Portfolio}_{AB,t}) = \beta_0 + \beta_1 \log(\text{mktcap}_{A,t}) + \beta_2 \log(\text{mktcap}_{B,t}) + \beta_3 \log(\text{dist}_{AB}) + \beta_4 \log(\text{teleph}_{AB}) + \text{transaction technology variables} + \varepsilon \quad (2.3)$$

Portfolio _{AB,t}	Equity portfolio flow from country A to country B
mktcap _{A,t}	Market Capitalisation of country A
mktcap _{B,t}	Market Capitalisation of country B
dist _{AB}	Geographic distance between country A and B
teleph _{AB}	Volume of international telephone call flow from country A to country B
transaction technology variables	This includes an index of sophistication of financial markets (diversification of assets, trading accounts etc), trading cost and index of financial market development.
ε	Error term

The model (Equation 2.3) suggests a direct relationship between market capitalisation and portfolio flows, a negative relationship between distance and portfolio flows, a positive relationship between international call flows and equity portfolio flows and a positive relationship between transaction technology variables and portfolio flows.

Literature suggests that there are similarities in trade in goods (international economics) and equity trade based on which Portes and Ray had developed the gravity model for equity flow. There are a few ways to look at the similarities. The first arises from the risk-sharing literature (Obstfeld & Rogoff, 1996) which implies that trade in equities mirrors trade in goods. It has long been recognised, however, that the gravity model is a reliable and robust tool for explaining trade (Evenett & Keller, 2002; Leamer & Levinsohn, 1995) and the gravity model should explain equity trade irrespective of informational asymmetries on assets. An alternative argument for a gravity model of equity trade starts from the observed complementarity between trade and foreign direct investment (FDI) flows. FDI is generally related to portfolio equity flows. One study (De Ménil et al., 1999) finds that the gravity model accounts well for FDI flows among European countries. Based on the conclusions of

the study by Portes and Ray, there are other studies which have empirically validated the conclusion that distance is a proxy for information asymmetry.

The second theoretical premise being tested by this study is the behavioural pattern of investors during an economic crisis. There is some theoretical research on economic crises and capital flows which shows that during crisis periods or economic shocks, investors tend to invest in the familiar which accentuates the equity home bias phenomenon. One study established that even modest levels of uncertainties caused by the crises and economic shocks induce under-diversification or home bias by reducing the proportion of the foreign equity portfolio. (Cao et al., 2011). There are also studies which suggest that during uncertainties the portfolios of investors who are averse to ambiguities are under-diversified (Uppal & Wang, 2003). Another study points out that during the global financial crisis of 2008, investors across the world liquidated their foreign investments and brought money home (Forbes & Warnock, 2012). There is similar research which analyses foreign and domestic flows, especially during financial crises. During a growth cycle, foreigners invest more in a country and the capital inflows increase while domestic investors invest abroad. During financial crises, there is a sharp reduction in inflows from foreigners and domestic investors stop investing abroad (Broner et al., 2013). A study on the global market for syndicated bank loans also points to the phenomenon of “flight home” when there is a crisis in the international financial markets. It shows that the home bias of lender’s loan origination increases by 20% when the country of origin (from where the loan originated) experiences any form of banking crisis. Banks with less financial strength and less stable funding sources show a greater degree of home bias. The results suggest that the home bias of international capital allocation tends to increase in the presence of adverse economic shocks, affecting the asset returns of international investors (Giannetti & Laeven, 2012).

2.5.1. *Theoretical Premises Examined in this Study*

Based on the theoretical studies and models presented above, the following theoretical premises are being tested empirically in this study on Indian mutual funds based on data relating to the pre-Covid and post-Covid periods:

1. As mentioned above, there are theoretical models to show that distance is a proxy for information asymmetry. One of these models is an amalgamation of the modern portfolio theory and the gravity model for international trade. According to this model, international equity flow and equity holdings are inversely related to distance. While the model has recorded positive impact of information technology on portfolio flows, thereby mitigating the information asymmetry caused by distance, distance continues to have an inverse relationship with portfolio flows. Empirical findings have strongly supported this model in the past. However, in the post-Covid financial world where there has been a proliferation of remote communication technology and internet infrastructure, the present study on location preference of mutual fund portfolios in India will examine whether the empirical findings still support the conclusions of the gravity-like model of Portes and Ray where international equity flows are inversely related to distance. This study will validate whether distance still has explanatory power in determining the portfolio flows in an economy.
2. As already mentioned, theoretical research on economic crises and capital flows shows that during crisis periods or economic shocks, investors tend to invest in the familiar local investments which increases the equity home bias phenomenon. According to these research studies, during economic crises, investors generally reduce their foreign portfolio holdings. Although the Covid-19 pandemic was initially seen as a health hazard, the lockdowns across the globe caused serious economic repercussions and the pandemic became an economic crisis. However, preliminary studies and a data point on foreign equity investment by India suggest that investors invested in farther locations/international locations, signalling a significant reduction in home bias during Covid-19. Given these developments, there is a curious case to examine the recent developments and compare the same with these theoretical models.

2.6. Chapter Conclusion

This chapter gives a systematic review of the literature followed by a detailed discussion on each area of the study. This is followed by identifying the research gaps and arriving at the research objectives. The theoretical premise of this study is summarized and the literature giving the theoretical premise is enumerated. Based on the previous theories, two theoretical premise are being empirically tested in this study viz. whether distance still has the explaining power in determining portfolio flow in an economy and whether economic crises like Covid-19 have increased proximity preference as suggested in the past studies.

CHAPTER 3

DATA AND RESEARCH METHODOLOGY

3.1. Overview

This chapter discusses the data used for the analysis. It covers data sources used for the study, sample size and composition of the sample, data constraints and alternatives, cut-off limits in AUM for different years, list of the benchmark index and their sources and comparison of data used in this study vis-à-vis earlier studies and the comprehensiveness of the data.

This chapter also discusses the methodology for undertaking this study. First, the term home bias/local bias is defined followed by the calculation of local bias. Second, the t-test is done to see whether the empirical results are statistically significant. Finally, the local bias calculated in this study is compared with 1-year net returns generated by MF schemes to see whether there is any clear trend in the performance of the fund vis-à-vis the local bias.

3.2. Data for the Study

In India, all the MFs have to disclose their monthly portfolio holdings of each scheme to the capital market regulator, the Securities and Exchange Board of India (SEBI) and also make the data public. The data that supports the findings of this study are public domain resources. For this study, various mutual funds and stock exchange databases have been used. The URL of the respective sources is given in Table 3.1. The holding details of the mutual funds are available from their websites. The aggregate Assets under Management (AUM) of the mutual funds are available on the AMFI website.

Table 3.1 – Websites/URLs of Various Data Sources

S No	Source of Data for the Study	Website/URL
1	Association of Mutual Funds in India (AMFI)	https://www.amfiindia.com/
2	Moneycontrol.com	https://www.moneycontrol.com/
3	NSE Indices Ltd	https://www.nseindia.com/products-services/about-indices
4	National Stock Exchange (NSE)	https://www.nseindia.com/
5	Google Maps for calculating distances	https://www.google.com/maps
6	Morgan Stanley Composite Index (MSCI) – Emerging Markets	https://www.msci.com/our-solutions/indexes/emerging-markets/

S No	Name of the Mutual Fund	Website /URL
1	Aditya Birla Sun Life Mutual Fund	https://mutualfund.adityabirlacapital.com/
2	Axis Mutual Fund	https://www.axismf.com/
3	Bank of India Mutual Fund	https://www.boimf.in/
4	Baroda Mutual Fund	https://www.barodabnpparibasmf.in/
5	BNP Paribas Mutual Fund	https://www.barodabnpparibasmf.in/
6	Canara Robeco Mutual Fund	https://www.canararobeco.com/
7	DSP Mutual Fund	https://www.dspim.com/
8	Edelweiss Mutual Fund	https://www.edelweissmf.com/
9	Franklin Templeton India Mutual Fund	https://www.franklintempletonindia.com/
10	HDFC Mutual Fund	https://www.hdfcfund.com/
11	HSBC Mutual Fund	https://www.assetmanagement.hsbc.co.in/en
12	ICICI Prudential Mutual Fund	https://www.icicipruamc.com/
13	IDFC Mutual Fund	https://idfcmf.com/
14	IIFL Mutual Fund	https://www.iiflmf.com/
15	Invesco Mutual Fund	https://invescomutualfund.com/
16	JM Mutual Fund	https://www.jmfinancialmf.com/
17	Kotak Mutual Fund	https://www.kotakmf.com/
18	L&T Mutual Fund	https://www.ltfs.com/companies/Int-investment-management/Int-mutual-fund.html
19	LIC Mutual Fund	https://www.licmf.com/
20	Mirae Asset Mutual Fund	https://www.miraeassetmf.co.in/
21	Motilal Oswal Mutual Fund	https://www.motilaloswalmf.com/
22	Nippon India Mutual Fund	https://mf.nipponindiaim.com/
23	Parag Parikh Financial Advisory Mutual Fund (PPFAS)	https://amc.ppfas.com/
24	PGIM India Mutual Fund	https://pgimindiamf.com/
25	Quant Mutual Fund	https://quantmutual.com/
26	SBI Mutual Fund	https://beta.sbimf.com/
27	Sundaram Mutual Fund	https://www.sundarammutual.com/
28	Tata Mutual Fund	https://www.tatamutualfund.com/
29	Union Mutual Fund	https://www.unionmf.com/
30	UTI Mutual Fund	https://www.utimf.com/

3.3. Sample Size and Composition of Domestic and Foreign Stocks

For examining the local bias in this study, three time periods have been considered viz. April 2013, October 2019 and October 2021 for calculating and comparing of local bias of mutual fund portfolios. The sample considered for the study includes 400 mutual funds over three time periods which constitute over 90% of the AUM for each period. The proportion of foreign stocks in various mutual funds for the three time periods is also given as an increase in foreign stock composition suggests a reduction in local bias (Table 3.2). As evident, in 2021 there is a significant increase in the extent of foreign stock investment by mutual funds. Similarly, if we look at the number of stocks invested by MFs out of the total listed entities in the NSE, it is found that investment in the number of foreign stocks during the Covid-19 period increased significantly (Table 3.3).

Table 3.2: Mutual Fund – Sample Size, Domestic and Foreign Stock Composition

Rs. in Bn	2021			2019			2013		
	Total MFs	AUM	% of AUM	Total MFs	AUM	% of AUM	Total MFs	AUM	% of AUM
Total AUM – Equity MF	364	12966	100%	322	7551	100%	261	1584	100%
Total AUM – Sample	177	11898	92%	130	6915	92%	93	1419	90%
MFs with only domestic stocks	157	10325	80%	125	6678	88%	91	1397	88%
MFs with foreign stocks	20	1573	12%	5	237	3%	2	22	1%
Total foreign stock investment		167	1.41%		14	0.21%		6	0.40%

This table gives the total AUM of all equity funds and the sample considered for the study. MFs with domestic and foreign stock in their portfolio are segregated.

Source: Author

Table 3.3: Mutual Fund – Number of Stocks in Index and all MF Schemes

S No	Particulars	2013	2019	2021
1	Listed companies in NSE	1666	1949	2016
2	MF investments - Indian stocks	737	784	785
3	MF investments -Foreign stocks	22	39	111
4	Total	759	823	896
5	Total MF stocks/Total listed entities	46%	42%	44%
6	Domestic MF stocks/Total listed entities	44%	40%	39%
7	Foreign stocks/Total listed entities	1.3%	2.0%	5.5%

This table compares the number of stocks invested by MFs vis-à-vis the total listed entities in NSE.

The investments in the number of foreign stocks over the three time periods are also given.

Source: Author

It is pertinent to state here the reasons for the choice of three time periods. To understand the trend in local bias, it is important to analyse the local bias for two periods in pre-Covid period to broadly assess the rate of change (meaningful change, if any) and comparing it with the change during Covid period. The ideal choice would have been to look at start of every decade, say 2011 for previous decade. However, data for 2011 was not available and April 2013 was chosen as this is the earliest period in the previous decade for which benchmark index composition and weightage of various stocks in the index are available. October 2019 has been chosen as this represents the pre-Covid period. As we are aware, Covid first appeared in November 2019 in Wuhan, China. October 2021 represents post-Covid period as most parts of the world opened up after lockdown during this period. October 2021 also makes the analysis comparable with October 2019 - pre-Covid period. Where the monthly portfolio of mutual funds is not available, the monthly portfolio of the subsequent months available in 2013 have been considered. To ensure consistency throughout the three time periods, some categories of mutual funds like index funds, growth funds, children's funds and retirement plans which were earlier part of equity funds have not been considered as these were later categorised separately under solution-oriented schemes in 2019 and 2021.

MF schemes which add up to 90% and above of the total assets under management (AUM) have been considered for study for each time frame chosen. For October 2021, MF schemes which have a minimum AUM of nearly Rs.10 Bn and above have been considered for the study. For October 2019, MF schemes with AUM of over Rs.8.0 Bn and above have been considered. For April 2013, MF schemes which have a minimum AUM of Rs.3.0 Bn are included for this study. Since open-ended schemes constitute most of the MF schemes in India these alone have been considered for the study.

3.4. Benchmark Indices Used for this Study

For the composition of the benchmark, the NSE Indices website was accessed to get the constituents and weightage of each stock in the benchmark at different points in time. Benchmark indices prevalent at the time of initiation of this research, i.e. October 2021 have been used for the calculation of the local bias of each MF scheme (NSE, n.d.). Further, benchmark indices of NSE have been considered for most categories of MF portfolios as the portfolio constituents and weightage of each stock are available on the NSE Indices website for all the periods considered for this study. BSE S&P indices for most categories are not publicly available, hence, even for those MF schemes where BSE S&P indices are the benchmark, NSE indices have been considered. It is significant to note that there is no

substantial difference in the constitution of the NSE and BSE indices. For some Thematic Funds, BSE S&P indices are considered. The benchmark indices of each category of mutual funds are given in Table 3.4. All the above benchmark indices comprise only domestic stocks and none of these benchmark indices have any foreign stocks in their overall composition.

Table 3.4: Benchmark Indices for Various Categories of Mutual Funds

S No	Category of Mutual Funds	Year	Benchmark Indices
1	Large-cap Fund	2013	CNX 100 Index
2	Large-cap Fund	2019/2021	Nifty 100 Index
3	Midcap Fund	2013	CNX Midcap 100 Index
4	Midcap Fund	2019/2021	Nifty Midcap 150 Index
5	Large-Midcap Fund	2013	CNX 200 Index
6	Large-Midcap Fund	2019	Nifty 200 Index
7	Large-Midcap Fund	2021	Nifty Large-Midcap 250 Index
8	Small-cap Fund	2013	CNX Small-cap 100 Index
9	Small-cap Fund	2019/2021	Nifty Small-cap 250
10	Flexi-cap Fund	2013/2019/2021	Nifty 500 Index
11	Focussed Fund	2013/2019/2021	Nifty 500 Index
12	Value Fund	2013/2019/2021	Nifty 500 Index
13	Multicap Fund	2013/2019/2021	Nifty 500 Index
14	ELSS	2013/2019/2021	Nifty 500 Index
15	Dividend Fund	2013/2019/2021	Nifty 500 Index
16	Contra Fund	2013/2019/2021	Nifty 500 Index
17	Banking Sector Fund	2013	NSE CNX Finance Index
18	MNC Fund	2013	NSE CNX MNC Index
19	Infrastructure Fund	2013	NSE CNX Infrastructure Index
20	Pharma Fund	2013	NSE CNX Pharma Index
21	Power and Energy Fund	2013	NSE CNX Energy Index
22	Technology Fund/Digital Fund	2019/2021	NSE IT Index
23	Banking & Fin. Services Fund	2019/2021	Nifty Financial Services 20 Index
24	MNC Fund	2019/2021	Nifty MNC Index
25	Consumer Fund	2019/2021	Nifty Consumption Index

26	Infrastructure Fund	2019/2021	Nifty Infrastructure Index
27	ESG Fund	2021	S&P BSE ESG Index
28	Healthcare Fund	2021	S&P BSE Healthcare Index
29	FMCG Fund	2021	Nifty FMCG Index

Source: Website of NSE <https://www.nseindia.com/reports-indices-historical-index-data>

3.5. Comparison of Data Used in This and Earlier Studies

Coval and Moskowitz (1999) identified the top 10 holdings of each mutual fund which mainly invested in US stocks. The data source was Nelson's 1996 Directory of Investment Managers. Since Nelson's dataset had records of the top 10 holdings of each investment manager, the authors restricted their study to the top 10 holdings. These holdings accounts for 30 per cent of a manager's total portfolio or asset value.

In the current study, the local bias has been calculated for the entire holding of each mutual fund as the data for each active mutual fund is available in the Indian context. The top 10 holdings in Indian mutual funds constitute between 46-48 per cent of the total asset value of the portfolio. Given the much higher proportion of top 10 stocks in Indian mutual funds portfolio, it is considered to be of interest to analyse the home bias phenomenon in top 10 holdings also.

Coval and Moskowitz (1999) identified mutual funds which primarily invested in US equities, which are defined as those funds for which at least 5 of the top 10 holdings are US-headquartered firms. The current study considers all those domestic mutual funds that have been mandated to primarily invest in Indian companies and have a domestic benchmark according to the category of funds. However, these funds have been allowed the flexibility/option to invest a small portion of their funds in foreign stocks according to SEBI guidelines.

3.6. Methodology for Calculation of Local Bias

In literature, lack of international diversification is referred to as equity home bias or home bias. Alternatively, home bias is an investment behaviour where the investors allocate disproportionately large amounts to domestic assets compared to their share in the world market capitalisation. Local bias as a phenomenon is similar to home bias but within the

boundaries of a country, or an intra-national phenomenon. It is generally related to the distance between the investor and the investee company within the country. Just as the home bias phenomenon refers to the tendency to invest larger proportions domestically, local bias indicates investors' inclination to invest higher proportion of their investments in assets located close to them. Since the cause and effect of both home bias and local bias are similar, in this entire study, home bias, equity home bias, local bias, location bias and location preference are used interchangeably to represent home bias or proximity preference.

Home bias in finance literature is generally determined as the difference between the actual holding of domestic equity assets and the share of domestic equity in the world market portfolio. In other words, it is the difference between the optimal portfolio holdings and the actual portfolio holdings of foreign stocks as a percentage of the optimal holding. This study considers those domestic mutual funds that have been mandated to primarily invest in Indian companies and have a domestic benchmark according to the category of funds. However, these funds have also been allowed the flexibility to invest a small portion of their funds in foreign stocks according to SEBI guidelines. Given that these mutual funds predominantly invest in domestic equities, the local bias measure is used in which the optimal portfolio holding is the market portfolio or the benchmark index.

3.6.1. Definition of Local Bias

In this study, home bias or local bias is defined as the fund manager's preference for local stocks vis-à-vis to a pre-specified benchmark (or market portfolio or benchmark index). This is a well-established methodology that has been used in various studies relating to the local bias phenomenon in mutual funds or proximity preference (Coval & Moskowitz, 1999; Parwada, 2008; Pool et al., 2012).

The first step would be the calculation of the Local Bias (LB) of each mutual fund scheme for April 2013, October 2019 and October 2021 by measuring the distance between the fund manager and the corporate headquarters of the stock invested in by the fund manager. This distance is multiplied by the difference between the benchmark weight and the fund manager's weightage and then scaling it (dividing it) against the benchmark average distance.

For the mathematical computation of LB, there are F fund managers or mutual fund schemes, n different securities which can be considered by the fund manager, m_{ij} represents the market portfolio weight of the stock j for which fund manager i is compared. h_{ij} represents the actual

weight that fund manager i places on stock j . The actual distance between fund manager i and headquarters of stock j is represented by d_{ij} . In this study, the distance d_{ij} has been taken from Google Maps.

Box. 3.1: Calculation of Distance for Determining Home Bias

The common way to calculate the distance between two points on the earth's surface using the Haversine formula (Eq.3.1). This formula employs spherical trigonometry to calculate the distance between two points on the surface of the sphere; in other words the shortest distance in the great circle. The two points on the earth's surface are determined by the latitude and longitude. The formula to calculate the distance is

$$d_{ij} = \text{Arccos}[\sin(\text{Lat}_i) \times \sin(\text{Lat}_j) + \cos(\text{Lat}_i) \times \cos(\text{Lat}_j) \times \cos(\text{Lon}_j - \text{Lon}_i)] * 2\pi r / 360 \quad (3.1)$$

where the Lat and Lon represent the latitude and longitude of the fund manager's location I and the headquarters of stock or company j ; r is the radius of the earth which is approximately 6378 km.

One of the primary applications of this formula was for navigation and was used to determine the most efficient and shortest route between two locations. Now, this calculation that can be handled digitally as there are algorithms and programs which can calculate distances. Google Maps, which uses the Haversine formula to calculate the distance between two points has been employed in the current study.

The average distance of benchmark is computed as follows:

$$D_i^M = \sum_{j=1}^n m_{ij} d_{ij} \quad (3.2)$$

The location bias test statistic is calculated as follows:

$$LB_i = \sum_{j=1}^n (m_{ij} - h_{ij}) d_{ij} / d_i^M \quad (3.3)$$

Local Bias (LB_i) which measures how close or far the fund manager i is to her portfolio than to the benchmark. The null hypothesis is $H_0: LB_i = 0$ which means that there is

no local bias when the fund manager invests in stocks. A positive LB measure indicates preference for geographically proximate equities, and a negative measure signifies preference for distant firms. Once calculated, the local bias is compared for the periods April 2013, October 2019 and October 2021. Further, the local bias calculated for different categories of mutual funds is compared.

3.7. Statistical Significance of Local Bias by t-Test

After calculating the LB, a t-test is conducted to determine whether there is a significant difference or significant departure of the estimated value of the LB from the hypothesized value. The study is done with the null hypothesis that there is no local bias ($LB = 0$), which means that there is no local bias or proximity preference when the fund manager invests in stocks. In other words, there is no difference in the average distance between the portfolio and the benchmark. To find out how likely the null hypothesis is true, the p-value is calculated. The smaller the p-value, the more likely that we reject the null hypothesis.

3.8. Local Bias and Performance Comparison by Quartiles

The final part of the study is to examine whether fund managers in India generate better returns by investing in firms/companies closer to them or otherwise. This is done using quantiles where the data set is divided into parts and then analysed. For this study, we will be converting the data into quartiles – four parts. The data is ordered from smallest to highest in terms of local bias. The first 25% constitutes the first quartile, the second 25% constitutes the second quartile and so on. The average local bias of each quartile is compared with the trailing 1-year net returns (portfolio returns net off benchmark returns) generated by the respective MF scheme in the respective quartile. This analysis is done for two periods – pre-Covid (2019) and post-Covid (2021) – to see whether there has been any change in the pattern of investments with reference to distance. Either each quartile can be analysed or the highest and the lowest quartiles can be analysed to observe the emergence of any trend.

3.9. Chapter Conclusion

This chapter details the various sources from which data has been collated for this study. It lists the internet sources from where data has been taken for the present study. Further, this chapter gives details of the sample size, the scope of study and limitations in the data set, cut-

off limits in AUM for different years and the various benchmark indices that have been used. A comparison of data used in this study vis-à-vis earlier studies is also provided.

The latter half of this chapter gives the research methodology used to calculate the local bias in mutual fund portfolios in India. The local bias is first defined, following which the calculation of local bias is explained. The local bias calculated in this study is compared with 1-year net returns generated by the MF schemes to see whether there is any trend in the performance of the fund vis-à-vis the local bias.

CHAPTER 4

EMPIRICAL RESULTS AND INTERPRETATION

4.1. Overview

This chapter gives the empirical results for each of the research objectives outlined in Chapter 2. The central part of this study is the local bias (LB) of Indian mutual funds during different periods of time. To carry out this study, an understanding of the data considered for the study, the sample size, the composition of the mutual fund portfolio in terms of domestic and foreign stocks, the benchmarks considered etc. have already been presented in Chapter 3 (Data and Methodology). Based on the data discussed in Chapter 3, Section 4.2 measures and compares the local bias (LB) for all the periods viz. 2013, 2019 and 2021. Section 4.3 analyses the LB measure for different categories of mutual funds based on the size of companies they invest in. Finally, in Section 4.4 the LB measure and the performance of mutual funds in terms of the net returns they generate are compared to observe any relationship between local bias and net returns of the MF schemes.

4.2. Calculation of Local Bias and Comparison Over Three Periods

The summary of LB measures for all three periods is given in Tables 4.1 and 4.2. Tables 4.3, 4.4 and 4.5 give the LB of the total portfolio of each MF scheme based on which the LB summary (Tables 4.1 and 4.2) for the years 2013, 2019 and 2021 has been derived. LB of the top 10 stocks of each MF scheme is given in Tables 4.6, 4.7 and 4.8. For a detailed calculation of the LB of each MF scheme (for the total portfolio and the top 10 stocks), the weighted average distance of the benchmark index and the weighted average distance of the portfolio is calculated. These calculations are given in Annexures A, B, C, D and E. Annexure A gives the benchmark weighted average distance calculation for one MF scheme in each category viz. Large-cap, Midcap, Small-cap etc. The calculation is shown only for one MF benchmark in each category as the composition of benchmark and weightage is the same in each category. Annexure B gives a summary of the benchmark weighted average distance of each MF. Annexures C, D and E give the weighted average distance calculation of each MF portfolio for the years 2013, 2019 and 2021 respectively based on which the LB for each MF is calculated. The LB for each mutual fund has been arrived at based on the average distance calculated. The results in Annexures B, C, D and E are summarized in Table 4.3 to Table 4.8.

Table 4.1: Local Bias of all Mutual Funds with Domestic and Foreign Stocks

	Avg. Dist. – B'Mark (in km)	Avg. Dist. – Portfolio (in km)	Diff.	Local Bias	p-value
Apr-13					
Total Holding - Equal Wt.	581	621	-40	-15%	0.06
Total Holding - Value Wt.	559	598	-39	-13%	0.07
TOP 10 - Equal Wt.	271	266	5	-16%	0.07
TOP 10 - Value Wt.	238	241	-2	-15%	0.10
Oct-19					
Total Holding - Equal Wt.	545	595	-50	-26%	0.00***
Total Holding - Value Wt.	507	540	-33	-15%	0.00***
TOP 10 - Equal Wt.	170	210	-40	-65%	0.00***
TOP 10 - Value Wt.	133	186	-53	-60%	0.00***
Oct-21					
Total Holding - Equal Wt.	536	729	-193	-48%	0.00***
Total Holding - Value Wt.	509	720	-211	-49%	0.00***
TOP 10 - Equal Wt.	122	273	-151	-224%	0.00***
TOP 10 - Value Wt.	89	303	-214	-327%	0.00***

Avg. Dist. – Average Distance, Diff. – Difference, Wt. – Weight

To calculate the local bias (LB) of each mutual fund scheme a table is prepared in which, first, the average distance of the benchmark is calculated followed by the average distance of the portfolio of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme.

This table gives the main empirical results (summary) of the local bias (LB) for three different periods, 2013, 2019 and 2021. The LB measure is presented in two ways. LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the overall LB for all schemes considered for this study. LB-value weight means each mutual fund scheme is given weightage according to the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study.

*** 1 per cent significance level, ** 5 per cent significance level

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

Table 4.2: Local Bias of MFs with only Domestic Stocks

Apr-13	Avg. Dist. – B'Mark (in km)	Avg. Dist. – P'folio (in km)	Diff.	Local Bias	p-value
MF with DS - Equal Wt.	582	577	5	-7.2%	0.18
MF with DS - Value Wt.	551	558	-7	-7.3%	0.20
Oct-19					
MF with DS - Equal Wt.	549	549	0	-15.7%	0.04**
MF with DS - Value Wt.	491	500	-9	-10.2%	0.03**
Oct-21					
MF with DS - Equal Wt.	538	562	-24	-14.8%	0.00***
MF with DS - Value Wt.	447	478	-32	-11.5%	0.00***

Avg. Dist – Average Distance, B'Mark – Benchmark, P'folio – Portfolio, Diff. – Difference, DS – Only Domestic Stocks

In this table, LB is calculated for MFs with only domestic stock investment by removing mutual fund schemes with foreign stock investment. The LB measure is given with equal weight and value weight.

*** 1 per cent significance level, ** 5 per cent significance level

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.2.1. Comparison of Local Bias in 2021, 2019 and 2013

Tables 4.1 and 4.2 give the LB for three different periods which is analysed below. In October 2021, the LB is -48% to -49% indicating that the mutual fund managers are investing 48% to 49% (p-value – 0.00) farther from the benchmark. This indicates an absence of any proximity preference among investors. Instead, mutual funds exhibit a propensity to invest farther from the home location. In October 2019, the LB is -15% to -26% indicating that mutual fund managers are investing 15% to 26% (p-value – 0.00) farther from the benchmark. The mutual funds exhibit a propensity to invest farther from the home location. However, in April 2013, the LB is -13% to -15% (p-value -0.06-0.07), indicating that there is no local bias.

When mutual fund schemes containing foreign stocks are removed and only those MFs which have invested in domestic stocks are considered, it is seen that the LB in 2021 is -12% to -15% which is a statistically significant negative digression from the hypothesized value (no local bias). In 2019, the LB without foreign stock is -10% to -16% which is statistically

significant indicating a tendency to invest in farther locations. In 2013, the LB without foreign stocks is -7%, which is statistically insignificant indicating no local bias.

When the top 10 holdings are considered in 2013, the fund managers invested in companies which were only -15 to -17% farther from the benchmark which is statistically insignificant. When the top 10 holdings of 2019 are seen, the LB is -60% to -65% which shows fund managers invest in locations 60%-65% away from the benchmark. However, this increased manifold to -224% to -337% in 2021 indicating that the top 10 investments of mutual fund managers were much farther away from the benchmark.

When LB of 2013 and 2021 are compared, there is a significant shift from -13-15% in 2013 to -48%-49% in 2021. When we specifically examine the local bias phenomenon in mutual fund portfolios for pre-Covid and post-Covid periods (2019 and 2021), there are a few significant observations. There is a sudden increase in foreign stock investments by MFs during the Covid period (from Rs.14.4 Bn to Rs.167.5 Bn). This is one of the main reasons for the sudden increase in negative local bias (value weight) during the Covid period from -15% to -26% to -48% to -49%. This suggests that mutual fund managers were more comfortable investing in farthest locations including international stocks during Covid-19. In the top 10 stocks too, the negative local bias (value weight) or the tendency to invest in farther located stocks increased manifold from -15% in 2013 to -60% in 2019 to -327% in the 2013 and 2021 period. This suggests that mutual fund managers in 2021 were investing in extremely farther locations (international locations) when investing in top 10 stocks.

The above results demonstrate that mutual funds managers in India are investing in stocks farther to the average distance of the benchmark especially during the Covid period. The significant increase in negative local bias (value weight) is attributed mainly to a sharp rise in foreign stock investment in the MF portfolios. Even without considering foreign stocks, the last decade has seen a gradual increase in investment in stocks which are located farther away domestically.

As mentioned in the review of literature, there are many studies which point to a reduction in home bias due to financial globalisation across various economies. However, in this study, the results indicate negative local bias which means fund managers are investing in very far locations. For an emerging economy like India where the local bias is generally considered

high compared to an advanced economies, fund managers investing in farther locations demonstrates that their investment decisions are guided by factors other than distance. Another corollary from the finding is that distance as a proxy for information asymmetry has less explanatory power in the current context.

4.2.1.1. Local Bias of Each Mutual Funds Scheme in 2013 (Total Portfolio)

As already explained, the summary of local bias (LB) presented in Tables 4.1 and Table 4.2 has been arrived at by first calculating the weighted average distance (WAD – Benchmark) of the benchmark and the weighted average distance (WAD – Portfolio) of the portfolio of the respective mutual fund scheme. The difference between the two gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme.

The LB measure is presented in two ways. LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the overall LB for all schemes considered for this study in a particular year; LB-Value weight means each mutual fund scheme is given weightage according to the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study in a particular year. Table 4.3 gives the LB of the total portfolio of each mutual fund scheme in 2013 which has been arrived at by the above calculation. To calculate the LB of each MF, the weighted average distance (WAD) of the benchmark and the weighted average distance (WAD) of the portfolio of each mutual fund scheme in 2013 are calculated which are given in Annexure B and Annexure C respectively. The LB of a total of 93 mutual fund schemes are given below which constitutes 90% of the total AUM of equity MFs in April 2013. Of these 93 schemes, only 2 schemes invested in foreign stocks (shown in italics). In 2013, the categorisation of mutual fund schemes was different from the current categorization. To maintain consistency in analysis and to enable comparison, these have been categorized according to the SEBI circular of 2017 and 2020.

Table 4.3 - Local Bias of each Mutual Funds Scheme in 2013 (Total Portfolio)

S No	Large-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Franklin India BC Fund	49	3.47%	492.07	599.10	-107.03	-22%	17.10	20.82	-3.72	-0.76%
2	ICICI Pru. Focussed BC Fund	44	3.12%	490.79	545.76	-54.97	-11%	15.30	17.02	-1.71	-0.35%
3	Aditya Birla SL FL Eq. Fund	32	2.27%	492.45	478.52	13.92	3%	11.20	10.89	0.32	0.06%
4	DSP Top 100 Eq. Fund	34	2.38%	498.35	418.61	79.74	16%	11.85	9.95	1.90	0.38%
5	UTI MS Unit Scheme	23	1.63%	490.77	403.98	86.80	18%	7.98	6.57	1.41	0.29%
6	Reliance Equity Fund	10	0.71%	492.45	454.32	38.12	8%	3.49	3.22	0.27	0.05%
7	Kotak Mahindra 50 Unit Scheme	7	0.53%	490.77	640.43	-149.66	-30%	2.58	3.36	-0.79	-0.16%
8	SBI BC Fund	7	0.52%	496.68	566.17	-69.49	-14%	2.57	2.93	-0.36	-0.07%
9	Axis Equity Fund	6	0.39%	492.07	450.10	41.97	9%	1.93	1.76	0.16	0.03%
10	Tata Pure Equity Fund	7	0.46%	499.35	573.54	-74.18	-15%	2.30	2.64	-0.34	-0.07%
11	Birla Sun Life Top 100 Fund	3	0.22%	492.45	525.41	-32.96	-7%	1.09	1.16	-0.07	-0.01%
12	IDFC Equity Fund	3	0.22%	492.07	582.57	-90.50	-18%	1.11	1.31	-0.20	-0.04%
13	SBI Magnum Equity Fund	10	0.74%	496.68	498.56	-1.88	0%	3.65	3.67	-0.01	0.00%
14	DSP Tiger Fund	13	0.90%	498.35	460.10	38.26	8%	4.48	4.13	0.34	0.07%
15	Sundaram Select Focus	5	0.39%	1,395.28	1,278.44	116.84	8%	5.40	4.95	0.45	0.03%
16	UTI Top 100 Fund	6	0.42%	490.77	366.90	123.87	25%	2.08	1.56	0.53	0.11%

AUM – Assets under Management (Rs. in Bn), Wt.- Weight, WAD – Weighted Average Distance, Diff. – Difference, LB – Local Bias, B'Mark – Benchmark, BC – Bluechip, Eq. – Equity, ICICI Pru. – ICICI Prudential, UTI MS – UTI Master Share, Birla SL – Birla Sun Life, FL – Frontline

This table gives the LB of the total portfolio of each MF scheme in 2013 based on which the LB summary for 2013 is given in Tables 4.1 and 4.2.

Mutual Fund schemes in *italics* represent foreign stock in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

S No	Large Midcap Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
17	HDFC Top 200 Fund	117	8.25%	530.45	527.45	3.00	1%	43.74	43.50	0.25	0.05%
18	Franklin India FC Fund or Franklin India Eq.Adv. Fund	15	1.09%	524.59	698.43	-173.84	-33%	5.72	7.62	-1.90	-0.36%
19	Reliance Vision Fund	16	1.16%	525.02	542.27	-17.25	-3%	6.09	6.29	-0.20	-0.04%
20	SBI Magnum Multiplier Plus Scheme 93	10	0.73%	525.87	358.09	167.77	32%	3.85	2.62	1.23	0.23%
21	UTI - Master Plus Unit Scheme - BC FC Fund	9	0.62%	522.64	471.30	51.35	10%	3.23	2.91	0.32	0.06%
22	Reliance Top 200 Fund	8	0.55%	525.02	549.92	-24.90	-5%	2.88	3.02	-0.14	-0.03%
23	Kotak Opp. Fund	6	0.45%	522.64	434.80	87.84	17%	2.35	1.96	0.40	0.08%
24	ICICI Top 200 Fund	5	0.33%	522.74	458.00	64.74	12%	1.72	1.51	0.21	0.04%
25	DSP Blackrock Opp. Fund	5	0.35%	531.45	542.63	-11.18	-2%	1.88	1.92	-0.04	-0.01%
26	Tata Equity Opp. Fund	5	0.33%	532.45	574.17	-41.72	-8%	1.78	1.92	-0.14	-0.03%
27	UTI Leadership Fund or UTI Bluechip Flexicap Fund	6	0.41%	522.64	460.44	62.21	12%	2.16	1.90	0.26	0.05%

Opp. – Opportunities, BC – Bluechip, FC – Flexicap, Eq. – Equity, Adv. – Advantage

S No	Midcap & Small-cap Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
28	Reliance Growth Fund	47	3.32%	601.85	593.61	8.24	1%	19.97	19.69	0.27	0.05%
29	HDFC MC Opportunities Fund	28	1.94%	611.10	642.32	-31.22	-5%	11.86	12.47	-0.61	-0.10%
30	DSP Small and MC Fund	11	0.75%	612.10	591.31	20.79	3%	4.62	4.46	0.16	0.03%
31	Birla Sun Life MC Fund	11	0.78%	601.85	688.93	-87.07	-14%	4.67	5.35	-0.68	-0.11%
32	Franklin India Prima Fund	7	0.53%	601.06	492.76	108.29	18%	3.16	2.59	0.57	0.09%
33	UTI - Master Value Fund	6	0.40%	594.36	597.10	-2.74	0%	2.40	2.41	-0.01	0.00%
34	DSP Microcap Fund	4	0.27%	761.74	787.00	-25.26	-3%	2.08	2.15	-0.07	-0.01%
35	Reliance Smallcap Fund	3	0.23%	751.30	598.37	152.93	20%	1.72	1.37	0.35	0.05%
36	Franklin India Smaller Companies Fund	3	0.21%	750.51	540.12	210.39	28%	1.55	1.11	0.43	0.06%
37	Sundaram SMILE Fund – Smallcap	3	0.23%	1,390.48	855.21	535.27	38%	3.20	1.97	1.23	0.09%
38	Sundaram Select MC Fund	19	1.31%	1295.60	1066.27	229.33	18%	16.94	13.94	3.00	0.23%

MC – Midcap

S No	Flexi-cap, Value, Focused Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
39	HDFC Equity Fund – FC	111	7.80%	545.77	585.61	-39.84	-7%	42.59	45.70	-3.11	-0.57%
40	Reliance Equal Opp. Fund – MC	51	3.60%	540.00	536.60	3.40	1%	19.43	19.31	0.12	0.02%
41	UTI Opp. Fund – VF	36	2.54%	537.21	519.29	17.92	3%	13.67	13.21	0.46	0.08%
42	IDFC Premier Eq. Fund – FC	34	2.38%	539.54	527.74	11.80	2%	12.83	12.55	0.28	0.05%
43	ICICI Pru. Discovery Fund - VF	27	1.90%	537.35	713.81	-176.46	-33%	10.23	13.59	-3.36	-0.63%
44	Reliance Regular Savings Fund - VF	25	1.78%	540.00	564.88	-24.88	-5%	9.61	10.05	-0.44	-0.08%
45	DSP Blackrock Equity Fund – FC	22	1.58%	546.77	408.40	138.37	25%	8.64	6.45	2.19	0.40%
46	UTI Equity Fund - FC	23	1.62%	537.21	624.30	-87.08	-16%	8.69	10.09	-1.41	-0.26%
47	SBI Contra Fund	20	1.39%	540.93	524.96	15.98	3%	7.51	7.29	0.22	0.04%
48	IDFC Sterling Value Fund - VF	14	0.96%	539.54	515.94	23.61	4%	5.21	4.98	0.23	0.04%
49	Reliance Long Term Eq. Fund - FF	9	0.60%	540.00	612.72	-72.72	-13%	3.25	3.68	-0.44	-0.08%
50	Birla Sun Life Equity Fund - FC	7	0.48%	540.00	517.91	22.09	4%	2.58	2.48	0.11	0.02%
51	Canara Robeco Eq. Diversified - FC	7	0.47%	547.77	544.20	3.57	1%	2.57	2.56	0.02	0.00%
52	Templeton India Growth Fund – VF	6	0.43%	539.54	643.54	-104.00	-19%	2.34	2.79	-0.45	-0.08%
53	Franklin I High Growth Co Fund - FF	5	0.37%	539.54	603.73	-64.18	-12%	2.01	2.25	-0.24	-0.04%
54	HDFC Capital Builder Fund - VF	4	0.31%	545.77	564.53	-18.76	-3%	1.68	1.73	-0.06	-0.01%
55	HDFC Long Term Equity Fund - FF	4	0.30%	545.77	516.13	29.64	5%	1.65	1.56	0.09	0.02%
56	SBI Magnum Multicap Fund – MC	3	0.24%	540.93	538.08	2.85	1%	1.29	1.29	0.01	0.00%
57	DSP Focus 25 Fund - Focus	3	0.21%	546.77	516.30	30.47	6%	1.16	1.09	0.06	0.01%
58	Kotak Select Focus Fund	3	0.24%	537.21	537.38	-0.16	0%	1.28	1.28	0.00	0.00%
59	Tata Equity P/E Fund – FF	5	0.32%	547.77	716.57	-168.80	-31%	1.75	2.28	-0.54	-0.10%

FC – Flexicap, MC – Multicap, VF – Value Fund, FF – Focussed Fund, Eq. – Equity, Opp. – Opportunities

S No	Flexi-cap, Value, Focused Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
60	SBI Emerging Business Fund - SBI Focused Eq. Fund	12	0.87%	540.93	793.94	-253.00	-47%	4.72	6.93	-2.21	-0.41%
61	UTI - Dividend Yield Fund	34	2.40%	537.21	538.53	-1.31	0%	12.87	12.90	-0.03	-0.01%
62	Birla Sun Life Equity Fund - FC	12	0.88%	540.00	750.31	-210.31	-39%	4.74	6.58	-1.85	-0.34%
63	<i>Templeton India Equity Income Fund</i>	9	0.66%	539.54	2,032.05	-1,492.51	-277%	3.54	13.34	-9.79	-1.82%
64	UTI India Lifestyle Fund	3	0.24%	537.21	441.12	96.09	18%	1.28	1.05	0.23	0.04%

S No	ELSS Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
65	SBI Magnum Tax Gain Scheme	41	2.87%	540.93	470.87	70.06	13%	15.52	13.51	2.01	0.37%
66	HDFC Tax Saver Fund	34	2.36%	545.77	578.67	-32.90	-6%	12.90	13.68	-0.78	-0.14%
67	Reliance Tax Saver ELSS Fund	20	1.41%	540.00	748.67	-208.67	-39%	7.60	10.54	-2.94	-0.54%
68	ICICI Prudential Tax Plan	14	1.01%	537.35	518.18	19.18	4%	5.44	5.25	0.19	0.04%
69	Birla Sun Life Tax Relief 96	14	1.00%	540.00	453.32	86.68	16%	5.40	4.53	0.87	0.16%
70	UTI-Master Equity Plan Unit Scheme	12	0.88%	537.21	494.18	43.03	8%	4.72	4.34	0.38	0.07%
71	Sundaram Tax Saver Fund	13	0.92%	1,384.10	1,262.44	121.66	9%	12.72	11.60	1.12	0.08%
72	Franklin India Taxshield	9	0.64%	539.54	526.25	13.30	2%	3.47	3.38	0.09	0.02%
73	HDFC Long-Term Advantage Fund	8	0.58%	545.77	534.89	10.88	2%	3.18	3.12	0.06	0.01%
74	DSP Tax Saver Fund	7	0.52%	546.77	585.97	-39.20	-7%	2.82	3.02	-0.20	-0.04%
75	Axis Long-Term Equity Fund	6	0.41%	539.54	513.80	25.74	5%	2.21	2.10	0.11	0.02%
76	Canara Robeco Equity Tax saver	6	0.41%	547.77	507.73	40.04	7%	2.23	2.06	0.16	0.03%
77	UTI Equity Tax Saving Plan	5	0.32%	537.21	449.40	87.82	16%	1.71	1.43	0.28	0.05%

S No	Thematic Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
78	UTI Banking Sector Fund	4	0.26%	69.28	186.75	-117.48	-170%	0.18	0.49	-0.31	-0.45%
79	Reliance Banking Fund	18	1.27%	66.65	342.01	-275.37	-413%	0.85	4.36	-3.51	-5.26%
80	SBI Magnum Global Fund	9	0.62%	432.21	724.67	-292.46	-68%	2.68	4.50	-1.82	-0.42%
81	Birla SL MNC Fund	4	0.27%	403.91	586.29	-182.39	-45%	1.09	1.58	-0.49	-0.12%
82	UTI MNC Fund	3	0.18%	394.72	522.64	-127.92	-32%	0.72	0.95	-0.23	-0.06%
83	UTI Infrastructure Fund	16	1.13%	639.41	481.99	157.41	25%	7.21	5.43	1.78	0.28%
84	ICICI Pru Infrastructure Fund	15	1.07%	639.48	589.54	49.94	8%	6.86	6.32	0.54	0.08%
85	HDFC Infrastructure Fund	5	0.36%	643.33	571.55	71.78	11%	2.30	2.04	0.26	0.04%
86	Reliance Infrastructure Fund	5	0.32%	640.21	719.74	-79.53	-12%	2.07	2.33	-0.26	-0.04%
87	Birla SL Infrastructure Fund	3	0.23%	640.21	527.82	112.39	18%	1.47	1.21	0.26	0.04%
88	Reliance Div. Power Sector Fund	16	1.13%	640.21	472.26	167.95	26%	7.24	5.34	1.90	0.30%
89	SBI Infrastructure Fund	5	0.33%	578.61	495.36	83.24	14%	1.91	1.63	0.27	0.05%
90	Tata Infrastructure Fund	8	0.59%	645.33	552.22	93.11	14%	3.78	3.24	0.55	0.08%
91	Reliance Pharma Fund	7	0.48%	263.49	348.69	-85.19	-32%	1.27	1.68	-0.41	-0.16%
92	<i>Reliance Natural Res. Fund</i>	12	0.86%	525.02	3,163.05	-2,638.03	-502%	4.54	27.34	-22.80	-4.34%
93	Sundaram Energy Opp. Fund	5	0.39%	1,689.41	1,490.11	199.29	12%	6.51	5.74	0.77	0.05%
	All Categories Total/Average	1,419	100%	580.89	620.65	-39.76	-15.4%	559.36	598.38	-39.02	-13.5%

Opp. – Opportunities, Div.– Diversified, Res. – Resources

4.2.1.2. *Local Bias of each Mutual Fund Scheme in 2019 (Total Portfolio)*

As already explained, the summary of local bias (LB) presented in Tables 4.1 and Table 4.2 has been arrived at by first calculating the weighted average distance (WAD – Benchmark) of the benchmark and the weighted average distance (WAD – Portfolio) of the portfolio of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme.

The LB measure is presented in two ways. LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the overall LB for all schemes considered for this study in a particular year and LB-Value weight means each mutual fund scheme is given weightage according to the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study in a particular year. Table 4.4 gives the LB of the total portfolio of each mutual fund scheme in 2019 which has been arrived at by the above calculation. To calculate the LB of each MF, the weighted average distance (WAD) of the benchmark and the weighted average distance (WAD) of the portfolio of each mutual fund scheme in October 2019 is calculated which is given in Annexure B and Annexure D respectively. The LB of a total of 130 mutual fund schemes are given below which constitutes 92% of the total AUM of equity MF in October 2019. Out of these 130 schemes, only 5 schemes invested in foreign stocks (shown in italics). In 2019, Flexi-cap funds were not in existence as this category was announced only in November 2020. Also, the composition of Multicap funds was changed in September 2020.

Table 4.4 - Local Bias of each Mutual Fund Scheme in 2019 (Total Portfolio)

S No	Large-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	SBI BC Fund	236	3.41%	395.08	455.87	-60.78	-15%	13.47	15.55	-2.07	-0.52%
2	ICICI Prudential BC Fund	241	3.49%	395.06	489.61	-94.54	-24%	13.79	17.09	-3.30	-0.84%
3	Aditya Birla SL FL Eq. Fund	212	3.07%	396.26	481.86	-85.60	-22%	12.15	14.78	-2.63	-0.66%
4	HDFC Top 100 Fund	185	2.68%	401.31	481.50	-80.18	-20%	10.74	12.89	-2.15	-0.53%
5	Mirae Asset Large Cap Fund	159	2.30%	395.30	464.86	-69.55	-18%	9.09	10.69	-1.60	-0.40%
6	Nippon India Large Cap Fund	131	1.89%	396.26	427.24	-30.99	-8%	7.50	8.09	-0.59	-0.15%
7	Franklin India BC Fund	67	0.96%	396.26	440.63	-44.37	-11%	3.82	4.25	-0.43	-0.11%
8	UTI Mastershare Unit Scheme	62	0.89%	395.09	437.96	-42.88	-11%	3.53	3.91	-0.38	-0.10%
9	Axis BC Fund	87	1.27%	395.89	223.50	172.39	44%	5.01	2.83	2.18	0.55%
10	DSP Top 100 Equity Fund	26	0.38%	402.14	321.20	80.94	20%	1.54	1.23	0.31	0.08%
11	Kotak Bluechip Fund	14	0.21%	395.08	430.98	-35.90	-9%	0.82	0.90	-0.07	-0.02%
12	JM Largecap Fund	26	0.37%	395.74	222.80	172.94	44%	1.46	0.82	0.64	0.16%

AUM – Assets under Management (Rs. In Bn), Wt.- Weight, WAD – Weighted Average Distance, LB – Local Bias, B'Mark – Benchmark, Diff. – Difference, BC – Bluechip

This table gives the LB of the total portfolio of each MF scheme in 2019 based on which the LB summary of 2019 is given in Tables 4.1 and 4.2.

Mutual Funds schemes in *italics* represent foreign stock in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

S No	Large Midcap Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
13	Mirae Asset Emg. BC Fund	89	1.28%	434.58	485.90	-51.32	-12%	5.57	6.23	-0.66	-0.15%
14	DSP Equity Opp. Fund	56	0.81%	443.25	461.24	-17.99	-4%	3.61	3.76	-0.15	-0.03%
15	Canara Robeco Emg Eq. F	52	0.76%	443.25	488.62	-45.36	-10%	3.36	3.70	-0.34	-0.08%
16	A.Birla SL Equity Adv. Fund	51	0.74%	436.17	475.47	-39.30	-9%	3.22	3.51	-0.29	-0.07%
17	ICICI Pru. Large & MC Fund	37	0.54%	434.47	666.68	-232.21	-53%	2.33	3.58	-1.25	-0.29%
18	SBI Large & Midcap Fund	28	0.40%	434.43	626.76	-192.33	-44%	1.73	2.50	-0.77	-0.18%
19	IDFC Core Equity Fund	29	0.42%	435.76	319.24	116.52	27%	1.82	1.33	0.49	0.11%
20	Nippon India Vision Fund	28	0.41%	436.17	379.38	56.79	13%	1.79	1.56	0.23	0.05%
21	Kotak Equity Opp. Fund	27	0.40%	434.43	596.19	-161.77	-37%	1.72	2.36	-0.64	-0.15%
22	Franklin India Eq. Adv Fund	26	0.38%	435.98	539.93	-103.96	-24%	1.65	2.04	-0.39	-0.09%
23	Invesco I Growth Opp. Fund	20	0.29%	436.62	553.65	-117.03	-27%	1.26	1.59	-0.34	-0.08%
24	Tata Large & MC Fund	15	0.22%	443.30	550.56	-107.26	-24%	0.97	1.20	-0.23	-0.05%
25	HDFC Large & MC Fund	14	0.20%	443.30	593.49	-150.19	-34%	0.87	1.16	-0.29	-0.07%
26	L&T Large and MC Fund	14	0.20%	435.97	434.15	1.82	0%	0.87	0.87	0.00	0.00%
27	Axis Growth Opp. Fund	9	0.13%	435.78	2,796.22	-2,360.44	-542%	0.56	3.61	-3.04	-0.70%
28	UTI Core Equity Fund	9	0.13%	434.43	619.10	-184.67	-43%	0.54	0.78	-0.23	-0.05%
29	Sundaram Large Midcap Fund	9	0.13%	1,361.24	1,152.12	209.12	15%	1.72	1.45	0.26	0.02%

Opp. – Opportunities, BC – Bluechip, MC – Midcap, Eq. – Equities, Adv. – Advantage, I – India

S No	Midcap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
30	HDFC MC Opp. Fund	226	3.27%	741.55	604.18	137.37	19%	24.27	19.78	4.50	0.61%
31	Franklin India Prima Fund	75	1.09%	731.75	618.37	113.38	15%	7.95	6.72	1.23	0.17%
32	DSP MC Fund	67	0.97%	742.52	759.05	-16.53	-2%	7.18	7.34	-0.16	-0.02%
33	Nippon India Gr. Fund	66	0.96%	732.44	691.25	41.19	6%	7.02	6.63	0.40	0.05%
34	Sundaram Midcap Fund	59	0.85%	1,285.48	1,094.11	191.37	15%	10.94	9.31	1.63	0.13%
35	L&T Midcap Fund	58	0.84%	731.74	709.39	22.34	3%	6.17	5.98	0.19	0.03%
36	Kotak Emerging Eq. Fund	53	0.77%	725.65	727.02	-1.37	0%	5.60	5.62	-0.01	0.00%
37	UTI Mid Cap Fund	37	0.54%	725.65	889.00	-163.35	-23%	3.93	4.81	-0.88	-0.12%
38	Axis Midcap Fund	36	0.51%	731.76	625.59	106.17	15%	3.76	3.21	0.55	0.07%
39	SBI Magnum MC Fund	35	0.51%	725.65	749.01	-23.36	-3%	3.70	3.82	-0.12	-0.02%
40	Aditya Birla SL MC Fund	24	0.34%	732.44	654.72	77.72	11%	2.50	2.23	0.26	0.04%
41	ICICI Pru. MC Fund	18	0.27%	726.25	679.23	47.01	6%	1.94	1.81	0.13	0.02%
42	Motilal Oswal MC 30 Fund	16	0.24%	732.44	587.97	144.47	20%	1.72	1.38	0.34	0.05%
43	Mirae Asset MC Fund	10	0.14%	725.18	569.33	155.84	21%	1.05	0.82	0.23	0.03%

MC – Midcap, Opp. – Opportunities, Eq. – Equity, Gr. – Growth

S No	Small-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
44	HDFC Small Cap Fund	91	1.32%	731.99	615.86	116.13	16%	9.67	8.14	1.53	0.21%
45	Nippon India Small Cap Fund	84	1.22%	731.99	687.14	44.85	6%	8.92	8.37	0.55	0.07%
46	Franklin India Smaller Companies Fund	70	1.02%	721.05	559.11	161.94	22%	7.33	5.68	1.65	0.23%
47	L&T Emerging Businesses Fund	61	0.88%	721.03	624.13	96.90	13%	6.37	5.52	0.86	0.12%
48	DSP Smallcap Fund	49	0.71%	732.99	645.00	87.98	12%	5.20	4.58	0.62	0.09%
49	SBI Smallcap Fund	29	0.42%	714.19	771.32	-57.14	-8%	3.01	3.25	-0.24	-0.03%
50	Aditya Birla SL Small cap Fund	23	0.33%	721.88	664.82	57.06	8%	2.38	2.20	0.19	0.03%
51	Kotak Small Cap Fund	13	0.19%	714.19	794.14	-79.95	-11%	1.34	1.49	-0.15	-0.02%
52	Axis Small Cap Fund	12	0.17%	721.05	644.78	76.27	11%	1.25	1.12	0.13	0.02%
53	Sundaram Smallcap Fund	11	0.16%	1315.60	1041.48	274.12	21%	2.07	1.64	0.43	0.03%

S No	Flexi-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
54	Kotak Standard MC Fund	283	4.10%	454.85	444.11	10.74	2%	18.65	18.21	0.44	0.10%
55	HDFC Equity Fund	234	3.39%	462.97	485.60	-22.63	-5%	15.69	16.46	-0.77	-0.17%
56	Aditya Birla SL Eq. Fund	116	1.68%	457.10	441.79	15.31	3%	7.66	7.41	0.26	0.06%
57	Franklin India Eq. Fund	114	1.65%	456.86	377.94	78.91	17%	7.53	6.23	1.30	0.28%
58	UTI Equity Fund	99	1.43%	454.85	613.65	-158.80	-35%	6.52	8.80	-2.28	-0.50%
59	SBI Magnum MC Fund	83	1.21%	454.85	492.13	-37.28	-8%	5.48	5.93	-0.45	-0.10%
60	Axis MC Fund	48	0.70%	456.68	249.59	207.09	45%	3.20	1.75	1.45	0.32%
61	ICICI Prudential MC Fund	45	0.66%	454.94	651.09	-196.15	-43%	2.98	4.27	-1.29	-0.28%
62	Nippon India MC Fund	103	1.49%	457.10	496.87	-39.77	-9%	6.81	7.41	-0.59	-0.13%
63	<i>IDFC MC Fund</i>	56	<i>0.81%</i>	<i>456.65</i>	<i>596.00</i>	<i>-139.35</i>	<i>-31%</i>	<i>3.72</i>	<i>4.85</i>	<i>-1.13</i>	<i>-0.25%</i>
64	DSP Equity Fund	29	0.42%	463.82	375.57	88.25	19%	1.94	1.57	0.37	0.08%
65	L & T Equity Fund	27	0.39%	456.85	367.77	89.08	19%	1.80	1.45	0.35	0.08%
66	Motilal MC 35 Fund	135	1.95%	457.10	415.73	41.37	9%	8.93	8.12	0.81	0.18%
67	<i>Parag Parikh LT Eq. Fund</i>	24	<i>0.34%</i>	<i>472.47</i>	<i>3,562.17</i>	<i>-3,089.70</i>	<i>-654%</i>	<i>1.61</i>	<i>12.15</i>	<i>-10.54</i>	<i>-2.23%</i>
68	Tata Multicap Fund	17	0.25%	464.65	426.37	38.28	8%	1.17	1.07	0.10	0.02%
69	Canara Robeco Div. Eq. Fund	16	0.23%	464.61	370.39	94.22	20%	1.06	0.85	0.22	0.05%

Diff. – Difference, MC – Multicap, Eq. – Equity, LT – Long Term, Div. – Diversified

S No	Focused Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
70	Axis Focused 25 Fund	88	1.27%	456.68	370.11	86.57	19%	5.81	4.71	1.10	0.24%
71	Franklin India Foc. Eq. Fund	87	1.26%	456.86	783.41	-326.55	-71%	5.76	9.87	-4.11	-0.90%
72	SBI Focused Eq. Fund	61	0.89%	454.85	1,024.34	-569.50	-125%	4.03	9.07	-5.04	-1.11%
73	Aditya Birla SL Foc. Eq. Fund	44	0.63%	457.10	416.99	40.11	9%	2.88	2.63	0.25	0.06%
74	Nippon India Foc. Eq. Fund	43	0.62%	457.10	753.06	-295.96	-65%	2.83	4.66	-1.83	-0.40%
75	DSP Focus Fund	20	0.29%	463.82	468.80	-4.98	-1%	1.34	1.35	-0.01	0.00%
76	Mirae Asset-Focused Fund	19	0.27%	454.95	496.85	-41.90	-9%	1.23	1.34	-0.11	-0.02%
77	IDFC Focused Equity Fund	15	0.22%	456.65	338.26	118.40	26%	1.01	0.75	0.26	0.06%
78	Kotak Focused Equity Fund	14	0.20%	454.85	408.31	46.54	10%	0.93	0.83	0.09	0.02%
79	Motilal Oswal Foc. 25 Fund	12	0.17%	457.10	391.07	66.03	14%	0.78	0.67	0.11	0.02%
80	Sundaram Select Focus Fund	10	0.15%	1,356.98	1,313.48	43.50	3%	2.05	1.99	0.07	0.00%

Foc. – Focussed, Eq. – Equity

S No	Value + Contra Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
81	ICICI Pru. Value Dis. Fund	155	2.24%	454.94	672.40	-217.46	-48%	10.17	15.03	-4.86	-1.07%
82	L&T India Value Fund	80	1.16%	456.85	524.88	-68.03	-15%	5.31	6.10	-0.79	-0.17%
83	Tata Equity PE Fund	55	0.79%	464.65	461.42	3.24	1%	3.69	3.66	0.03	0.01%
84	HDFC Capital Builder Value Fund	45	0.66%	462.97	401.47	61.50	13%	3.04	2.63	0.40	0.09%
85	Invesco India Contra Fund	45	0.65%	457.59	600.75	-143.16	-31%	2.97	3.90	-0.93	-0.20%
86	UTI Value Opp. Fund	45	0.65%	454.85	555.29	-100.44	-22%	2.93	3.58	-0.65	-0.14%
87	Aditya Birla SL Pure Value Fund	43	0.62%	457.10	579.97	-122.87	-27%	2.83	3.59	-0.76	-0.17%
88	Nippon India Value Fund	32	0.46%	457.10	528.90	-71.79	-16%	2.08	2.41	-0.33	-0.07%
89	IDFC Sterling Value Fund	31	0.45%	456.65	552.31	-95.66	-21%	2.07	2.51	-0.43	-0.10%
90	SBI Contra Fund	14	0.20%	454.85	551.96	-97.11	-21%	0.91	1.10	-0.19	-0.04%

Opp. – Opportunities, Dis. – Discovery

S No	ELSS Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
91	Axis Long-Term Equity Fund	215	3.11%	456.68	521.42	-64.74	-14%	14.19	16.21	-2.01	-0.44%
92	Nippon India Tax Saver Fund	107	1.54%	457.10	577.50	-120.40	-26%	7.06	8.91	-1.86	-0.41%
93	Aditya Birla Sun Life Tax Relief 96	98	1.42%	457.10	216.32	240.79	53%	6.49	3.07	3.42	0.75%
94	SBI Long-Term Equity Fund	74	1.06%	454.85	311.60	143.24	31%	4.84	3.32	1.52	0.34%
95	HDFC Tax Saver Fund	74	1.07%	462.97	429.74	33.23	7%	4.96	4.61	0.36	0.08%
96	ICICI Prudential LT Eq. Fund	65	0.94%	454.94	624.41	-169.47	-37%	4.29	5.89	-1.60	-0.35%
97	DSP Tax Saver Fund	61	0.88%	463.82	448.09	15.73	3%	4.09	3.95	0.14	0.03%
98	Franklin India Taxshield Fund	41	0.59%	456.86	432.20	24.66	5%	2.71	2.56	0.15	0.03%
99	L&T Tax Advantage Fund	34	0.49%	456.85	466.87	-10.02	-2%	2.26	2.31	-0.05	-0.01%
100	Mirae Asset Tax Saver Fund	27	0.39%	454.95	457.06	-2.11	0%	1.76	1.77	-0.01	0.00%
101	Sundaram Diversified Equity	26	0.38%	1,356.98	1,153.28	203.70	15%	5.16	4.39	0.78	0.06%
102	IDFC Tax Adv. (ELSS) Fund	21	0.30%	456.65	383.59	73.06	16%	1.36	1.14	0.22	0.05%
103	Tata India Tax Savings Fund	20	0.29%	464.65	289.95	174.70	38%	1.35	0.84	0.51	0.11%
104	UTI Master Eq. Plan US	18	0.26%	454.85	429.41	25.44	6%	1.20	1.13	0.07	0.01%
105	Motilal Oswal LT Eq. Fund	16	0.23%	457.10	460.47	-3.37	-1%	1.05	1.05	-0.01	0.00%
106	UTI Long-Term Equity Fund	12	0.18%	454.85	647.15	-192.30	-42%	0.82	1.17	-0.35	-0.08%
107	Canara Robeco Eq. Tax Saver Fund	10	0.14%	464.61	275.82	188.79	41%	0.67	0.40	0.27	0.06%
108	Kotak Tax Saver Scheme	10	0.14%	454.85	522.01	-67.16	-15%	0.65	0.74	-0.10	-0.02%

Eq. – Equity, LT – Long Term, Adv. – Advantage, US – Unit Scheme

S No	Thematic Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
109	A. Birla SL MNC Fund	39	0.57%	611.58	271.94	339.64	55.5%	3.49	1.55	1.94	0.32%
110	SBI Magnum Global Fund	38	0.55%	602.20	546.51	55.69	9.2%	3.34	3.03	0.31	0.05%
111	ICICI Pru. BFS Fund	34	0.50%	44.93	290.30	-245.36	-546.1%	0.22	1.45	-1.22	-2.72%
112	Nippon India BFS Fund	30	0.43%	43.25	282.67	-239.42	-553.5%	0.18	1.21	-1.02	-2.36%
113	Nippon India Pharma Fund	24	0.35%	328.00	426.67	-98.67	-30.1%	1.15	1.50	-0.35	-0.11%
114	UTI MNC Fund	23	0.33%	602.20	561.82	40.38	6.7%	2.00	1.86	0.13	0.02%
115	Sundaram Rural & Consumption Fund	22	0.31%	1,451.37	1,254.31	197.06	13.6%	4.52	3.91	0.61	0.04%
116	ICICI Pru. India Opp. Fund	21	0.30%	454.94	746.98	-292.03	-64.2%	1.38	2.27	-0.89	-0.20%
117	Aditya Birla SL BFS Fund	19	0.27%	43.25	217.24	-173.99	-402.2%	0.12	0.59	-0.48	-1.10%
118	L&T Infrastructure Fund	18	0.26%	629.38	645.86	-16.49	-2.6%	1.63	1.67	-0.04	-0.01%
119	Tata India Consumer Fund	14	0.21%	804.56	901.72	-97.15	-12.1%	1.68	1.89	-0.20	-0.03%
120	ICICI Pru. (P.H.D) Fund	13	0.19%	320.15	362.19	-42.04	-13.1%	0.62	0.70	-0.08	-0.03%
121	Nippon India Power & Infra. Fund	13	0.19%	629.44	591.36	38.08	6.1%	1.20	1.13	0.07	0.01%
122	UTI Infrastructure Fund	13	0.19%	629.24	506.61	122.63	19.5%	1.17	0.94	0.23	0.04%
123	A. Birla SL India GenNext Fund	13	0.18%	793.16	542.17	250.98	31.6%	1.46	1.00	0.46	0.06%

BFS – Banking and Financial Services, Infra. – Infrastructure, ICICI Pru. – ICICI Prudential, FC – Flexicap

S No	Thematic Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
124	Franklin Build India Fund	13	0.18%	629.41	579.36	50.05	8.0%	1.15	1.06	0.09	0.01%
125	Sundaram Services Fund	12	0.18%	1,320.83	1,359.30	-38.46	-2.9%	2.39	2.46	-0.07	-0.01%
126	SBI BFS Fund	12	0.17%	45.47	199.25	-153.78	-338.2%	0.08	0.34	-0.27	-0.58%
127	ICICI Prudential Infra. Fund	11	0.16%	629.24	721.39	-92.14	-14.6%	1.02	1.17	-0.15	-0.02%
128	DSP TIGER Fund	11	0.16%	442.33	421.74	20.59	4.7%	0.70	0.66	0.03	0.01%
129	SBI Healthcare Opportunities Fund	9	0.14%	319.38	263.68	55.70	17.4%	0.43	0.36	0.08	0.02%
130	Mirae Asset Great Consumer Fund	9	0.13%	784.07	814.11	-30.04	-3.8%	1.06	1.10	-0.04	-0.01%
	All Categories Total/Average	6,915	100%	545.27	594.90	-49.64	-26.1%	507.09	539.88	-32.80	-15.4%

4.2.1.3. *Local Bias of each Mutual Fund Scheme in 2021 (Total Portfolio)*

As already explained, the summary of local bias (LB) presented in Tables 4.1 and Table 4.2 above has been arrived at by first calculating the weighted average distance (WAD – Benchmark) of the benchmark and the weighted average distance (WAD – Portfolio) of the portfolio of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme.

The LB measure is presented in two ways. LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the overall LB for all schemes considered for this study in a particular year and LB-Value weight means each mutual fund scheme is given weightage according to the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study in a particular year. Table 4.5 gives the LB of the total portfolio of each mutual fund scheme in 2021 which has been arrived at by the above calculation. To calculate the LB of each MF, the weighted average distance (WAD) of the benchmark and the weighted average distance (WAD) of the portfolio of each mutual fund scheme in October 2021 are calculated which is given in Annexure B and Annexure E respectively. The LB of a total of 177 mutual fund schemes are given below which constitutes 92% of the total AUM of equity MF in October 2021. Out of these 177 schemes, as many as 20 schemes invested in foreign stocks (shown in italics). In 2021, Flexi-cap funds are shown as a separate category. Also, the composition of Multicap funds was changed in September 2020 which appears as a separate category.

Table 4.5 - Local Bias of each Mutual Fund Scheme in 2021 (Total Portfolio)

S No	Large-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Axis BC Fund	340	2.85%	393.56	336.89	56.67	14%	11.24	9.62	1.62	0.41%
2	SBI BC Fund	320	2.69%	392.03	533.55	-141.52	-36%	10.55	14.36	-3.81	-0.97%
3	<i>ICICI Pru. BC Fund</i>	311	2.61%	392.06	471.61	-79.55	-20%	10.24	12.32	-2.08	-0.53%
4	Mirae Asset Large Cap Fund	308	2.59%	392.19	512.53	-120.34	-31%	10.15	13.27	-3.12	-0.79%
5	Aditya Birla SL FL Fund	225	1.89%	393.95	446.85	-52.90	-13%	7.44	8.44	-1.00	-0.25%
6	HDFC Top 100 Fund	216	1.82%	399.11	465.78	-66.67	-17%	7.24	8.45	-1.21	-0.30%
7	Nippon India Large Cap Fund	113	0.95%	393.95	542.75	-148.80	-38%	3.73	5.15	-1.41	-0.36%
8	UTI Mastershare Unit Scheme	97	0.82%	392.03	440.96	-48.94	-12%	3.20	3.60	-0.40	-0.10%
9	Franklin India BC Fund	68	0.58%	393.75	475.21	-81.46	-21%	2.27	2.74	-0.47	-0.12%
10	Canara Robeco BC Eq. Fund	51	0.43%	400.70	312.96	87.74	22%	1.71	1.33	0.37	0.09%
11	Kotak Bluechip Fund	35	0.29%	392.03	435.03	-43.00	-11%	1.14	1.26	-0.12	-0.03%
12	DSP Top 100 Equity Fund	29	0.24%	399.93	526.62	-126.69	-32%	0.97	1.28	-0.31	-0.08%
13	BNP Paribas Large Cap Fund	13	0.11%	392.03	311.05	80.97	21%	0.42	0.33	0.09	0.02%
14	Tata Large Cap Fund	11	0.09%	400.76	265.70	135.06	34%	0.37	0.25	0.13	0.03%
15	IDFC Large Cap	10	0.08%	393.55	319.04	74.52	19%	0.32	0.26	0.06	0.02%

AUM – Assets under Management (Rs. in Bn), Wt.- Weight, WAD – Weighted Average Distance, LB – Local Bias, B'Mark – Benchmark, BC – Bluechip, Diff. – Difference, Eq. – Equity, ICICI Pru. – ICICI Prudential

This table gives the LB of the total portfolio of each MF scheme in 2021 based on which the LB summary for 2021 is given in Tables 4.1 and 4.2.

Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

S No	Large Midcap Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
16	Mirae Asset Emr. BC Fund	216	1.82%	536.74	522.44	14.30	3%	9.76	9.50	0.26	0.05%
17	Canara Robeco Emg. Eq.	118	0.99%	550.70	444.72	105.99	19%	5.45	4.40	1.05	0.19%
18	Kotak Equity Opp. Fund	82	0.69%	536.92	597.31	-60.39	-11%	3.70	4.12	-0.42	-0.08%
19	DSP Equity Opp. Fund	70	0.59%	549.88	581.21	-31.33	-6%	3.22	3.40	-0.18	-0.03%
20	A Birla SL Eq. Adv. Fund	62	0.52%	541.56	548.84	-7.28	-1%	2.82	2.86	-0.04	-0.01%
21	SBI Large & Midcap Fund	54	0.45%	536.92	685.52	-148.61	-28%	2.42	3.09	-0.67	-0.12%
22	Axis Growth Opp. Fund	50	0.42%	541.02	3,304.22	-2,763.20	-511%	2.28	13.90	-11.63	-2.15%
23	Invesco India Gr. Opp. Fund	42	0.35%	542.19	399.22	142.97	26%	1.92	1.42	0.51	0.09%
24	ICICI Pru. Large & MC Fund	37	0.31%	537.26	728.63	-191.37	-36%	1.66	2.25	-0.59	-0.11%
25	HDFC Large and MC Fund	35	0.29%	548.98	506.04	42.94	8%	1.61	1.49	0.13	0.02%
26	Nippon India Vision Fund	33	0.28%	541.56	508.44	33.12	6%	1.50	1.41	0.09	0.02%
27	Franklin India Eq. Adv. Fund	29	0.25%	541.11	500.34	40.77	8%	1.34	1.24	0.10	0.02%
28	Tata Large & MC Fund	27	0.23%	550.73	456.49	94.24	17%	1.25	1.04	0.21	0.04%
29	IDFC Core Equity Fund	24	0.20%	540.98	409.96	131.02	24%	1.10	0.83	0.27	0.05%
30	Sundaram Large MC Fund	18	0.16%	1,320.14	1,213.47	106.67	8%	2.05	1.88	0.17	0.01%
31	LIC MF Large & MC Fund	15	0.13%	548.98	506.77	42.21	8%	0.69	0.64	0.05	0.01%
32	L&T Large and MC Fund	15	0.12%	541.10	609.07	-67.97	-13%	0.67	0.75	-0.08	-0.02%
33	UTI Core Eq. Fund	12	0.10%	536.93	576.79	-39.86	-7%	0.55	0.59	-0.04	-0.01%

Opp. – Opportunities, MC – Midcap, Eq. – Equity, Adv. – Advantage, Gr. – Growth, Emg. – Emerging, BC – Bluechip, A Birla – Aditya Birla

S No	Midcap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
34	HDFC MC Opp. Fund	316	2.66%	699.01	716.70	-18	-3%	18.58	19.05	-0.47	-0.07%
35	Kotak Emerging Equity	165	1.39%	681.98	701.14	-19	-3%	9.45	9.71	-0.27	-0.04%
36	Axis MC Fund	160	1.34%	688.64	547.63	141	20%	9.25	7.36	1.89	0.28%
37	DSP MC Fund	142	1.19%	699.99	754.91	-55	-8%	8.35	9.00	-0.65	-0.09%
38	Nippon India Growth Fund	119	1.00%	681.98	766.60	-85	-12%	6.83	7.68	-0.85	-0.12%
39	Franklin India Prima Fund	81	0.68%	688.65	654.65	34	5%	4.68	4.45	0.23	0.03%
40	Mirae Asset MC Fund	67	0.57%	681.47	757.35	-76	-11%	3.86	4.29	-0.43	-0.06%
41	L&T MC Fund	69	0.58%	688.63	647.40	41	6%	4.00	3.76	0.24	0.03%
42	UTI MC Fund	67	0.56%	681.99	788.44	-106	-16%	3.84	4.44	-0.60	-0.09%
43	SBI Magnum MC Fund	64	0.54%	681.98	798.78	-117	-17%	3.68	4.31	-0.63	-0.09%
44	PGIM India MC Opp. Fund	34	0.28%	681.98	705.97	-24	-4%	1.94	2.01	-0.07	-0.01%
45	Aditya Birla Sun Life MC Fund	34	0.28%	689.35	706.02	-17	-2%	1.96	2.01	-0.05	-0.01%
46	ICICI Prudential MC Fund	32	0.27%	682.63	708.00	-25	-4%	1.82	1.89	-0.07	-0.01%
47	Motilal Oswal MC 30 Fund	24	0.20%	689.35	589.07	100	15%	1.40	1.20	0.20	0.03%
48	Invesco India MC Fund	21	0.17%	690.18	619.08	71	10%	1.20	1.07	0.12	0.02%
49	Edelweiss MC Fund	17	0.15%	681.43	740.04	-59	-9%	1.00	1.09	-0.09	-0.01%
50	Tata MC Growth Fund	15	0.12%	700.88	705.25	-4	-1%	0.86	0.87	-0.01	0.00%
51	HSBC MC Fund	13	0.11%	702.40	484.93	217	31%	0.77	0.53	0.24	0.03%
52	BNP Paribas MC Fund	11	0.09%	681.98	677.83	4	1%	0.62	0.62	0.00	0.00%
53	Sundaram MC Fund	69	0.58%	1,308.69	1,147.47	161	12%	7.61	6.67	0.94	0.07%

Opp. – Opportunities, MC – Midcap

S No	Small-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
54	Nippon India Small Cap Fund	172	1.45%	698.93	689.72	9.21	1%	10.10	9.97	0.13	0.02%
55	HDFC Small Cap Fund	132	1.11%	708.77	714.22	-5.45	-1%	7.85	7.91	-0.06	-0.01%
56	DSP Small Cap Fund	83	0.70%	709.75	803.42	-93.66	-13%	4.93	5.58	-0.65	-0.09%
57	Axis Small Cap Fund	74	0.62%	698.17	699.83	-1.66	0%	4.32	4.33	-0.01	0.00%
58	L&T Emerging Businesses Fund	76	0.63%	698.16	869.41	-171.25	-25%	4.43	5.52	-1.09	-0.16%
59	Franklin India Smaller Co. Fund	72	0.61%	698.17	643.04	55.14	8%	4.24	3.91	0.34	0.05%
60	Kotak Small Cap Fund	62	0.52%	692.07	822.80	-130.72	-19%	3.59	4.27	-0.68	-0.10%
61	ICICI Prudential Smallcap Fund	33	0.28%	692.66	612.84	79.82	12%	1.92	1.70	0.22	0.03%
62	Aditya Birla SL Small cap Fund	30	0.25%	698.93	707.68	-8.75	-1%	1.74	1.77	-0.02	0.00%
63	UTI Small Cap Fund	18	0.15%	692.07	701.18	-9.10	-1%	1.05	1.07	-0.01	0.00%
64	Tata Small Cap Fund	17	0.14%	710.66	726.03	-15.38	-2%	1.03	1.05	-0.02	0.00%
65	Canara Robeco Small Cap Fund	16	0.14%	710.65	671.40	39.25	6%	0.97	0.92	0.05	0.01%
66	IDFC Emerging Businesses Fund	14	0.12%	698.10	706.17	-8.06	-1%	0.84	0.85	-0.01	0.00%
67	PGIM India Small Cap Fund	12	0.10%	692.07	791.80	-99.72	-14%	0.71	0.81	-0.10	-0.01%
68	Quant Small Cap Fund	12	0.10%	697.46	762.75	-65.29	-9%	0.73	0.80	-0.07	-0.01%
69	Invesco Smallcap Fund	12	0.10%	699.78	867.37	-167.58	-24%	0.72	0.89	-0.17	-0.02%
70	Edelweiss Smallcap Fund	11	0.09%	691.53	792.13	-100.60	-15%	0.61	0.70	-0.09	-0.01%

S No	Flexi-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
71	Kotak Flexi Cap Fund	385	3.24%	456.00	512.23	-56.24	-12%	14.76	16.58	-1.82	-0.40%
72	HDFC Flexi Cap Fund	271	2.28%	465.23	592.08	-126.85	-27%	10.60	13.49	-2.89	-0.62%
73	UTI Flexi Cap Fund	242	2.04%	456.00	631.08	-175.08	-38%	9.28	12.84	-3.56	-0.78%
74	<i>Parag Parikh Flexi Cap Fund</i>	172	1.45%	474.02	4,483.35	-4,009.33	-846%	6.86	64.89	-58.03	-12.24%
75	Aditya Birla SL Flexi Cap Fund	162	1.36%	459.07	525.37	-66.30	-14%	6.24	7.14	-0.90	-0.20%
76	<i>SBI Flexi Cap Fund</i>	155	1.30%	456.00	1,077.17	-621.17	-136%	5.93	14.00	-8.07	-1.77%
77	ICICI Prudential Flexicap Fund	115	0.97%	456.16	386.36	69.80	15%	4.41	3.73	0.67	0.15%
78	Axis Flexi Cap Fund	110	0.92%	458.61	442.65	15.96	3%	4.23	4.08	0.15	0.03%
79	Motilal Oswal Flexi Cap Fund	115	0.97%	459.07	514.68	-55.61	-12%	4.44	4.98	-0.54	-0.12%
80	Franklin India Flexi Cap Fund	104	0.87%	458.76	397.82	60.93	13%	4.01	3.48	0.53	0.12%
81	DSP Flexi Cap Fund	73	0.62%	466.08	546.85	-80.77	-17%	2.88	3.38	-0.50	-0.11%
82	Canara Robeco Flexi Cap Fund	61	0.52%	466.88	397.11	69.77	15%	2.41	2.05	0.36	0.08%
83	IDFC Flexi Cap Fund	60	0.51%	458.59	389.88	68.71	15%	2.32	1.97	0.35	0.08%
84	Nippon India Flexi Cap Fund	34	0.28%	459.07	497.67	-38.60	-8%	1.30	1.41	-0.11	-0.02%
85	L&T Flexi Cap Fund	30	0.25%	458.75	500.44	-41.69	-9%	1.16	1.27	-0.11	-0.02%

S No	Focused Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
86	SBI Focused Equity Fund	217	1.82%	456.00	2,484.05	-2,028.05	-445%	8.31	45.26	-36.95	-8.10%
87	Axis Focused 25 Fund	204	1.72%	458.61	381.66	76.95	17%	7.87	6.55	1.32	0.29%
88	Mirae Asset-Focused Fund	80	0.67%	456.03	626.05	-170.03	-37%	3.05	4.18	-1.14	-0.25%
89	Franklin India Focused Equity Fund	79	0.67%	458.76	525.22	-66.47	-14%	3.06	3.50	-0.44	-0.10%
90	Nippon India Focused Equity Fund	59	0.50%	459.07	529.26	-70.18	-15%	2.27	2.62	-0.35	-0.08%
91	Aditya Birla SL Focused Eq. Fund	54	0.45%	459.07	355.42	103.65	23%	2.08	1.61	0.47	0.10%
92	UTI Focused Equity Fund	28	0.24%	456.00	474.55	-18.55	-4%	1.09	1.13	-0.04	-0.01%
93	IIFL Focused Equity Fund	25	0.21%	459.07	469.96	-10.88	-2%	0.96	0.98	-0.02	0.00%
94	ICICI Prudential Focused Eq. Fund	24	0.20%	456.16	488.60	-32.44	-7%	0.91	0.97	-0.06	-0.01%
95	Kotak Focused Equity Fund	22	0.19%	456.00	576.21	-120.21	-26%	0.86	1.08	-0.23	-0.05%
96	DSP Focus Fund - Regular Plan	21	0.18%	466.08	564.49	-98.41	-21%	0.84	1.01	-0.18	-0.04%
97	Motilal Oswal Focused 25 Fund	18	0.15%	459.07	443.09	15.98	3%	0.71	0.68	0.02	0.01%
98	Invesco India Focused 20 Eq. Fund	14	0.12%	459.58	369.26	90.32	20%	0.55	0.45	0.11	0.02%
99	IDFC Focused Equity Fund	14	0.12%	458.59	360.17	98.42	21%	0.55	0.44	0.12	0.03%
100	Sundaram Select Focus	14	0.12%	1,326.11	1,282.55	43.55	3%	1.56	1.51	0.05	0.00%
101	Canara Robeco Focused Eq.Fund	12	0.10%	466.88	368.66	98.21	21%	0.48	0.38	0.10	0.02%

Eq. – Equity

S No	Value + Contra Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
102	ICICI Prudential Value Dis. Fund	226	1.90%	456.16	1,320.37	-864.21	-189%	8.65	25.03	-16.39	-3.59%
103	L&T India Value Fund	80	0.67%	458.75	574.66	-115.91	-25%	3.09	3.87	-0.78	-0.17%
104	UTI Value Opportunities Fund	67	0.56%	456.00	542.23	-86.23	-19%	2.55	3.04	-0.48	-0.11%
105	HDFC Capital Builder Value Fund	54	0.46%	465.23	479.34	-14.11	-3%	2.12	2.19	-0.06	-0.01%
106	Tata Equity PE Fund	52	0.43%	466.92	526.94	-60.02	-13%	2.03	2.29	-0.26	-0.06%
107	Nippon India Value Fund	44	0.37%	459.07	571.34	-112.27	-24%	1.69	2.10	-0.41	-0.09%
108	IDFC Sterling Value Fund	42	0.35%	458.59	584.17	-125.58	-27%	1.62	2.07	-0.44	-0.10%
109	Aditya Birla SL Pure Value Fund	46	0.39%	459.07	513.32	-54.24	-12%	1.78	2.00	-0.21	-0.05%
110	Invesco India Contra Fund	85	0.71%	459.58	474.06	-14.48	-3%	3.27	3.37	-0.10	-0.02%
111	SBI Contra Fund	31	0.26%	456.00	1,312.05	-856.05	-188%	1.19	3.43	-2.24	-0.49%

Dis. – Discovery

S No	Multicap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
112	Nippon India MC Fund	110	0.92%	459.07	695.69	-236.62	-52%	4.23	6.41	-2.18	-0.48%
113	ICICI Prudential MC Fund	66	0.55%	456.16	601.58	-145.42	-32%	2.52	3.33	-0.80	-0.18%
114	Kotak Multicap Fund	36	0.30%	456.00	598.19	-142.19	-31%	1.38	1.82	-0.43	-0.09%
115	Aditya Birla SL MC Fund	32	0.27%	459.07	632.98	-173.91	-38%	1.22	1.68	-0.46	-0.10%
116	Invesco India MC Fund	17	0.14%	459.58	597.46	-137.87	-30%	0.67	0.86	-0.20	-0.04%
117	Quant Active Fund	13	0.11%	458.28	569.43	-111.15	-24%	0.50	0.62	-0.12	-0.03%
118	Baroda MC Fund	12	0.10%	474.02	483.75	-9.73	-2%	0.47	0.48	-0.01	0.00%

MC – Multicap

S No	ELSS Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
119	Axis Long-Term Equity Fund	342	2.88%	458.61	574.30	-115.69	-25%	13.20	16.53	-3.33	-0.73%
120	Aditya Birla Sun Life Tax Relief 96	146	1.23%	459.07	297.98	161.09	35%	5.65	3.67	1.98	0.43%
121	Nippon India Tax Saver Fund	124	1.05%	459.07	456.88	2.20	0%	4.80	4.78	0.02	0.01%
122	SBI Long-Term Equity Fund	111	0.93%	456.00	396.14	59.86	13%	4.25	3.69	0.56	0.12%
123	Mirae Asset Tax Saver Fund	101	0.85%	456.03	512.19	-56.17	-12%	3.89	4.37	-0.48	-0.11%
124	ICICI Prudential LT Equity Fund	101	0.85%	456.16	492.45	-36.29	-8%	3.88	4.19	-0.31	-0.07%
125	DSP Tax Saver Fund	98	0.82%	466.08	593.07	-126.99	-27%	3.84	4.89	-1.05	-0.22%
126	HDFC Tax Saver Fund	94	0.79%	465.23	482.98	-17.76	-4%	3.69	3.84	-0.14	-0.03%
127	Franklin India Taxshield Fund	51	0.43%	458.76	441.54	17.21	4%	1.97	1.90	0.07	0.02%
128	L&T Tax Advantage Fund	35	0.30%	458.75	542.53	-83.78	-18%	1.36	1.61	-0.25	-0.05%
129	IDFC Tax Advantage (ELSS) Fund	35	0.30%	458.59	455.56	3.03	1%	1.36	1.35	0.01	0.00%
130	UTI Long-Term Equity Fund	30	0.26%	456.00	556.73	-100.73	-22%	1.17	1.43	-0.26	-0.06%
131	Tata India Tax Savings Fund	30	0.25%	466.92	454.92	12.00	3%	1.18	1.15	0.03	0.01%
132	Canara Robeco Equity Tax Saver	29	0.24%	466.88	414.63	52.25	11%	1.14	1.01	0.13	0.03%
133	UTI Master Eq. Plan Unit Scheme	25	0.21%	456.00	357.77	98.23	22%	0.95	0.75	0.20	0.04%
134	Kotak Tax Saver Scheme	23	0.20%	456.00	499.03	-43.03	-9%	0.89	0.97	-0.08	-0.02%
135	Motilal Oswal LT Equity Fund	24	0.20%	459.07	610.15	-151.08	-33%	0.91	1.21	-0.30	-0.07%
136	Sundaram Diversified Equity	22	0.18%	1,326.11	1,288.66	37.44	3%	2.43	2.36	0.07	0.01%
137	Invesco India Tax Plan	19	0.16%	459.58	451.49	8.09	2%	0.73	0.72	0.01	0.00%

LT – Long Term, Eq. – Equity

S No	Thematic Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
138	ICICI Pru. Technology Fund	69	0.58%	645.84	1,782.40	-1,136.56	-176.0%	3.73	10.29	-6.56	-1.02%
139	ICICI Pru. Business Cycle Fund	61	0.51%	456.16	1,230.60	-774.44	-169.8%	2.35	6.33	-3.99	-0.87%
140	SBI Magnum Global Fund	54	0.45%	654.85	2,147.74	-1,492.89	-228.0%	2.97	9.73	-6.76	-1.03%
141	Nippon India Pharma Fund	52	0.44%	486.19	463.54	22.65	4.7%	2.13	2.03	0.10	0.02%
142	ICICI Pru BFS Fund	52	0.44%	54.34	226.84	-172.50	-317.4%	0.24	1.00	-0.76	-1.40%
143	SBI Magnum Equity ESG Fund	45	0.38%	335.24	1,048.05	-712.81	-212.6%	1.28	3.99	-2.71	-0.81%
144	Tata Digital India Fund	38	0.32%	656.32	1,102.35	-446.02	-68.0%	2.12	3.56	-1.44	-0.22%
145	ICICI Pru. India Opp. Fund	42	0.35%	456.16	772.69	-316.53	-69.4%	1.60	2.72	-1.11	-0.24%
146	Aditya Birla Sun Life MNC Fund	39	0.33%	664.42	381.62	282.80	42.6%	2.19	1.26	0.93	0.14%
147	Nippon India BFS Fund	33	0.28%	53.70	339.64	-285.94	-532.5%	0.15	0.94	-0.79	-1.47%
148	ICICI Pru Pharma (P.H.D) Fund	30	0.26%	478.55	262.27	216.28	45.2%	1.22	0.67	0.55	0.12%
149	SBI BFS Fund	31	0.26%	54.84	263.75	-208.91	-381.0%	0.14	0.69	-0.55	-0.99%
150	Aditya Birla SL Digital India Fund	27	0.22%	649.88	1,190.60	-540.73	-83.2%	1.45	2.66	-1.21	-0.19%
151	Axis Special Situations Fund	26	0.22%	458.61	3,145.53	-2,686.92	-585.9%	1.01	6.94	-5.93	-1.29%
152	Aditya Birla SL India GenNext Fund	25	0.21%	823.27	528.90	294.38	35.8%	1.76	1.13	0.63	0.08%
153	UTI MNC Fund	26	0.22%	654.85	554.57	100.28	15.3%	1.44	1.22	0.22	0.03%
154	HDFC BFS Fund	23	0.19%	59.47	155.20	-95.73	-161.0%	0.11	0.30	-0.18	-0.31%
155	Axis ESG Equity Fund	22	0.18%	335.98	2,981.64	-2,645.66	-787.4%	0.61	5.45	-4.84	-1.44%
156	Aditya Birla SL BFS Fund	22	0.19%	53.70	174.89	-121.19	-225.7%	0.10	0.33	-0.23	-0.42%
157	SBI Technology Opp. Fund	19	0.16%	645.43	3,529.34	-2,883.91	-446.8%	1.03	5.61	-4.58	-0.71%
158	SBI Healthcare Opp. Fund	19	0.16%	477.82	495.88	-18.06	-3.8%	0.75	0.78	-0.03	-0.01%

S No	Thematic Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
159	Mirae Asset Healthcare Fund	18	0.15%	477.25	485.66	-8.41	-1.8%	0.72	0.73	-0.01	0.00%
160	ICICI Prudential ESG Fund	18	0.15%	335.24	1,356.31	-1,021.07	-304.6%	0.51	2.08	-1.57	-0.47%
161	Kotak ESG Opportunities Fund	18	0.15%	335.98	467.53	-131.56	-39.2%	0.51	0.70	-0.20	-0.06%
162	Nippon India Power & Infra Fund	17	0.14%	604.59	608.38	-3.79	-0.6%	0.85	0.86	-0.01	0.00%
163	Axis Quant Fund	17	0.14%	433.03	409.81	23.22	5.4%	0.61	0.57	0.03	0.01%
164	Mirae Asset Great Consumer Fund	16	0.13%	814.40	814.40	0.00	0.0%	1.08	1.08	0.00	0.00%
165	UTI Infrastructure Fund	15	0.12%	603.77	532.39	71.38	11.8%	0.75	0.66	0.09	0.01%
166	ICICI Prudential Infra. Fund	14	0.12%	603.83	721.30	-117.47	-19.5%	0.73	0.88	-0.14	-0.02%
167	DSP Healthcare Fund	14	0.12%	498.16	1,803.54	-1,305.38	-262.0%	0.59	2.13	-1.54	-0.31%
168	Tata India Consumer Fund	13	0.11%	834.32	881.23	-46.92	-5.6%	0.94	1.00	-0.05	-0.01%
169	L&T Infrastructure Fund	14	0.11%	604.45	548.02	56.43	9.3%	0.69	0.62	0.06	0.01%
170	Aditya Birla Sun Life ESG Fund	12	0.10%	336.27	543.25	-206.98	-61.6%	0.33	0.53	-0.20	-0.06%
171	Franklin Build India Fund	11	0.10%	604.51	622.18	-17.68	-2.9%	0.58	0.59	-0.02	0.00%
172	DSP Quant Fund	12	0.10%	440.02	401.85	38.17	8.7%	0.45	0.41	0.04	0.01%
173	DSP TIGER Fund	13	0.11%	440.02	701.61	-261.59	-59.4%	0.48	0.77	-0.29	-0.07%
174	Baroda Business Cycle Fund	11	0.09%	474.02	397.38	76.64	16.2%	0.45	0.38	0.07	0.02%
175	ICICI MNC Fund	9	0.08%	655.71	2,903.36	-2,247.65	-342.8%	0.52	2.29	-1.77	-0.27%
176	ICICI FMCG Fund	9	0.08%	841.71	2,130.93	-1,289.23	-153.2%	0.64	1.61	-0.98	-0.12%
177	Tata Business Cycle Fund	9	0.08%	466.92	408.74	58.18	12.5%	0.37	0.32	0.05	0.01%
	All Categories Total/Average	11,898	100%	536	729	-193	-48%	509	720	-211	-49%

BFS – Banking and Financial Services, Opp. – Opportunities, ICICI Pru. – ICICI Prudential

4.2.1.4. *Local Bias of Top 10 Stocks of each MF Scheme in 2013*

In the previous three Tables 4.3, 4.4 and 4.5 the LB was calculated for the entire portfolio (Total Portfolio) for each MF scheme i.e. by taking all the stocks in the portfolio and arriving at the LB. However, in Tables 4.6, 4.7 and 4.8, the LB is calculated only for the top 10 stocks in the portfolio. Since the weightage of the top 10 stocks constitutes an average of 46-48% of the overall portfolio, it is important to analyse the LB in the top 10 stocks as well. The actual weightage of the top 10 stocks in a mutual fund portfolio and benchmark portfolio is shown in the first two columns of Tables 4.6, 4.7 and 4.8 given below.

As already explained, the summary of local bias (LB) for the top 10 stocks presented in Table 4.1 above has been arrived at by first calculating the weighted average distance (WAD – Benchmark) of the benchmark and the weighted average distance (WAD – Portfolio) of the top 10 stocks in the portfolio of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio for the top 10 stocks gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark for the top 10 stocks gives the LB for each mutual fund scheme. The LB measure is presented in two ways. LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the overall LB for all schemes considered for this study in a particular year and LB-Value weight means each mutual fund scheme is given weightage according to the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study in a particular year. Table 4.6 gives the LB of the top 10 stocks in the portfolio of each mutual fund scheme in 2013 which has been arrived at by the above calculation. To calculate the LB of each MF, the weighted average distance (WAD) of the benchmark and the weighted average distance (WAD) of the top 10 stocks in the portfolio of each mutual fund scheme in April 2013 have been calculated. This is given in Annexure B and Annexure C respectively.

Table 4.6 - Local Bias of Top 10 Stocks of each MF Scheme in 2013

S No	Large-cap Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Franklin India BC Fund	50%	49%	3.47%	245.84	307.78	-61.94	-25%	8.54	10.69	-2.15	-0.88%
2	ICICI Pru. Focussed BC Fund	50%	49%	3.12%	246.33	220.39	25.94	11%	7.68	6.87	0.81	0.33%
3	Aditya Birla Sun Life Frontline Equity Fund	35%	49%	2.27%	245.90	178.02	67.88	28%	5.59	4.05	1.54	0.63%
4	DSP Top 100 Equity Fund	52%	49%	2.38%	247.34	204.18	43.16	17%	5.88	4.86	1.03	0.41%
5	UTI MS Unit Scheme	49%	49%	1.63%	246.50	228.71	17.79	7%	4.01	3.72	0.29	0.12%
6	Reliance Equity Fund	49%	49%	0.71%	245.90	217.06	28.84	12%	1.74	1.54	0.20	0.08%
7	Kotak Mahindra 50 Unit Scheme	50%	49%	0.53%	246.50	335.37	-88.86	-36%	1.29	1.76	-0.47	-0.19%
8	SBI BC Fund	47%	49%	0.52%	247.39	299.44	-52.05	-21%	1.28	1.55	-0.27	-0.11%
9	Axis Equity Fund	53%	49%	0.39%	245.84	205.62	40.22	16%	0.96	0.81	0.16	0.06%
10	Tata Pure Equity Fund	54%	49%	0.46%	247.83	336.44	-88.62	-36%	1.14	1.55	-0.41	-0.16%
11	Birla SL Top 100 Fund	37%	49%	0.22%	245.90	200.28	45.61	19%	0.54	0.44	0.10	0.04%
12	IDFC Equity Fund	64%	49%	0.22%	245.84	383.92	-138.09	-56%	0.55	0.86	-0.31	-0.13%
13	SBI Magnum Equity Fund	60%	49%	0.74%	247.39	220.89	26.51	11%	1.82	1.62	0.19	0.08%
14	DSP TIGER Fund	38%	49%	0.90%	247.34	78.60	168.74	68%	2.22	0.71	1.52	0.61%
15	Sundaram Select Focus	51%	49%	0.39%	652.37	670.70	-18.33	-3%	2.52	2.60	-0.07	-0.01%
16	UTI Top 100 Fund	50%	49%	0.42%	247	186	60.72	25%	1.05	0.79	0.26	0.10%

AUM – Assets under Management (Rs. in Bn), Wt.- Weight, WAD – Weighted Average Distance, Diff. – Difference, LB – Local Bias, B'Mark – Benchmark, BC – Bluechip, MS – Mastershare

This table gives the LB of the top 10 stocks of each MF scheme in 2013 based on which the LB summary for 2013 is given in Table 4.1.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

S No	Large Midcap Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
17	HDFC Top 200 Fund	46%	44%	8.25%	223.47	198.13	25.34	11%	18.43	16.34	2.09	0.94%
18	Franklin Ind. FC Fund or Franklin Ind. Eq. Adv. Fund	59%	44%	1.09%	222.55	455.61	-233.06	-105%	2.43	4.97	-2.54	-1.14%
19	Reliance Vision Fund	50%	44%	1.16%	222.60	286.32	-63.72	-29%	2.58	3.32	-0.74	-0.33%
20	SBI Magnum Multiplier Plus Scheme 93	48%	44%	0.73%	225.07	116.27	108.80	48%	1.65	0.85	0.80	0.35%
21	UTI - Master Plus Unit Scheme – BC FC Fund	50%	44%	0.62%	223.15	195.60	27.55	12%	1.38	1.21	0.17	0.08%
22	Reliance Top 200 Fund	43%	44%	0.55%	222.60	279.38	-56.78	-26%	1.22	1.53	-0.31	-0.14%
23	Kotak Opportunities Fund	41%	44%	0.45%	223.15	46.50	176.65	79%	1.00	0.21	0.79	0.36%
24	ICICI Top 200 Fund	49%	44%	0.33%	223.00	207.19	15.80	7%	0.73	0.68	0.05	0.02%
25	DSP Blackrock Opp. Fund	36%	44%	0.35%	223.91	151.17	72.74	32%	0.79	0.53	0.26	0.11%
26	Tata Equity Opp. Fund	50%	44%	0.33%	224.35	266.99	-42.64	-19%	0.75	0.89	-0.14	-0.06%
27	UTI Leadership Fund or UTI BC FC Fund	53%	44%	0.41%	223.15	157.20	65.95	30%	0.92	0.65	0.27	0.12%

FC – Flexicap, BC – Bluechip, Opp. – Opportunities

S No	Midcap & Small-cap Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
28	Reliance Growth Fund	42%	20%	3.32%	88.30	214.16	-125.86	-143%	2.93	7.10	-4.18	-4.73%
29	HDFC MC Opp. Fund	27%	20%	1.94%	90.18	93.53	-3.35	-4%	1.75	1.82	-0.07	-0.07%
30	DSP Small & MC Fund	36%	20%	0.75%	90.38	176.62	-86.24	-95%	0.68	1.33	-0.65	-0.72%
31	Birla Sun Life MC Fund	31%	20%	0.78%	88.30	241.51	-153.21	-174%	0.69	1.88	-1.19	-1.35%
32	Franklin India Prima Fund	42%	20%	0.53%	88.13	171.16	-83.03	-94%	0.46	0.90	-0.44	-0.50%
33	UTI - Master Value Fund	31%	20%	0.40%	86.45	80.15	6.31	7%	0.35	0.32	0.03	0.03%
34	DSP Microcap Fund	39%	20%	0.27%	202.71	321.51	-118.80	-59%	0.55	0.88	-0.33	-0.16%
35	Reliance Smallcap Fund	41%	20%	0.23%	200.01	256.97	-56.96	-28%	0.46	0.59	-0.13	-0.07%
36	Franklin India Smaller Co. Fund	46%	20%	0.21%	199.78	225.26	-25.48	-13%	0.41	0.46	-0.05	-0.03%
37	Sundaram SMILE Fund	44%	20%	0.23%	289.08	296.34	-7.27	-3%	0.67	0.68	-0.02	-0.01%
38	Sundaram Select MC Fund	41%	20%	1.31%	258.17	447.84	-189.67	-73%	3.38	5.86	-2.48	-0.96%

Diff. – Difference, MC – Midcap, Opp. – Opportunities

S No	Flexi-cap, Value, Focused, Contra Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
39	HDFC Equity Fund – FC	45%	41%	7.80%	206.53	229.44	-22.90	-11%	16.12	17.91	-1.79	-0.87%
40	Reliance Equal Opp. Fund - MC	40%	41%	3.60%	205.73	136.30	69.43	34%	7.40	4.91	2.50	1.21%
41	UTI Opp. Fund - VF	44%	41%	2.54%	206.24	159.25	46.99	23%	5.25	4.05	1.20	0.58%
42	IDFC Premier Equity Fund – FC	40%	41%	2.38%	205.68	240.34	-34.66	-17%	4.89	5.72	-0.82	-0.40%
43	ICICI Prudential Dis. Fund - VF	29%	41%	1.90%	206.10	261.78	-55.68	-27%	3.92	4.98	-1.06	-0.51%
44	Reliance Regular Savings Fund - VF	39%	41%	1.78%	205.73	261.74	-56.00	-27%	3.66	4.66	-1.00	-0.48%
45	DSP Blackrock Eq. Fund - FC	40%	41%	1.58%	206.94	87.80	119.14	58%	3.27	1.39	1.88	0.91%
46	UTI Equity Fund - FC Fund	42%	41%	1.62%	206.24	201.48	4.76	2%	3.33	3.26	0.08	0.04%
47	SBI Contra Fund	47%	41%	1.39%	210.00	166.78	43.21	21%	2.91	2.31	0.60	0.29%
48	IDFC Sterling Value Fund - VF	37%	41%	0.96%	205.68	281.65	-75.97	-37%	1.98	2.72	-0.73	-0.36%
49	Reliance LT Equity Fund - FF	41%	41%	0.60%	205.73	215.13	-9.40	-5%	1.24	1.29	-0.06	-0.03%
50	Birla Sun Life Equity Fund - FC	37%	41%	0.48%	205.73	187.10	18.63	9%	0.98	0.89	0.09	0.04%
51	Canara Robeco Eq. Div.- FC	42%	41%	0.47%	207.35	205.62	1.73	1%	0.97	0.97	0.01	0.00%
52	Templeton India Gr. Fund - VF	74%	41%	0.43%	205.68	342.68	-137.00	-67%	0.89	1.48	-0.59	-0.29%
53	Franklin India High Gr. Co. Fund – FF	46%	41%	0.37%	205.68	306.64	-100.96	-49%	0.77	1.14	-0.38	-0.18%
54	HDFC Capital Builder Fund - VF	49%	41%	0.31%	206.53	255.20	-48.67	-24%	0.63	0.78	-0.15	-0.07%
55	HDFC Long Term Eq. Fund - FF	60%	41%	0.30%	206.53	328.63	-122.09	-59%	0.63	1.00	-0.37	-0.18%
56	SBI Magnum MC Fund - MC	45%	41%	0.24%	210.00	169.43	40.56	19%	0.50	0.41	0.10	0.05%

FC – Flexicap, MC – Multicap, VF – Value Fund, FF – Focussed Fund, Eq. – Equity, Opp. – Opportunities, LT - Long Term, Gr. – Growth

S No	Flexi-cap, Value, Focused, Contra Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
57	DSP Focus 25 Fund – FF	65%	41%	0.21%	206.94	398.94	-192.00	-93%	0.44	0.84	-0.41	-0.20%
58	Kotak Select Focus Fund	39%	41%	0.24%	206.24	98.15	108.09	52%	0.49	0.23	0.26	0.12%
59	Tata Equity P/E Fund	40%	41%	0.32%	207.35	300.46	-93.11	-45%	0.66	0.96	-0.30	-0.14%
60	SBI Emerging Business Fund - SBI Focused Eq. Fund	60%	41%	0.87%	210.00	502.84	-292.84	-139%	1.83	4.39	-2.56	-1.22%
61	UTI - Dividend Yield Fund	42%	41%	2.40%	206.24	222.96	-16.72	-8%	4.94	5.34	-0.40	-0.19%
62	Birla Sun Life Equity Fund - FC	33%	41%	0.88%	205.73	266.60	-60.87	-30%	1.81	2.34	-0.53	-0.26%
63	<i>Templeton India Equity Income Fund</i>	61%	41%	0.66%	205.68	372.43	-166.75	-81%	1.35	2.44	-1.09	-0.53%
64	UTI India Lifestyle Fund	61%	44%	0.24%	537.21	441.12	96.09	18%	1.28	1.05	0.23	0.04%

S No	ELSS Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
65	SBI Magnum Tax Gain Scheme	47%	41%	2.87%	210.00	192.14	17.86	9%	6.02	5.51	0.51	0.24%
66	HDFC Tax Saver Fund	47%	41%	2.36%	206.53	163.05	43.48	21%	4.88	3.85	1.03	0.50%
67	Reliance Tax Saver ELSS Fund	43%	41%	1.41%	205.73	293.24	-87.50	-43%	2.90	4.13	-1.23	-0.60%
68	ICICI Prudential Tax Plan	44%	41%	1.01%	206.10	136.22	69.87	34%	2.09	1.38	0.71	0.34%
69	Birla SL Tax Relief 96	36%	41%	1.00%	205.73	156.78	48.95	24%	2.06	1.57	0.49	0.24%
70	UTI-Master Eq. Plan US	49%	41%	0.88%	206.24	198.29	7.95	4%	1.81	1.74	0.07	0.03%
71	Sundaram Tax Saver Fund	41%	41%	0.92%	545.81	516.21	29.60	5%	5.02	4.74	0.27	0.05%
72	Franklin India Taxshield	45%	41%	0.64%	205.68	238.61	-32.93	-16%	1.32	1.53	-0.21	-0.10%
73	HDFC LT Adv. Fund	52%	41%	0.58%	206.53	226.07	-19.54	-9%	1.20	1.32	-0.11	-0.06%
74	DSP Tax Saver Fund	34%	41%	0.52%	206.94	166.48	40.46	20%	1.07	0.86	0.21	0.10%
75	Axis LT Equity Fund	49%	41%	0.41%	205.68	230.81	-25.12	-12%	0.84	0.94	-0.10	-0.05%
76	Canara Robeco Eq. Taxsaver	37%	41%	0.41%	207.35	162.39	44.95	22%	0.84	0.66	0.18	0.09%
77	UTI Eq. Tax Saving Plan	47%	41%	0.32%	206.24	175.26	30.98	15%	0.65	0.56	0.10	0.05%

LT – Long Term, Adv. – Advantage, Eq. – Equity, US - Unit Scheme

S No	Thematic Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
78	UTI Banking Sec. Fund	89.11%	95.26%	0.26%	51.38	116.19	-64.80	-126%	0.14	0.31	-0.17	-0.33%
79	Reliance Banking Fund	75.25%	95.26%	1.27%	48.68	182.38	-133.70	-275%	0.62	2.32	-1.70	-3.50%
80	SBI Magnum Global Fund	33.50%	88.76%	0.62%	375.56	241.68	133.88	36%	2.33	1.50	0.83	0.22%
81	Birla SL MNC Fund	56.39%	88.76%	0.27%	343.62	393.48	-49.87	-15%	0.92	1.06	-0.13	-0.04%
82	UTI MNC Fund	52.77%	88.76%	0.18%	335.05	287.86	47.19	14%	0.61	0.52	0.09	0.03%
83	UTI Infrastructure Fund	52.27%	85.39%	1.13%	587.41	210.93	376.48	64%	6.62	2.38	4.25	0.72%
84	ICICI Pru. Infra. Fund	52.99%	85.39%	1.07%	587.46	213.99	373.47	64%	6.30	2.30	4.01	0.68%
85	HDFC Infra. Fund	63.22%	85.39%	0.36%	590.12	312.19	277.93	47%	2.11	1.12	0.99	0.17%
86	Reliance Infra. Fund	47.71%	85.39%	0.32%	587.96	329.01	258.95	44%	1.90	1.07	0.84	0.14%
87	Birla SL Infra. Fund	44.45%	85.39%	0.23%	587.96	181.93	406.03	69%	1.35	0.42	0.93	0.16%
88	Reliance Diversified Power Sector Fund	45.98%	85.39%	1.13%	587.96	225.80	362.16	62%	6.64	2.55	4.09	0.70%
89	SBI Infra. Fund	57.45%	85.39%	0.33%	488.87	349.40	139.47	29%	1.61	1.15	0.46	0.09%
90	Tata Infra. Fund	57.14%	85.39%	0.59%	591.83	240.17	351.66	59%	3.47	1.41	2.06	0.35%
91	Reliance Pharma Fund	76.91%	100.00%	0.48%	263.49	273.37	-9.88	-4%	1.27	1.32	-0.05	-0.02%
92	Reliance Natural Resources Fund	61.44%	44.11%	0.86%	222.60	1640.56	-1417.96	-637%	1.92	14.18	-12.25	-5.51%
93	Sundaram Energy Opportunities Fund	55%	100%	0.39%	1689.41	855.80	833.61	49%	6.51	3.30	3.21	0.19%
	All categories Total/Average	48%	48%	100%	270.50	265.69	4.81	-16.43%	238.25	240.58	- 2.33	-14.99%

Infra. – Infrastructure, Sec. – Sector

4.2.1.5. *Local Bias of Top 10 Stocks of each MF Scheme in 2019*

In the previous three Tables 4.3, 4.4 and 4.5 the LB was calculated for the entire portfolio (Total Portfolio) for each MF scheme i.e. by taking all the stocks in the portfolio and arriving at the LB. However, in Tables 4.6, 4.7 and 4.8, the LB is calculated only for the top 10 stocks in the portfolio. Since the weightage of the top 10 stocks constitutes an average of 46-48% of the overall portfolio, it is important to analyse the LB in the top 10 stocks as well. The actual weightage of the top 10 stocks in a mutual fund portfolio and benchmark portfolio is shown in the first two columns of Tables 4.6, 4.7 and 4.8 given below.

As already explained, the summary of local bias (LB) for the top 10 stocks presented in Table 4.1 above has been arrived at by first calculating the weighted average distance (WAD – Benchmark) of the benchmark and the weighted average distance (WAD – Portfolio) of the top 10 stocks in the portfolio of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio for the top 10 stocks gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark for the top 10 stocks gives the LB for each mutual fund scheme. The LB measure is presented in two ways. LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the overall LB for all schemes considered for this study in a particular year and LB-Value weight means each mutual fund scheme is given weightage according to the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study for a particular year. Table 4.7 gives the LB of the top 10 stocks in the portfolio of each mutual fund scheme in 2019 which has been arrived at by the above calculation. To calculate the LB of each MF, the weighted average distance (WAD) of the benchmark and the weighted average distance (WAD) of the top 10 stocks in the portfolio of each mutual fund scheme in April 2013 have been calculated. This is given in Annexure B and Annexure D respectively.

Table 4.7 - Local Bias of Top 10 Stocks of each MF Scheme in 2019

S No	Largecap Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	SBI BC Fund	47%	52%	3.41%	126	148	-22	-17%	4.31	5.04	-0.73	-0.58%
2	ICICI Prudential BC Fund	47%	52%	3.49%	126.09	178.66	-52.57	-42%	4.40	6.23	-1.83	-1.45%
3	Aditya Birla SL FL Equity Fund	50%	52%	3.07%	124.56	162.72	-38.15	-31%	3.82	4.99	-1.17	-0.94%
4	HDFC Top 100 Fund	59%	52%	2.68%	125.65	212.08	-86.43	-69%	3.36	5.68	-2.31	-1.84%
5	Mirae Asset LC Fund	50%	52%	2.30%	126.73	173.51	-46.78	-37%	2.91	3.99	-1.08	-0.85%
6	Nippon India LC Fund	53%	52%	1.89%	124.56	161.56	-37.00	-30%	2.36	3.06	-0.70	-0.56%
7	Franklin India BC Fund	55%	52%	0.96%	124.56	289.93	-165.36	-133%	1.20	2.80	-1.59	-1.28%
8	UTI Mastershare Unit Scheme	50%	52%	0.89%	126.37	110.15	16.23	13%	1.13	0.98	0.14	0.11%
9	Axis BC Fund	60%	52%	1.27%	124.50	67.26	57.24	46%	1.58	0.85	0.72	0.58%
10	DSP Top 100 Equity Fund	54%	52%	0.38%	125.99	85.55	40.44	32%	0.48	0.33	0.15	0.12%
11	Kotak BC Fund	55%	52%	0.21%	126.37	60.59	65.79	52%	0.26	0.13	0.14	0.11%
12	JM LC Fund	51%	52%	0.37%	124.67	85.00	39.67	32%	0.46	0.31	0.15	0.12%

AUM – Assets under Management (Rs. in Bn), Wt.- Weight, WAD – Weighted Average Distance, Diff. – Difference, LB – Local Bias, B'Mark – Benchmark, BC – Bluechip, LC – Largecap

This table gives the LB of the top 10 stocks of each MF scheme in 2019 based on which the LB summary for 2019 is given in Table 4.1.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

S No	Large Midcap Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
13	Mirae Asset Emg. BC Fund	38%	46.89%	1.28%	113.22	59.86	53.36	47%	1.45	0.77	0.68	0.60%
14	DSP Eq. Opp. Fund	42%	25.02%	0.81%	112.93	92.42	20.51	18%	0.92	0.75	0.17	0.15%
15	Canara Robeco Emg. Eq.	38%	25.02%	0.76%	112.93	68.52	44.42	39%	0.85	0.52	0.34	0.30%
16	Aditya Birla SL Eq. Adv. Fund	50%	25.02%	0.74%	111.28	175.88	-64.60	-58%	0.82	1.30	-0.48	-0.43%
17	ICICI Pru. Large & MC Fund	39%	25.02%	0.54%	112.64	252.78	-140.14	-124%	0.60	1.36	-0.75	-0.67%
18	SBI Large & MC Fund	38%	25.02%	0.40%	112.90	175.77	-62.88	-56%	0.45	0.70	-0.25	-0.22%
19	IDFC Core Equity Fund	41%	25.02%	0.42%	111.24	58.83	52.42	47%	0.46	0.25	0.22	0.20%
20	Nippon India Vision Fund	38%	25.02%	0.41%	111.28	119.57	-8.29	-7%	0.46	0.49	-0.03	-0.03%
21	Kotak Eq. Opp. Fund	44%	25.02%	0.40%	112.90	119.25	-6.35	-6%	0.45	0.47	-0.03	-0.02%
22	Franklin India Eq. Adv. Fund	39%	25.02%	0.38%	111.44	120.41	-8.98	-8%	0.42	0.46	-0.03	-0.03%
23	Invesco India Growth Opp. Fund	39%	25.02%	0.29%	111.34	127.65	-16.31	-15%	0.32	0.37	-0.05	-0.04%
24	Tata Large & MC Fund	51%	25.02%	0.22%	112.97	276.35	-163.38	-145%	0.25	0.60	-0.36	-0.32%
25	HDFC Large & MC Fund	55%	25.02%	0.20%	112.97	247.30	-134.33	-119%	0.22	0.48	-0.26	-0.23%
26	L&T Large & MC Fund	41%	25.02%	0.20%	111.44	172.14	-60.71	-54%	0.22	0.34	-0.12	-0.11%
27	Axis Growth Opp. Fund	39%	25.02%	0.13%	111.22	357.10	-245.88	-221%	0.14	0.46	-0.32	-0.29%
28	UTI Core Eq. Fund	51%	25.02%	0.13%	111.22	357.10	-245.88	-221%	0.14	0.45	-0.31	-0.28%
29	Sundaram Large MC Fund	42%	25.02%	0.13%	602.17	527.54	74.63	12%	0.76	0.66	0.09	0.02%

Opp. – Opportunities, BC – Bluechip, MC – Midcap, Eq. – Equities, Adv. – Advantage, Emg. – Emerging

S No	Midcap Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
30	HDFC MC Opp. Fund	32%	17%	3.27%	165.46	193.60	-28.14	-17%	5.42	6.34	-0.92	-0.56%
31	Franklin India Prima Fund	28%	17%	1.09%	163.94	118.54	45.40	28%	1.78	1.29	0.49	0.30%
32	DSP MC Fund	32%	17%	0.97%	165.62	266.21	-100.59	-61%	1.60	2.58	-0.97	-0.59%
33	Nippon India Gr. Fund	27%	17%	0.96%	164.04	208.96	-44.92	-27%	1.57	2.00	-0.43	-0.26%
34	Sundaram MC Fund	30%	17%	0.85%	191.83	314.29	-122.46	-64%	1.63	2.67	-1.04	-0.54%
35	L&T MC Fund	23%	17%	0.84%	163.94	293.94	-130.00	-79%	1.38	2.48	-1.10	-0.67%
36	Kotak Emg. Eq. Fund	31%	17%	0.77%	163.24	195.19	-31.94	-20%	1.26	1.51	-0.25	-0.15%
37	UTI MC Fund	30%	17%	0.54%	163.24	364.38	-201.14	-123%	0.88	1.97	-1.09	-0.67%
38	Axis MC Fund	42%	17%	0.51%	163.96	374.62	-210.67	-128%	0.84	1.92	-1.08	-0.66%
39	SBI Magnum MC Fund	48%	17%	0.51%	163.24	421.00	-257.76	-158%	0.83	2.14	-1.31	-0.80%
40	Aditya Birla SL MC Fund	29%	17%	0.34%	164.04	239.89	-75.85	-46%	0.56	0.82	-0.26	-0.16%
41	ICICI Pru. MC Fund	38%	17%	0.27%	163.31	284.25	-120.94	-74%	0.44	0.76	-0.32	-0.20%
42	Motilal Oswal MC 30 Fund	63%	17%	0.24%	164.04	411.38	-247.34	-151%	0.39	0.97	-0.58	-0.35%
43	Mirae Asset MC Fund	29%	17%	0.14%	86.04	180.72	-94.69	-110%	0.12	0.26	-0.14	-0.16%

MC – Midcap, Opp. – Opportunities, Eq. – Equity, Gr. – Growth

S No	Smallcap Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
44	HDFC Small Cap Fund	26%	12%	1.32%	102.39	154.12	-51.73	-51%	1.35	2.04	-0.68	-0.67%
45	Nippon India Small Cap Fund	22%	12%	1.22%	102.39	111.00	-8.61	-8%	1.25	1.35	-0.10	-0.10%
46	Franklin India Smaller Companies Fund	27%	12%	1.02%	101.19	84.22	16.97	17%	1.03	0.86	0.17	0.17%
47	L&T Emerging Businesses Fund	24%	12%	0.88%	101.19	141.93	-40.74	-40%	0.89	1.25	-0.36	-0.36%
48	DSP Small Cap Fund	31%	12%	0.71%	102.51	137.95	-35.44	-35%	0.73	0.98	-0.25	-0.25%
49	SBI Smallcap Fund	34%	12%	0.42%	100.44	367.13	-266.69	-266%	0.42	1.55	-1.12	-1.12%
50	Aditya Birla SL Small cap Fund	27%	12%	0.33%	101.29	200.96	-99.67	-98%	0.33	0.66	-0.33	-0.32%
51	Kotak Small Cap Fund	29%	12%	0.19%	100.44	225.42	-124.98	-124%	0.19	0.42	-0.23	-0.23%
52	Axis Small Cap Fund	50%	12%	0.17%	101.20	363.76	-262.56	-259%	0.18	0.63	-0.46	-0.45%
53	Sundaram Smallcap Fund	37%	12%	0.16%	204.97	442.40	-237.43	-116%	0.32	0.70	-0.37	-0.18%

S No	Flexicap Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
54	Kotak Standard MC Fund	45%	43%	4.10%	102.81	79.19	23.62	23%	4.21	3.25	0.97	0.94%
55	HDFC Equity Fund	61%	39%	3.39%	102.22	203.72	-101.50	-99%	3.46	6.91	-3.44	-3.37%
56	Aditya Birla SL Eq. Fund	46%	39%	1.68%	101.34	134.07	-32.73	-32%	1.70	2.25	-0.55	-0.54%
57	Franklin India Eq. Fund	44%	39%	1.65%	101.48	183.07	-81.59	-80%	1.67	3.02	-1.35	-1.33%
58	UTI Equity Fund	43%	39%	1.43%	102.81	112.47	-9.66	-9%	1.47	1.61	-0.14	-0.13%
59	SBI Magnum MC Fund	41%	39%	1.21%	102.81	137.91	-35.10	-34%	1.24	1.66	-0.42	-0.41%
60	Axis Multicap Fund	59%	39%	0.70%	101.28	107.92	-6.64	-7%	0.71	0.76	-0.05	-0.05%
61	ICICI Pru. MC Fund	44%	39%	0.66%	102.58	337.57	-234.99	-229%	0.67	2.21	-1.54	-1.50%
62	Nippon India MC Fund	50%	39%	1.49%	101.34	150.91	-49.57	-49%	1.51	2.25	-0.74	-0.73%
63	<i>IDFC MC Fund</i>	<i>47%</i>	<i>39%</i>	<i>0.81%</i>	<i>101.30</i>	<i>114.79</i>	<i>-13.48</i>	<i>-13%</i>	<i>0.82</i>	<i>0.93</i>	<i>-0.11</i>	<i>-0.11%</i>
64	DSP Equity Fund	48%	39%	0.42%	102.50	23.55	78.95	77%	0.43	0.10	0.33	0.32%
65	L & T Equity Fund	47%	39%	0.39%	101.48	76.72	24.77	24%	0.40	0.30	0.10	0.10%
66	Motilal Multicap 35 Fund	61%	39%	1.95%	101.34	207.27	-105.93	-105%	1.98	4.05	-2.07	-2.04%
67	<i>Parag Parikh LT Eq. Fund</i>	<i>51%</i>	<i>39%</i>	<i>0.34%</i>	<i>109.07</i>	<i>156.57</i>	<i>-47.50</i>	<i>-44%</i>	<i>0.37</i>	<i>0.53</i>	<i>-0.16</i>	<i>-0.15%</i>
68	Tata Multicap Fund	52%	39%	0.25%	102.88	196.37	-93.49	-91%	0.26	0.49	-0.23	-0.23%
69	Canara Robeco Diversified Equity Fund	45%	39%	0.23%	102.84	48.38	54.46	53%	0.24	0.11	0.12	0.12%

MC – Multicap, LT – Long Term, Eq. – Equity

S No	Focused Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
70	Axis Focused 25 Fund	65%	43%	1.27%	101.28	124.71	-23.43	-23%	1.29	1.59	-0.30	-0.29%
71	Franklin I Foc. Eq. Fund	57%	39%	1.26%	101.48	256.59	-155.11	-153%	1.28	3.23	-1.95	-1.93%
72	SBI Foc. Equity Fund	60%	39%	0.89%	102.81	180.43	-77.62	-75%	0.91	1.60	-0.69	-0.67%
73	Aditya Birla SL Focused Equity Fund	56%	39%	0.63%	101.34	202.38	-101.05	-100%	0.64	1.28	-0.64	-0.63%
74	Nippon I Foc. Eq. Fund	53%	39%	0.62%	101.34	341.86	-240.53	-237%	0.63	2.12	-1.49	-1.47%
75	DSP Focus Fund	62%	39%	0.29%	102.50	301.56	-199.06	-194%	0.30	0.87	-0.57	-0.56%
76	Mirae Asset Foc. Fund	43%	39%	0.27%	103.10	109.07	-5.96	-6%	0.28	0.29	-0.02	-0.02%
77	IDFC Foc. Equity Fund	54%	39%	0.22%	101.30	158.79	-57.49	-57%	0.22	0.35	-0.13	-0.13%
78	Kotak Foc. Equity Fund	52%	39%	0.20%	102.81	108.49	-5.68	-6%	0.21	0.22	-0.01	-0.01%
79	Motilal Oswal Foc. 25 Fund	71%	39%	0.17%	101.34	144.61	-43.28	-43%	0.17	0.25	-0.07	-0.07%
80	Sundaram Select Focus	64%	39%	0.15%	548.69	852.01	-303.32	-55%	0.83	1.29	-0.46	-0.08%

Foc. – Focussed, Eq. – Equity, I – India

S No	Value Fund Top 10 Stocks	Wt - Actual	Wt - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
81	ICICI Pru. Value Dis. Fund	49%	43%	2.24%	102.58	442.02	-339.44	-331%	2.29	9.88	-7.59	-7.40%
82	L&T India Value Fund	42%	39%	1.16%	101.48	77.44	24.04	24%	1.18	0.90	0.28	0.28%
83	Tata Equity PE Fund	55%	39%	0.79%	102.88	215.07	-112.19	-109%	0.82	1.71	-0.89	-0.86%
84	HDFC Capital Builder Value Fund	48%	39%	0.66%	102.22	134.76	-32.54	-32%	0.67	0.88	-0.21	-0.21%
85	Invesco India Contra Fund	47%	39%	0.65%	101.39	182.97	-81.58	-80%	0.66	1.19	-0.53	-0.52%
86	UTI Value Opp. Fund	47%	39%	0.65%	102.81	214.16	-111.35	-108%	0.66	1.38	-0.72	-0.70%
87	Aditya Birla SL Pure Value Fund	30%	39%	0.62%	101.34	116.26	-14.92	-15%	0.63	0.72	-0.09	-0.09%
88	Nippon India Value Fund	39%	39%	0.46%	101.34	135.96	-34.62	-34%	0.46	0.62	-0.16	-0.16%
89	IDFC Sterling Value Fund	27%	39%	0.45%	101.30	73.87	27.43	27%	0.46	0.34	0.12	0.12%
90	SBI Contra Fund	40%	39%	0.20%	102.81	246.52	-143.71	-140%	0.21	0.49	-0.29	-0.28%

Dis. – Discovery

S No	ELSS Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
91	Axis LT Eq. Fund	65%	39%	3.11%	101.28	286.14	-184.9	-183%	3.15	8.89	-5.75	-5.67%
92	Nippon I Tax Saver Fund	55%	39%	1.54%	101.34	157.45	-56.1	-55%	1.56	2.43	-0.87	-0.85%
93	Aditya Birla SL Tax Relief 96	60%	39%	1.42%	101.34	19.24	82.1	81%	1.44	0.27	1.17	1.15%
94	SBI LT Equity Fund	47%	39%	1.06%	102.81	68.22	34.6	34%	1.09	0.73	0.37	0.36%
95	HDFC Tax Saver Fund	64%	39%	1.07%	102.22	298.10	-195.9	-192%	1.10	3.20	-2.10	-2.05%
96	ICICI Pru. LT Eq. Fund	47%	39%	0.94%	102.58	379.50	-276.9	-270%	0.97	3.58	-2.61	-2.55%
97	DSP Tax Saver Fund	43%	39%	0.88%	102.50	81.29	21.2	21%	0.90	0.72	0.19	0.18%
98	Franklin I Taxshield Fund	46%	39%	0.59%	101.48	131.58	-30.1	-30%	0.60	0.78	-0.18	-0.18%
99	L&T Tax Adv. Fund	40%	39%	0.49%	101.48	116.18	-14.7	-14%	0.50	0.57	-0.07	-0.07%
100	Mirae Asset Tax Saver Fund	48%	39%	0.39%	103.10	124.29	-21.2	-21%	0.40	0.48	-0.08	-0.08%
101	Sundaram Div. Equity	41%	39%	0.38%	548.69	517.38	31.3	6%	2.09	1.97	0.12	0.02%
102	IDFC Tax Adv. Fund	35%	39%	0.30%	101.30	40.37	60.9	60%	0.30	0.12	0.18	0.18%
103	Tata I Tax Savings Fund	58%	39%	0.29%	102.88	69.52	33.4	32%	0.30	0.20	0.10	0.09%
104	UTI Master Eq. Plan US	50%	39%	0.26%	102.81	104.23	-1.4	-1%	0.27	0.27	0.00	0.00%
105	Motilal Oswal LT Eq. Fund	58%	39%	0.23%	101.34	116.82	-15.5	-15%	0.23	0.27	-0.04	-0.04%
106	UTI LT Equity Fund	43%	39%	0.18%	102.81	201.95	-99.1	-96%	0.19	0.36	-0.18	-0.17%
107	Canara Robeco Eq. Tax Saver Fund	45%	39%	0.14%	102.84	92.69	10.2	10%	0.15	0.13	0.01	0.01%
108	Kotak Tax Saver Scheme	46%	39%	0.14%	102.8	164.2	-61.4	-60%	0.15	0.23	-0.09	-0.09%

Eq. – Equity, LT – Long Term, Adv. – Advantage, US – Unit Scheme, I – India,

S No	Thematic Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
109	A. Birla SL MNC Fund	68%	64%	0.57%	468.96	108.66	360.30	77%	2.68	0.62	2.06	0.44%
110	SBI Magnum Global Fund	50%	67%	0.55%	462.29	255.29	207.00	45%	2.57	1.42	1.15	0.25%
111	ICICI Pru. BFS Fund	63%	93%	0.50%	19.13	106.34	-87.21	-456%	0.10	0.53	-0.43	-2.27%
112	Nippon India BFS Fund	74%	93%	0.43%	17.25	171.66	-154.41	-895%	0.07	0.73	-0.66	-3.82%
113	Nippon India Pharma Fund	77%	100%	0.35%	328.00	331.52	-3.52	-1%	1.15	1.16	-0.01	0.00%
114	UTI MNC Fund	53%	64%	0.33%	462.29	390.96	71.34	15%	1.53	1.30	0.24	0.05%
115	Sundaram Rural & Consumption Fund	69%	100%	0.31%	1020.94	464.63	556.30	54%	3.18	1.45	1.73	0.17%
116	ICICI Pru. India Opp. Fund	65%	43%	0.30%	102.58	503.75	-401.17	-391%	0.31	1.53	-1.22	-1.19%
117	Aditya Birla SL BFS Fund	73%	93%	0.27%	17.25	139.75	-122.50	-710%	0.05	0.38	-0.33	-1.94%
118	L&T Infrastructure Fund	47%	70%	0.26%	354.01	358.17	-4.16	-1%	0.91	0.93	-0.01	0.00%
119	Tata India Consumer Fund	55%	64%	0.21%	600.80	599.15	1.65	0%	1.26	1.25	0.00	0.00%
120	ICICI Pru. (P.H.D) Fund	62%	57%	0.19%	320.15	184.31	135.84	42%	0.62	0.36	0.26	0.08%
121	Nippon India Power & Infra. Fund	54%	70%	0.19%	353.88	253.15	100.73	28%	0.68	0.48	0.19	0.05%
122	UTI Infrastructure Fund	53%	70%	0.19%	355.29	226.43	128.86	36%	0.66	0.42	0.24	0.07%
123	A. Birla SL India GenNext Fund	36%	68%	0.18%	593.09	155.96	437.12	74%	1.09	0.29	0.81	0.14%

BFS – Banking and Financial Services, Infra. – Infrastructure, ICICI Pru. – ICICI Prudential, FC – Flexicap

S No	Thematic Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
124	Franklin Build India Fund	58%	70%	0.18%	354.01	297.50	56.50	16%	0.64	0.54	0.10	0.03%
125	Sundaram Services Fund	36%	43%	0.18%	972.26	684.46	287.80	30%	1.76	1.24	0.52	0.05%
126	SBI BFS Fund	86%	93%	0.17%	19.68	116.12	-96.44	-490%	0.03	0.20	-0.17	-0.85%
127	ICICI Prudential Infra. Fund	52%	70%	0.16%	355.16	371.51	-16.35	-5%	0.58	0.60	-0.03	-0.01%
128	DSP TIGER Fund	42%	47%	0.16%	112.56	76.69	35.86	32%	0.18	0.12	0.06	0.05%
129	SBI Healthcare Opportunities Fund	70%	57%	0.14%	319.38	169.21	150.17	47%	0.43	0.23	0.20	0.06%
130	Mirae Asset Great Consumer Fund	44%	64%	0.13%	586.48	325.80	260.68	44%	0.79	0.44	0.35	0.06%
	All Categories Total/Average	47%	40%	100%	169.6	209.9	-40.3	-64.8%	133.3	186.0	-52.7	-59.8%

4.2.1.6. *Local Bias of Top 10 Stocks of each MFs Scheme in 2021*

In the previous three Tables 4.3, 4.4 and 4.5 the LB was calculated for the entire portfolio (Total Portfolio) for each MF scheme i.e. by taking all the stocks in the portfolio and arriving at the LB. However, in Tables 4.6, 4.7 and 4.8, the LB is calculated only for the top 10 stocks in the portfolio. Since the weightage of the top 10 stocks constitutes an average of 46-48% of the overall portfolio, it is important to analyse the LB in the top 10 stocks as well. The actual weightage of the top 10 stocks in a mutual fund portfolio and benchmark portfolio is shown in the first two columns of Tables 4.6, 4.7 and 4.8 given below.

As already explained, the summary of local bias (LB) for the top 10 stocks presented in Table 4.1 above has been arrived at by first calculating the weighted average distance (WAD – Benchmark) of the benchmark and the weighted average distance (WAD – Portfolio) of the top 10 stocks in the portfolio of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio for the top 10 stocks gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark for the top 10 stocks gives the LB for each mutual fund scheme. The LB measure is presented in two ways. LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the overall LB for all schemes considered for this study in a particular year and LB-Value weight means each mutual fund scheme is given weightage according to the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study in a particular year. Table 4.8 gives the LB of the top 10 stocks in the portfolio of each mutual fund scheme in 2021 which has been arrived at by the above calculation. To calculate the LB of each MF, the weighted average distance (WAD) of the benchmark and the weighted average distance (WAD) of the top 10 stocks in the portfolio of each mutual fund scheme in April 2013 have been calculated. This is given in Annexure B and Annexure E respectively.

Table 4.8 - Local Bias of Top 10 Stocks of each MFs Scheme in 2021

S No	Largecap Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Axis BC Fund	67%	50%	2.85%	77.18	131.41	-54.23	-70%	2.20	3.75	-1.55	-2.01%
2	SBI BC Fund	47%	50%	2.69%	78.09	257.90	-179.81	-230%	2.10	6.94	-4.84	-6.20%
3	ICICI Prudential BC Fund	58%	50%	2.61%	77.89	237.29	-159.39	-205%	2.03	6.20	-4.16	-5.35%
4	Mirae Asset LC Fund	52%	50%	2.59%	78.41	136.63	-58.22	-74%	2.03	3.54	-1.51	-1.92%
5	Aditya Birla SL FL Eq. Fund	50%	50%	1.89%	77.26	144.20	-66.95	-87%	1.46	2.72	-1.26	-1.64%
6	HDFC Top 100 Fund	56%	50%	1.82%	78.40	196.28	-117.88	-150%	1.42	3.56	-2.14	-2.73%
7	Nippon India LC Fund	54%	50%	0.95%	77.26	304.98	-227.73	-295%	0.73	2.89	-2.16	-2.79%
8	UTI Mastershare US	46%	50%	0.82%	78.09	156.13	-78.04	-100%	0.64	1.28	-0.64	-0.82%
9	Franklin India BC Fund	56%	50%	0.58%	77.33	189.59	-112.26	-145%	0.45	1.09	-0.65	-0.84%
10	Canara Robeco BC Eq. Fund	52%	50%	0.43%	79.12	89.88	-10.76	-14%	0.34	0.38	-0.05	-0.06%
11	Kotak BC Fund	49%	50%	0.29%	78.09	75.25	2.85	4%	0.23	0.22	0.01	0.01%
12	DSP Top 100 Equity Fund	60%	50%	0.24%	78.71	272.03	-193.32	-246%	0.19	0.66	-0.47	-0.60%
13	BNP Paribas LC Fund	54%	50%	0.11%	78.09	65.55	12.54	16%	0.08	0.07	0.01	0.02%
14	Tata LC Fund	53%	50%	0.09%	79.18	146.83	-67.65	-85%	0.07	0.14	-0.06	-0.08%
15	IDFC Large Cap Fund	57%	50%	0.08%	77.18	77.78	-0.60	-1%	0.06	0.06	0.00	0.00%

AUM – Assets under Management, Wt.- Weight, WAD – Weighted Average Distance, Diff. – Difference, LB – Local Bias, B'Mark – Benchmark, BC – Bluechip, LC – Largecap, US – Unit Scheme, Eq. – Equity, Birla SL – Birla Sun Life, FL – Frontline

This table gives the LB of the top 10 stocks of each MF scheme in 2021 based on which the LB summary for 2021 is given in Table 4.1.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

S No	Large Midcap Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
16	Mirae Asset Emr. BC Fund	38%	25.02%	1.82%	43.67	124.87	-81.21	-186%	0.79	2.27	-1.48	-3.38%
17	Canara Robeco Emg. Equities	35%	25.02%	0.99%	44.04	113.84	-69.81	-159%	0.44	1.13	-0.69	-1.57%
18	Kotak Equity Opp. Fund	40%	25.02%	0.69%	43.51	144.14	-100.63	-231%	0.30	0.99	-0.69	-1.60%
19	DSP Equity Opp. Fund	39%	25.02%	0.59%	43.83	123.56	-79.73	-182%	0.26	0.72	-0.47	-1.07%
20	Aditya Birla SL Eq. Adv. Fund	45%	25.02%	0.52%	43.09	184.20	-141.10	-327%	0.22	0.96	-0.74	-1.71%
21	SBI Large & Midcap Fund	35%	25.02%	0.45%	43.51	197.51	-154.00	-354%	0.20	0.89	-0.69	-1.60%
22	Axis Growth Opp. Fund	50%	25.02%	0.42%	43.06	488.51	-445.45	-1035%	0.18	2.06	-1.87	-4.35%
23	Invesco India Gr. Opp. Fund	43%	25.02%	0.35%	43.13	108.35	-65.21	-151%	0.15	0.38	-0.23	-0.54%
24	ICICI Pru. Large & MC Fund	44%	25.02%	0.31%	43.41	436.14	-392.73	-905%	0.13	1.35	-1.21	-2.79%
25	HDFC Large and MC Fund	34%	25.02%	0.29%	43.67	162.27	-118.60	-272%	0.13	0.48	-0.35	-0.80%
26	Nippon India Vision Fund	29%	25.02%	0.28%	43.09	86.90	-43.80	-102%	0.12	0.24	-0.12	-0.28%
27	Franklin India Eq. Adv. Fund	48%	25.02%	0.25%	43.13	226.37	-183.24	-425%	0.11	0.56	-0.45	-1.05%
28	Tata Large & MC Fund	49%	25.02%	0.23%	44.06	190.09	-146.03	-331%	0.10	0.43	-0.33	-0.75%
29	IDFC Core Equity Fund	41%	25.02%	0.20%	43.06	111.21	-68.15	-158%	0.09	0.23	-0.14	-0.32%
30	Sundaram Large MC Fund	39%	25.02%	0.16%	307	442	-135.09	-44%	0.48	0.69	-0.21	-0.07%
31	LIC MF Large & MC Fund	34%	25.02%	0.13%	43.67	70.80	-27.13	-62%	0.06	0.09	-0.03	-0.08%
32	L&T Large and MC Fund	29%	25.02%	0.12%	43.13	113.22	-70.09	-162%	0.05	0.14	-0.09	-0.20%
33	UTI Core Eq. Fund	35%	25.02%	0.10%	43.51	200.70	-157.19	-361%	0.04	0.20	-0.16	-0.37%

Opp. – Opportunities, MC – Midcap, Eq. – Equity, Adv. – Advantage, Gr. – Growth, Emg. – Emerging, BC – Bluechip

S No	Midcap Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
34	HDFC MC Opp. Fund	36%	17%	2.66%	88.23	251.06	-162.83	-185%	2.35	6.67	-4.33	-4.91%
35	Kotak Emerging Equity	33%	17%	1.39%	86.07	131.91	-45.84	-53%	1.19	1.83	-0.64	-0.74%
36	Axis MC Fund	34%	17%	1.34%	86.76	193.15	-106.40	-123%	1.17	2.60	-1.43	-1.65%
37	DSP MC Fund	33%	17%	1.19%	88.41	233.38	-144.97	-164%	1.05	2.78	-1.73	-1.96%
38	Nippon India Growth Fund	30%	17%	1.00%	86.07	245.51	-159.45	-185%	0.86	2.46	-1.60	-1.86%
39	Franklin India Prima Fund	33%	17%	0.68%	86.76	194.56	-107.80	-124%	0.59	1.32	-0.73	-0.84%
40	Mirae Asset MC Fund	33%	17%	0.57%	86.04	219.98	-133.95	-156%	0.49	1.25	-0.76	-0.88%
41	L&T MC Fund	33%	17%	0.58%	86.76	235.16	-148.40	-171%	0.50	1.37	-0.86	-0.99%
42	UTI MC Fund	29%	17%	0.56%	86.09	293.38	-207.29	-241%	0.48	1.65	-1.17	-1.36%
43	SBI Magnum MC Fund	36%	17%	0.54%	86.07	366.55	-280.48	-326%	0.46	1.98	-1.51	-1.76%
44	PGIM India MC Opp. Fund	33%	17%	0.28%	86.07	360.31	-274.24	-319%	0.25	1.03	-0.78	-0.91%
45	Aditya Birla SL MC Fund	32%	17%	0.28%	86.81	270.15	-183.34	-211%	0.25	0.77	-0.52	-0.60%
46	ICICI Prudential MC Fund	32%	17%	0.27%	86.14	298.74	-212.60	-247%	0.23	0.80	-0.57	-0.66%
47	Motilal Oswal MC 30 Fund	64%	17%	0.20%	86.81	420.18	-333.37	-384%	0.18	0.85	-0.68	-0.78%
48	Invesco India MC Fund	33%	17%	0.17%	86.91	200.60	-113.69	-131%	0.15	0.35	-0.20	-0.23%
49	Edelweiss MC Fund	33%	17%	0.15%	86.04	264.43	-178.39	-207%	0.13	0.39	-0.26	-0.30%
50	Tata MC Growth Fund	30%	17%	0.12%	88.54	143.56	-55.02	-62%	0.11	0.18	-0.07	-0.08%
51	HSBC MC Fund	23%	17%	0.11%	89.39	205.02	-115.62	-129%	0.10	0.22	-0.13	-0.14%
52	BNP Paribas MC Fund	32%	17%	0.09%	86.07	247.48	-161.41	-188%	0.08	0.23	-0.15	-0.17%
53	Sundaram MC Fund	27%	17%	0.58%	237.22	235.08	2.14	1%	1.38	1.37	0.01	0.01%

S No	Smallcap Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
54	Nippon India Small Cap Fund	22%	12%	1.45%	79.69	219.03	-139.34	-175%	1.15	3.17	-2.01	-2.53%
55	HDFC Small Cap Fund	38%	12%	1.11%	81.06	242.66	-161.60	-199%	0.90	2.69	-1.79	-2.21%
56	DSP Small Cap Fund	32%	12%	0.70%	81.19	266.21	-185.03	-228%	0.56	1.85	-1.29	-1.58%
57	Axis Small Cap Fund	36%	12%	0.62%	79.60	262.80	-183.20	-230%	0.49	1.63	-1.13	-1.42%
58	L&T Emerging Businesses Fund	31%	12%	0.63%	79.62	240.96	-161.34	-203%	0.51	1.53	-1.02	-1.29%
59	Franklin India Smaller Companies Fund	32%	12%	0.61%	79.62	238.45	-158.84	-200%	0.48	1.45	-0.97	-1.21%
60	Kotak Small Cap Fund	35%	12%	0.52%	79.06	321.31	-242.25	-306%	0.41	1.67	-1.26	-1.59%
61	ICICI Prudential Smallcap Fund	34%	12%	0.28%	79.11	202.54	-123.42	-156%	0.22	0.56	-0.34	-0.43%
62	Aditya Birla Sun Life Small cap Fund	29%	12%	0.25%	79.69	288.30	-208.61	-262%	0.20	0.72	-0.52	-0.65%
63	UTI Small Cap Fund	21%	12%	0.15%	79.06	154.50	-75.44	-95%	0.12	0.24	-0.11	-0.15%
64	Tata Small Cap Fund	40%	12%	0.14%	81.28	349.73	-268.45	-330%	0.12	0.51	-0.39	-0.48%
65	Canara Robeco Small Cap Fund	28%	12%	0.14%	81.28	200.99	-119.71	-147%	0.11	0.27	-0.16	-0.20%
66	IDFC Emerging Businesses Fund	29%	12%	0.12%	79.59	206.96	-127.37	-160%	0.10	0.25	-0.15	-0.19%
67	PGIM India Small Cap Fund -	33%	12%	0.10%	79.06	220.10	-141.04	-178%	0.08	0.23	-0.14	-0.18%
68	Quant Small Cap Fund	42%	12%	0.10%	79.54	371.82	-292.28	-367%	0.08	0.39	-0.30	-0.38%
69	Invesco Smallcap Fund	35%	12%	0.10%	79.81	337.70	-257.88	-323%	0.08	0.35	-0.27	-0.33%
70	Edelweiss Smallcap Fund	23%	12%	0.09%	79.00	169.86	-90.86	-115%	0.07	0.15	-0.08	-0.10%

S No	Flexicap Fund Top 10 Stocks	Wt - Actual	Wt - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
71	Kotak Flexi Cap Fund	54%	39%	3.24%	60.89	135.55	-74.66	-123%	1.97	4.39	-2.42	-3.97%
72	HDFC Flexi Cap Fund	53%	39%	2.28%	61.12	297.00	-235.88	-386%	1.39	6.77	-5.37	-8.79%
73	UTI Flexi Cap Fund	42%	39%	2.04%	60.89	137.71	-76.82	-126%	1.24	2.80	-1.56	-2.57%
74	<i>Parag Parikh FC Fund</i>	66%	39%	1.45%	66.90	4237.88	-4170.97	-6234%	0.97	61.34	-60.37	-90.23%
75	Aditya Birla SL FC Fund	50%	39%	1.36%	60.24	280.25	-220.02	-365%	0.82	3.81	-2.99	-4.96%
76	<i>SBI FC Fund</i>	41%	39%	1.30%	60.89	190.51	-129.62	-213%	0.79	2.48	-1.68	-2.77%
77	ICICI Pru. FC Fund	40%	39%	0.97%	60.73	147.19	-86.46	-142%	0.59	1.42	-0.84	-1.38%
78	Axis FC Fund	56%	39%	0.92%	60.18	115.01	-54.83	-91%	0.56	1.06	-0.51	-0.84%
79	Motilal Oswal FC Fund	55%	39%	0.97%	60.24	278.88	-218.64	-363%	0.58	2.70	-2.11	-3.51%
80	Franklin I FC Fund	54%	39%	0.87%	60.30	221.98	-161.68	-268%	0.53	1.94	-1.41	-2.35%
81	DSP FC Fund	42%	39%	0.62%	61.37	89.05	-27.68	-45%	0.38	0.55	-0.17	-0.28%
82	Canara Robeco FC Fund	43%	39%	0.52%	61.69	70.15	-8.46	-14%	0.32	0.36	-0.04	-0.07%
83	IDFC FC Fund	47%	39%	0.51%	60.18	136.23	-76.06	-126%	0.30	0.69	-0.39	-0.64%
84	Nippon India FC Fund	33%	39%	0.28%	60.24	108.06	-47.82	-79%	0.17	0.31	-0.14	-0.23%
85	L&T FC Fund	43%	39%	0.25%	60.30	102.40	-42.11	-70%	0.15	0.26	-0.11	-0.18%

FC – Flexicap, I – India

S No	Focused Fund Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
86	SBI Focused Equity Fund	48%	39%	1.82%	60.89	1753.67	-1692.78	-2780%	1.11	31.95	-30.84	-50.65%
87	Axis Focused 25 Fund	65%	39%	1.72%	60.18	175.32	-115.14	-191%	1.03	3.01	-1.97	-3.28%
88	Mirae Asset Focused Fund	54%	39%	0.67%	61.14	260.40	-199.27	-326%	0.41	1.74	-1.33	-2.18%
89	Franklin India Foc. Eq. Fund	56%	39%	0.67%	60.30	209.02	-148.72	-247%	0.40	1.39	-0.99	-1.64%
90	Nippon India Foc. Eq. Fund	52%	39%	0.50%	60.24	205.15	-144.91	-241%	0.30	1.02	-0.72	-1.19%
91	Aditya Birla SL Foc. Eq. Fund	54%	39%	0.45%	60.24	205.65	-145.41	-241%	0.27	0.93	-0.66	-1.09%
92	UTI Focused Equity Fund	44%	39%	0.24%	60.89	92.37	-31.48	-52%	0.15	0.22	-0.07	-0.12%
93	IIFL Focused Equity Fund	48%	39%	0.21%	60.24	185.25	-125.02	-208%	0.13	0.39	-0.26	-0.43%
94	ICICI Prudential Foc. Eq. Fund	49%	39%	0.20%	60.73	194.43	-133.70	-220%	0.12	0.39	-0.27	-0.44%
95	Kotak Focused Equity Fund	55%	39%	0.19%	60.89	174.48	-113.59	-187%	0.11	0.33	-0.21	-0.35%
96	DSP Focus Fund	64%	39%	0.18%	61.37	303.17	-241.80	-394%	0.11	0.54	-0.43	-0.71%
97	Motilal Oswal Foc. 25 Fund	74%	39%	0.15%	60.24	218.57	-158.34	-263%	0.09	0.34	-0.24	-0.40%
98	Invesco I Foc. 20 Eq. Fund	63%	39%	0.12%	60.30	150.02	-89.72	-149%	0.07	0.18	-0.11	-0.18%
99	IDFC Focused Equity Fund	62%	39%	0.12%	60.18	136.95	-76.77	-128%	0.07	0.17	-0.09	-0.15%
100	Sundaram Select Focus	64%	39%	0.12%	466.33	800.36	-334.04	-72%	0.55	0.94	-0.39	-0.08%
101	Canara Robeco Focused Equity Fund	55%	39%	0.10%	61.69	106.53	-44.84	-73%	0.06	0.11	-0.05	-0.07%

Foc. – Focussed, I – India, Eq. - Equity

S No	Value Fund Top 10 Stocks	Wt - Actual	Wt - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
102	ICICI Pru. Value Dis. Fund	56%	39%	1.90%	60.73	408.97	-348.24	-573%	1.15	7.75	-6.60	-10.87%
103	L&T India Value Fund	42%	39%	0.67%	60.30	138.82	-78.53	-130%	0.41	0.93	-0.53	-0.88%
104	UTI Value Opp. Fund	47%	39%	0.56%	60.89	249.51	-188.62	-310%	0.34	1.40	-1.06	-1.73%
105	HDFC Capital Builder Value Fund	46%	39%	0.46%	61.12	198.22	-137.10	-224%	0.28	0.90	-0.63	-1.02%
106	Tata Equity PE Fund	53%	39%	0.43%	61.73	317.58	-255.84	-414%	0.27	1.38	-1.11	-1.80%
107	Nippon India Value Fund	42%	39%	0.37%	60.24	191.44	-131.21	-218%	0.22	0.70	-0.48	-0.80%
108	IDFC Sterling Value Fund	29%	39%	0.35%	60.18	185.41	-125.23	-208%	0.21	0.66	-0.44	-0.74%
109	Aditya Birla SL Pure Value Fund	40%	39%	0.39%	60.24	134.00	-73.76	-122%	0.23	0.52	-0.29	-0.48%
110	Invesco India Contra Fund	50%	39%	0.71%	60.30	111.48	-51.18	-85%	0.43	0.79	-0.36	-0.60%
111	SBI Contra Fund	28%	39%	0.26%	60.89	222.81	-161.92	-266%	0.16	0.58	-0.42	-0.69%

Dis. – Discovery, Opp. – Opportunities

S No	Multicap Fund Top 10 Stocks	Wt - Actual	Wt - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Difference	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Difference	LB - Value Wt.
112	Nippon India MC Fund	38%	39%	0.92%	60.2	291.7	-231.5	-384%	0.56	2.69	-2.13	-3.54%
113	ICICI Prudential MC Fund	36%	39%	0.55%	60.7	179.4	-118.7	-195%	0.34	0.99	-0.66	-1.08%
114	Kotak Multicap Fund	27%	39%	0.30%	60.9	275.7	-214.8	-353%	0.18	0.84	-0.65	-1.07%
115	Aditya Birla SL MC Fund	30%	39%	0.27%	60.2	109.1	-48.9	-81%	0.16	0.29	-0.13	-0.22%
116	Invesco India MC Fund	34%	39%	0.14%	60.3	154.1	-93.8	-156%	0.09	0.22	-0.14	-0.23%
117	Quant Active Fund	54%	39%	0.11%	60.2	289.0	-228.8	-380%	0.07	0.32	-0.25	-0.42%
118	Baroda MC Fund	39%	39%	0.10%	66.9	162.6	-95.7	-143%	0.07	0.16	-0.09	-0.14%
	Total/Average	37%	39%	2.40%	61.4	208.8	-147.5	-258%	1.46	5.51	-4.05	-6.69%

MC – Multicap

S No	ELSS Top 10 Stocks	Wt. - Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
119	Axis LT Equity Fund	64%	39%	2.88%	60.18	231.59	-171.4	-285%	1.73	6.66	-4.93	-8.20%
120	Aditya Birla Sun Life Tax Relief 96	59%	39%	1.23%	60.24	18.67	41.6	69%	0.74	0.23	0.51	0.85%
121	Nippon India Tax Saver Fund	52%	39%	1.05%	60.24	131.87	-71.6	-119%	0.63	1.38	-0.75	-1.24%
122	SBI LT Equity Fund	37%	39%	0.93%	60.89	47.74	13.1	22%	0.57	0.45	0.12	0.20%
123	Mirae Asset Tax Saver Fund	37%	39%	0.85%	61.14	122.71	-61.6	-101%	0.52	1.05	-0.53	-0.86%
124	ICICI Pru. LT Equity Fund	46%	39%	0.85%	60.73	208.06	-147.3	-243%	0.52	1.77	-1.25	-2.06%
125	DSP Tax Saver Fund	43%	39%	0.82%	61.37	143.51	-82.1	-134%	0.51	1.18	-0.68	-1.10%
126	HDFC Tax Saver Fund	48%	39%	0.79%	61.12	145.85	-84.7	-139%	0.49	1.16	-0.67	-1.10%
127	Franklin I Taxshield Fund	50%	39%	0.43%	60.30	162.67	-102.4	-170%	0.26	0.70	-0.44	-0.73%
128	L&T Tax Adv. Fund	35%	39%	0.30%	60.30	120.45	-60.2	-100%	0.18	0.36	-0.18	-0.30%
129	IDFC Tax Adv. Fund	43%	39%	0.30%	60.18	182.73	-122.6	-204%	0.18	0.54	-0.36	-0.60%
130	UTI LT Equity Fund	40%	39%	0.26%	60.89	169.34	-108.4	-178%	0.16	0.43	-0.28	-0.46%
131	Tata I Tax Savings Fund	50%	39%	0.25%	61.73	125.27	-63.5	-103%	0.16	0.32	-0.16	-0.26%
132	Canara Robeco Equity Tax Saver	46%	39%	0.24%	61.69	85.30	-23.6	-38%	0.15	0.21	-0.06	-0.09%
133	UTI Master Eq. Plan US	48%	39%	0.21%	60.89	116.06	-55.2	-91%	0.13	0.24	-0.11	-0.19%
134	Kotak Tax Saver Scheme	44%	39%	0.20%	60.89	148.34	-87.4	-144%	0.12	0.29	-0.17	-0.28%
135	Motilal Oswal LT Equity Fund	50%	39%	0.20%	60.24	246.41	-186.2	-309%	0.12	0.49	-0.37	-0.61%
136	Sundaram Div. Equity	52%	39%	0.18%	466	647	-181.1	-39%	0.85	1.18	-0.33	-0.07%
137	Invesco India Tax Plan	53%	39%	0.16%	60.30	113.94	-53.6	-89%	0.10	0.18	-0.09	-0.14%

LT – Long Term, I – India, Adv. – Advantage

S No	Thematic Top 10 Stocks	Wt - Actual	Wt - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
138	ICICI Pru. Technology Fund	72%	100%	0.58%	645.84	921.45	-275.62	-43%	3.73	5.32	-1.59	-0.25%
139	ICICI Pru. Business Cycle Fund	50%	39%	0.51%	60.73	600.60	-539.87	-889%	0.31	3.09	-2.78	-4.58%
140	SBI Magnum Global Fund	44%	64%	0.45%	490.64	206.60	284.04	58%	2.22	0.94	1.29	0.26%
141	Nippon India Pharma Fund	70%	57%	0.44%	255.24	339.53	-84.29	-33%	1.12	1.49	-0.37	-0.14%
142	ICICI Pru BFS Fund	73%	93%	0.44%	22.68	133.67	-110.99	-489%	0.10	0.59	-0.49	-2.16%
143	SBI Magnum Equity ESG Fund	42%	57%	0.38%	138.37	604.31	-465.94	-337%	0.53	2.30	-1.77	-1.28%
144	Tata Digital India Fund	71%	100%	0.32%	656.32	471.43	184.90	28%	2.12	1.52	0.60	0.09%
145	ICICI Pru. India Opp. Fund	59%	39%	0.35%	60.73	578.05	-517.32	-852%	0.21	2.03	-1.82	-2.99%
146	Aditya Birla SL MNC Fund	58%	64%	0.33%	497.72	203.45	294.27	59%	1.64	0.67	0.97	0.19%
147	Nippon India BFS Fund	71%	93%	0.28%	21.81	122.06	-100.25	-460%	0.06	0.34	-0.28	-1.27%
148	ICICI Pru (P.H.D) Fund	67%	57%	0.26%	251.22	106.27	144.95	58%	0.64	0.27	0.37	0.15%
149	SBI BFS Fund	79%	93%	0.26%	23.18	137.79	-114.61	-494%	0.06	0.36	-0.30	-1.29%
150	Aditya Birla SL Digital India Fund	69%	100%	0.22%	649.88	499.59	150.29	23%	1.45	1.12	0.34	0.05%
151	Axis Special Situations Fund	37%	39%	0.22%	60.18	75.90	-15.72	-26%	0.13	0.17	-0.03	-0.06%
152	Aditya Birla SL India GenNext Fund	33%	64%	0.21%	520.20	117.43	402.77	77%	1.11	0.25	0.86	0.17%
153	UTI MNC Fund	55%	64%	0.22%	490.64	412.48	78.17	16%	1.08	0.90	0.17	0.03%
154	HDFC BFS Fund	79%	93%	0.19%	26.91	38.07	-11.16	-41%	0.05	0.07	-0.02	-0.08%
155	Axis ESG Equity Fund	67%	57%	0.18%	137.15	336.79	-199.64	-146%	0.25	0.62	-0.37	-0.27%
156	Aditya Birla SL BFS Fund	72%	93%	0.19%	21.81	25.53	-3.73	-17%	0.04	0.05	-0.01	-0.03%
157	SBI Technology Opp. Fund	75%	100%	0.16%	645.43	2851.10	2205.67	-342%	1.03	4.53	-3.50	-0.54%
158	SBI Healthcare Opp. Fund	69%	57%	0.16%	250.83	359.60	-108.77	-43%	0.39	0.57	-0.17	-0.07%

S No	Thematic Top 10 Stocks	Wt.- Actual	Wt. - B'Mark	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
159	Mirae Asset Healthcare Fund	66%	57%	0.15%	250.45	324.10	-73.65	-29%	0.38	0.49	-0.11	-0.04%
160	ICICI Prudential ESG Fund	51%	57%	0.15%	138.18	258.55	-120.37	-87%	0.21	0.40	-0.18	-0.13%
161	Kotak ESG Opp. Fund	45%	57%	0.15%	137.15	76.29	60.86	44%	0.21	0.12	0.09	0.07%
162	Nippon I Power & Infra Fund	54%	70%	0.14%	358.26	389.25	-30.99	-9%	0.51	0.55	-0.04	-0.01%
163	Axis Quant Fund	44%	43%	0.14%	67.00	76.70	-9.70	-14%	0.09	0.11	-0.01	-0.02%
164	Mirae Asset Great Consumer Fund	44%	64%	0.13%	514.60	397.67	116.93	23%	0.68	0.53	0.15	0.03%
165	UTI Infrastructure Fund	53%	70%	0.12%	358.61	289.20	69.41	19%	0.45	0.36	0.09	0.02%
166	ICICI Prudential Infra. Fund	51%	70%	0.12%	358.56	439.17	-80.61	-22%	0.44	0.53	-0.10	-0.03%
167	DSP Healthcare Fund	67%	57%	0.12%	262.02	283.84	-21.82	-8%	0.31	0.33	-0.03	-0.01%
168	Tata India Consumer Fund	55%	64%	0.11%	526.88	523.15	3.73	1%	0.60	0.59	0.00	0.00%
169	L&T Infrastructure Fund	47%	70%	0.11%	358.22	252.17	106.05	30%	0.41	0.29	0.12	0.03%
170	Aditya Birla SL ESG Fund	46%	57%	0.10%	137.17	238.34	-101.17	-74%	0.13	0.23	-0.10	-0.07%
171	Franklin Build India Fund	60%	70%	0.10%	358.26	284.51	73.75	21%	0.34	0.27	0.07	0.02%
172	DSP Quant Fund	36%	43%	0.10%	68.33	111.60	-43.27	-63%	0.07	0.11	-0.04	-0.06%
173	DSP TIGER Fund	31%	43%	0.11%	68.33	125.36	-57.03	-83%	0.07	0.14	-0.06	-0.09%
174	Baroda Business Cycle Fund	43%	39%	0.09%	66.90	133.26	-66.35	-99%	0.06	0.13	-0.06	-0.09%
175	ICICI MNC Fund	36%	64%	0.08%	491.28	277.87	213.41	43%	0.39	0.22	0.17	0.03%
176	ICICI FMCG Fund	57%	92%	0.08%	758.79	888.06	-129.27	-17%	0.57	0.67	-0.10	-0.01%
177	Tata Business Cycle Fund	37%	39%	0.08%	61.73	11.23	50.50	82%	0.05	0.01	0.04	0.06%
	All Categories Total/Average	46%	40%	100%	122.13	273.11	-150.98	-223.7%	88.81	302.75	-213.94	-326.9%

BFS – Banking and Financial Services, Opp. – Opportunities, Infra. – Infrastructure, ICICI Pru. – ICICI Prudential

4.3. Comparison of Local Bias for Different Categories of MFs

The second part of the research is to study the location preference for different categories of MFs viz. Large-cap, Midcap, Large-midcap and Small-cap mutual funds. The mutual fund schemes are categorized based on the size of the companies they invest in and then analysed in Tables 4.9 and 4.10. Tables 4.11 to 4.13, 4.14 to 4.17 and 4.18 to 4.21 gives the scheme-wise LB of all the MF schemes in the four categories in 2013, 2019 and 2021 respectively based on which the LB summary Tables 4.9 and 4.10 have been prepared.

Table 4.9: Category-wise Local Bias Summary for all Three Periods – Equal Weight

Equal Weights		2013					
S No	Total Portfolio	% of total AUM	Avg. Dist. – B'Mark (in km)	Avg. Dist. – P'folio (in km)	Diff.	LB – Equal Wt.	p Value
1	Large-cap	16%	550	553	-3	-1%	0.71
2	Large Midcap	13%	526	511	15	3%	0.57
3	Midcap & Small-cap	9%	779	677	102	9%	0.08
	All categories	90%	581	621	-40	-15%	0.06
		2019					
	Total Portfolio	% of total AUM	Avg. Dist. – B'Mark (in km)	Avg. Dist. – Portfolio (in km)	Diff.	LB – Equal Wt.	p Value
1	Large-cap	19%	397	407	-10	-3%	0.27
2	Large Midcap	7%	492	691	-199	-47%	0.14
3	Midcap	10%	771	711	59	7%	0.04**
4	Small-cap	6%	783	705	78	9%	0.03**
	All Categories	92%	545	595	-50	-26%	0.00***
		2021					
	Total Portfolio	% of total AUM	Avg. Dist. – B'Mark (in km)	Avg. Dist. – Portfolio (in km)	Difference	LB – Equal Wt.	p Value
1	Large-cap	17%	395	426	-32	-8%	0.21
2	Large Midcap	7%	586	728	-142	-27%	0.36
3	Midcap	12%	719	711	-8	1%	0.83
4	Small-cap	7%	699	740	-41	-6%	0.04**
	All Categories	92%	536	729	-193	-49%	0.00***

Avg. Dist. – Average Distance, Diff. – Difference, B'Mark – Benchmark, P'Folio – Portfolio

In this table, the category-wise LB is calculated with equal weight given to all mutual fund schemes. The categorisation of mutual funds is according to the SEBI guidelines.

*** - 1 per cent significance level, ** - 5 per cent significance level

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

Table 4.10: Category-wise Local Bias Summary for all Three Time Periods – Value Weight

	Weightage as % age of total AUM		2013				
S No	Total Portfolio	% of total AUM	Avg. Dist. – B'Mark (in km)	Avg. Dist. – P'folio (in km)	Diff.	LB – Equal Wt.	p Value
1	Large-cap	16%	512	522	-10	-2%	0.67
2	Large Midcap	13%	528	526	2	0%	0.92
3	Midcap & Small-cap	9%	724	677	47	4%	0.27
	All categories	90%	559	598	-39	-14%	0.07
			2019				
S No	Total Portfolio	% of total AUM	Avg. Dist. – B'Mark (in km)	Avg. Dist. – Portfolio (in km)	Diff.	LB – Equal Wt.	p Value
1	Large-cap	19%	396	445	-48	-12%	0.09
2	Large Midcap	7%	459	559	-100	-24%	0.03**
3	Midcap	10%	776	703	73	9%	0.13
4	Small-cap	6%	741	654	87	12%	0.03**
	All Categories	92%	507	540	-33	-15%	0.00***
			2021				
S No	Total Portfolio	% of total AUM	Avg. Dist. – B'Mark (in km)	Avg. Dist. – Portfolio (in km)	Diff.	LB – Equal Wt.	p Value
1	Large-cap	17%	394	459	65	-16%	0.05
2	Large Midcap	7%	557	694	-137	-26%	0.36
3	Midcap	12%	719	710	-2	-1%	0.77
4	Small-cap	7%	701	732	32	-5%	0.14
	All Categories	92%	509	718	-211	-49%	0.00***

Avg. Dist. – Average Distance, Diff. – Difference, B'Mark – Benchmark, P'folio – Portfolio

In this table, the category-wise LB is calculated with value weight (weightage according to the AUM of each scheme relative to the total AUM of equity MFs considered for this study) given to all mutual fund schemes. The categorisation of mutual funds is according to the SEBI guidelines.

*** 1 per cent significance level, ** 5 per cent significance level

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

For October 2021, the LB-Equal weight of large-cap mutual funds is -8% and the LB-Value weight is 16%. Although the LB values are positive, they are statistically not significant which indicates no local bias in large-cap mutual funds. The LB-Equal weight of large-midcap mutual funds is -27% and the LB-Value weight is -26%. The negative LB value

signifies that these funds invest farther away from the benchmark which signals no local bias or proximity preference in large-midcap mutual funds in October 2021. The LB-Equal weight of midcap mutual funds is 1% and the LB-Value weight is -1%. The LB values are statistically not significant, again indicating that there is no local bias in midcap mutual funds in October 2021. The LB-Equal weight of small-cap mutual funds is -6% and the LB-Value weight is -5%. The negative LB value signify that these funds invest farther away from the benchmark, indicating no local bias or proximity preference for small-cap mutual funds in October 2021. Overall, October 2021 data for various categories of mutual funds indicate that there is no local bias in any of the categories. Unlike earlier studies which suggest that local bias is lesser for large companies (in terms of market capitalization) compared to mid-size and smaller companies, the empirical results of this study for October 2021 show that the local bias (or proximity preference) is absent in all categories irrespective of the size of the companies in which mutual funds invest.

For October 2019, the LB-Equal weight of large-cap mutual funds is -3% and the LB-Value weight is -12%. The LB being negative in value and statistically not significant indicates that there is no local bias in large-cap mutual funds in October 2019. The LB-Equal weight of large-midcap mutual funds is -47% and the LB-Value weight is -24%. The negative LB value signifies that these funds invest farther away from the benchmark. This indicates there was no local bias or proximity preference in large-midcap mutual funds in October 2019. The LB-Equal weight of midcap mutual funds is 7% and the LB-Value weight is 9%. Although the LB values are positive, it is statistically significant for LB-Equal weight but not significant for LB-Value weight. Hence, no definite conclusion can be made about the local bias in midcap funds in October 2019. The LB-Equal weight of small-cap mutual funds is 9% and the LB-Value weight is 12%. The LB values are positive and statistically significant for both LB-Equal and Value weight. It can be concluded that there is a local bias or proximity preference in small-cap funds in October 2019. Overall for October 2019 (before Covid-19), it can be concluded that there is no local bias in most of the categories of mutual funds except small cap funds (positive local bias) which suggests lack of local bias in mutual funds.

For April 2013, the LB-equal weight of large-cap mutual funds is only -1% and the LB-value weight is only -2%. Both are negative and statistically not significant which indicates that there is no local bias in large-cap funds. The LB-Equal weight of large-midcap mutual funds is only -3% and the LB-Value weight is only -0.3%. Both are negative and statistically not

significant again signalling that there is no local bias in large-midcap funds in April 2013. The LB-Equal weight of midcap and small-cap mutual funds is 9% and the LB-Value weight is 4%. Although the LB values are positive, they are not statistically significant reinforcing that there is no local bias in midcap and small-cap funds in April 2013. Thus April 2013 data shows that there is no local bias in any of the categories of mutual funds.

Lack of local bias in most of the categories of mutual funds since 2013 suggests no information-related advantage irrespective of the size of the company, the fund managers invest in. This absence of information-related advantage for any particular size of the company may also be due to the widely available information on all listed companies in India. These results also suggest that the investment decisions of mutual fund managers (who invest mainly in listed companies in India) are guided by factors other than distance.

Statistically, local bias (positive LB) is not prevalent in most categories of mutual funds in India and there seems to be no relationship between local bias and the size of companies in which mutual funds invest in India. However, when the extent of LB in various MF categories is compared numerically, the LB is least in large-cap funds compared to small and midcap. This is in alignment with the existing literature which shows lesser location bias for larger companies compared to mid-size and small ones.

4.3.1. *Category-wise Local Bias of Large-cap MFs in 2013*

Tables 4.11 to 4.13 gives the local bias (LB) for various categories of mutual funds which invest in different sized companies in terms of market capitalisation for April 2013. The various mutual fund categories which invest in different sized companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Tables 4.9 and 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the two gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.11 gives the equal weight and value weight LB of large-cap mutual fund schemes for April 2013. As evident from the results, the LB-equal weight of large-cap mutual funds is only -1.48% and the LB-value weight of large-cap mutual funds is only -2.37%. Both are statistically not significant indicating that there is no local bias in large-cap funds in April 2013.

Table 4.11 - Category-wise Local Bias – Large-cap MFs in 2013

S No	Large-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Franklin India BC Fund	49	18.92%	492.07	599.10	-107.03	-22%	93.10	113.34	-20.25	-4.12%
2	ICICI Pru Focussed BC Fund	44	16.97%	490.79	545.76	-54.97	-11%	83.31	92.64	-9.33	-1.90%
3	Aditya Birla Sun Life Frontline Equity Fund	32	12.39%	492.45	478.52	13.92	3%	60.99	59.27	1.72	0.35%
4	DSP Top 100 Equity Fund	34	12.95%	498.35	418.61	79.74	16%	64.52	54.20	10.32	2.07%
5	UTI Mastershare US	23	8.85%	490.77	403.98	86.80	18%	43.45	35.76	7.68	1.57%
6	Reliance Equity Fund	10	3.86%	492.45	454.32	38.12	8%	19.00	17.53	1.47	0.30%
7	Kotak Mahindra 50 Unit Scheme	7	2.86%	490.77	640.43	-149.66	-30%	14.03	18.31	-4.28	-0.87%
8	SBI BC Fund	7	2.82%	496.68	566.17	-69.49	-14%	14.00	15.96	-1.96	-0.39%
9	Axis Equity Fund	6	2.13%	492.07	450.10	41.97	9%	10.49	9.60	0.89	0.18%
10	Tata Pure Equity Fund	7	2.51%	499.35	573.54	-74.18	-15%	12.54	14.40	-1.86	-0.37%
11	Birla Sun Life Top 100 Fund	3	1.21%	492.45	525.41	-32.96	-7%	5.94	6.34	-0.40	-0.08%
12	IDFC Equity Fund	3	1.22%	492.07	582.57	-90.50	-18%	6.02	7.13	-1.11	-0.23%
13	SBI Magnum Equity Fund	10	4.00%	496.68	498.56	-1.88	0%	19.89	19.97	-0.08	-0.02%
14	DSP TIGER Fund	13	4.89%	498.35	460.10	38.26	8%	24.37	22.50	1.87	0.38%
15	Sundaram Select Focus	5	2.11%	1,395.28	1,278.44	116.84	8%	29.40	26.94	2.46	0.18%
16	UTI Top 100 Fund	6	2.31%	490.77	366.90	123.87	25%	11.34	8.48	2.86	0.58%
	Total/Average	261	100%	550.09	552.66	-2.57	-1.48%	512.39	522.35	-9.97	-2.37%

AUM – Assets under Management (Rs. in Bn), Wt.- Weight, WAD – Weighted Average Distance, Diff. – Difference, LB – Local Bias, B'Mark – Benchmark

This table gives the LB of all the MF schemes in the large-cap category for 2013 (relating to size of company these MFs invest) based on which the LB summary in Tables 4.9 and 4.10 is given.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.2. Category-wise Local Bias of Large-midcap MFs in 2013

Tables 4.11 to 4.13 give the local bias (LB) is given for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for April 2013. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Tables 4.9 and 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.12 gives the equal weight and value weight-LB of large-midcap mutual fund schemes for April 2013. As evident from the results, the LB-Equal weight of large-midcap mutual funds is only -2.93% and the LB-Value weight of large-midcap mutual funds is only -0.33%. Both are statistically not significant indicating that there is no local bias in large-midcap funds in April 2013.

Table 4.12 - Category-wise Local Bias – Large-midcap MFs in 2013

S No	Large Midcap Total Portfolio	AUM	Value Wt. of each MFs	WAD – B'Mark	WAD – Portfolio	Diff.	LB – Equal Wt.	Value WAD – B'Mark	Value WAD – Portfolio	Diff.	LB – Value Wt.
1	HDFC Top 200 Fund	117	57.76%	530.45	527.45	3.00	1%	306.41	304.67	1.73	0.33%
2	Franklin Ind. FC Fund or Franklin Ind. Eq. Adv. Fund	15	7.64%	524.59	698.43	-173.84	-33%	40.10	53.38	-13.29	-2.53%
3	Reliance Vision Fund	16	8.13%	525.02	542.27	-17.25	-3%	42.66	44.07	-1.40	-0.27%
4	SBI Magnum Multiplier Plus Scheme 93	10	5.13%	525.87	358.09	167.77	32%	26.99	18.38	8.61	1.64%
5	UTI - Master Plus Unit Scheme – BC FC Fund	9	4.33%	522.64	471.30	51.35	10%	22.62	20.40	2.22	0.43%
6	Reliance Top 200 Fund	8	3.84%	525.02	549.92	-24.90	-5%	20.18	21.13	-0.96	-0.18%
7	Kotak Opportunities Fund	6	3.15%	522.64	434.80	87.84	17%	16.46	13.70	2.77	0.53%
8	ICICI Top 200 Fund	5	2.30%	522.74	458.00	64.74	12%	12.05	10.55	1.49	0.29%
9	DSP Blackrock Opp. Fund	5	2.47%	531.45	542.63	-11.18	-2%	13.14	13.42	-0.28	-0.05%
10	Tata Equity Opp. Fund	5	2.34%	532.45	574.17	-41.72	-8%	12.45	13.42	-0.98	-0.18%
11	UTI Leadership Fund or UTI BC FC Fund	6	2.90%	522.64	460.44	62.21	12%	15.14	13.34	1.80	0.34%
	Total/Average	203	100%	525.95	510.68	15.27	2.93%	528.20	526.47	1.73	0.33%

FC – Flexicap, BC – Bluechip, Opp. – Opportunities, Eq. – Equity, Adv. – Advantage

This table gives the LB of all the MF schemes in the large-midcap category for 2013 (relating to size of company these MFs invest) based on which the LB summary Tables 4.9 and 4.10 are given. Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.3. Category-wise Local Bias of Midcap and Small-cap MFs in 2013

Tables 4.11 to 4.13 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for April 2013. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and Table 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.13 gives the equal weight and value weight-LB of midcap and small-cap mutual fund schemes for April 2013. As evident from the results, the LB-Equal weight of midcap and small-cap mutual funds is 9.46% and the LB-Value weight of midcap and small-cap mutual funds is 3.69%. Although the LB values are positive, they are statistically not significant indicating that there is no local bias in midcap and small-cap funds in April 2013.

Table 4.13 - Category-wise Local Bias – Midcap and Small-cap MFs in 2013

S No	Midcap & Small-cap Total Portfolio	AUM	Value Wt. of each MFs	WAD – B'Mark	WAD – Portfolio	Diff.	LB – Equal Wt.	Value WAD – B'Mark	Value WAD – Portfolio	Diff.	LB – Value Wt.
1	Reliance Growth Fund	47	33.29%	601.85	593.61	8.24	1%	200.36	197.62	2.74	0.46%
2	HDFC MC Opportunities Fund	28	19.48%	611.10	642.32	-31.22	-5%	119.01	125.09	-6.08	-0.99%
3	DSP Small and MC Fund	11	7.57%	612.10	591.31	20.79	3%	46.36	44.78	1.57	0.26%
4	Birla Sun Life MC Fund	11	7.79%	601.85	688.93	-87.07	-14%	46.91	53.69	-6.79	-1.13%
5	Franklin India Prima Fund	7	5.28%	601.06	492.76	108.29	18%	31.75	26.03	5.72	0.95%
6	UTI – Master Value Fund	6	4.05%	594.36	597.10	-2.74	0%	24.07	24.18	-0.11	-0.02%
7	DSP Microcap Fund	4	2.75%	761.74	787.00	-25.26	-3%	20.91	21.61	-0.69	-0.09%
8	Reliance Smallcap Fund	3	2.29%	751.30	598.37	152.93	20%	17.21	13.71	3.50	0.47%
9	Franklin I Smaller Co. Fund	3	2.07%	750.51	540.12	210.39	28%	15.51	11.16	4.35	0.58%
10	Sundaram SMILE Fund – Smallcap	3	2.31%	1,390.48	855.21	535.27	38%	32.13	19.76	12.37	0.89%
11	Sundaram Select MC Fund	19	13.12%	1295.60	1066.27	229.33	18%	169.98	139.90	30.09	2.32%
	Total/Average	141	100%	779.27	677.55	101.72	9.46%	724.22	677.54	46.68	3.69%

MC – Midcap, I – India

This table gives the LB of all the MF schemes in the midcap and small-cap category for 2013 (relating to the size of the company these MFs invest in) based on which the LB summary Tables 4.9 and 4.10 are given. Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.4. Category-wise Local Bias (LB) – Large-cap MFs in 2019

Tables 4.14 to 4.17 give the local bias (LB) is given for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2019. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and Table 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.14 gives the equal weight and value weight-LB of large-cap mutual fund schemes for October 2019. As evident from the results, the LB-Equal weight of large-cap mutual funds is -2.51% and the LB-Value weight of large-cap mutual funds is -12.16%. The LB is negative in value and statistically not significant which shows that there is no local bias in large-cap mutual funds in October 2019.

Table 4.14 – Category-wise Local Bias (LB) – Large-cap MFs in 2019

S No	Large-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD – B'Mark	WAD – Portfolio	Diff.	LB – Equal Wt.	Value WAD – B'Mark	Value WAD – Portfolio	Diff.	LB – Value Wt.
1	SBI BC Fund	236	16.30%	395.08	455.87	-60.78	-15%	64.42	74.33	-9.91	-2.51%
2	ICICI Prudential BC Fund	241	16.68%	395.06	489.61	-94.54	-24%	65.91	81.68	-15.77	-3.99%
3	Aditya Birla SL FL Eq. Fund	212	14.66%	396.26	481.86	-85.60	-22%	58.10	70.66	-12.55	-3.17%
4	HDFC Top 100 Fund	185	12.79%	401.31	481.50	-80.18	-20%	51.34	61.60	-10.26	-2.56%
5	Mirae Asset LC Fund	159	10.99%	395.30	464.86	-69.55	-18%	43.44	51.08	-7.64	-1.93%
6	Nippon India LC Fund	131	9.05%	396.26	427.24	-30.99	-8%	35.86	38.66	-2.80	-0.71%
7	Franklin India BC Fund	67	4.61%	396.26	440.63	-44.37	-11%	18.27	20.32	-2.05	-0.52%
8	UTI Mastershare US	62	4.27%	395.09	437.96	-42.88	-11%	16.86	18.69	-1.83	-0.46%
9	Axis BC Fund	87	6.05%	395.89	223.50	172.39	44%	23.94	13.52	10.43	2.63%
10	DSP Top 100 Equity Fund	26	1.83%	402.14	321.20	80.94	20%	7.34	5.86	1.48	0.37%
11	Kotak BC Fund	14	1.00%	395.08	430.98	-35.90	-9%	3.94	4.30	-0.36	-0.09%
12	JM Largecap Fund	26	1.77%	395.74	222.80	172.94	44%	6.99	3.94	3.06	0.77%
	Total/Average	1,447	100%	396.62	406.50	-9.88	-2.51%	396.42	444.64	-48.21	-12.16%

AUM – Assets under Management (Rs. in Bn), Wt.- Weight, WAD – Weighted Average Distance, Diff. – Difference, LB – Local Bias, B'Mark – Benchmark, BC – Bluechip, FL – Frontline, LC – Largecap, US – Unit Scheme

This table gives the LB of all the MF schemes in the large-cap category for 2013 (relating to size of company these MFs invest) based on which the LB summary in Table 4.9 and 4.10 are given. Mutual Funds in *italics* represent foreign stock in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.5. Category-wise Local Bias (LB) of Large-midcap MFs in 2019

Tables 4.14 to 4.17 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2019. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and Table 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.15 gives the equal weight and value weight-LB of large-midcap mutual fund schemes for October 2019. As evident from the results, the LB-Equal weight of large-midcap mutual funds is -47.5% and the LB-Value weight of large-midcap mutual funds is -23.7%. The LB is negative in value which signifies that these funds invest farther away from the benchmark which shows no local bias or proximity preference in large-midcap mutual funds in October 2019.

Table 4.15 – Category-wise Local Bias (LB) – Large-midcap MFs in 2019

S No	Large Midcap Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Mirae Asset Emg. BC Fund	89	17.19%	434.58	485.90	-51.32	-12%	74.72	83.55	-8.82	-2.03%
2	DSP Equity Opp. Fund	56	10.92%	443.25	461.24	-17.99	-4%	48.39	50.36	-1.96	-0.44%
3	Canara Robeco Emg. Equities	52	10.15%	443.25	488.62	-45.36	-10%	44.99	49.59	-4.60	-1.04%
4	Aditya Birla SL Eq. Adv. Fund	51	9.91%	436.17	475.47	-39.30	-9%	43.22	47.12	-3.89	-0.89%
5	ICICI Pru. Large & MC Fund	37	7.20%	434.47	666.68	-232.21	-53%	31.29	48.01	-16.72	-3.85%
6	SBI Large & Midcap Fund	28	5.34%	434.43	626.76	-192.33	-44%	23.19	33.46	-10.27	-2.36%
7	<i>IDFC Core Equity Fund</i>	29	5.60%	435.76	319.24	116.52	27%	24.39	17.87	6.52	1.50%
8	Nippon India Vision Fund	28	5.52%	436.17	379.38	56.79	13%	24.07	20.93	3.13	0.72%
9	Kotak Equity Opp.Fund	27	5.30%	434.43	596.19	-161.77	-37%	23.01	31.58	-8.57	-1.97%
10	Franklin I Eq. Adv. Fund	26	5.08%	435.98	539.93	-103.96	-24%	22.14	27.42	-5.28	-1.21%
11	Invesco India Growth Opportunities Fund	20	3.86%	436.62	553.65	-117.03	-27%	16.86	21.37	-4.52	-1.03%
12	Tata Large & Mid Cap Fund	15	2.92%	443.30	550.56	-107.26	-24%	12.95	16.09	-3.13	-0.71%
13	HDFC Large and MC Fund	14	2.62%	443.30	593.49	-150.19	-34%	11.62	15.56	-3.94	-0.89%
14	L&T Large and MC Fund	14	2.68%	435.97	434.15	1.82	0%	11.68	11.63	0.05	0.01%
16	<i>Axis Growth Opp. Fund</i>	9	1.68%	435.78	2,796.22	-2,360.44	-542%	7.32	46.94	-39.63	-9.09%
17	UTI Core Equity Fund	9	1.69%	434.43	619.10	-184.67	-43%	7.34	10.46	-3.12	-0.72%
18	Sundaram Large MC Fund	12	2.35%	1,361.24	1,152.12	209.12	15%	31.99	27.08	4.91	0.36%
	Total/Average	516	100%	491.7	690.5	-198.8	-47.5%	459.16	559.00	-99.84	-23.7%

BC – Bluechip, MC -Midcap, Opp. – Opportunities, Eq. – Equity, Adv. – Advantage, Emg. – Emerging

This table gives the LB of all the MF schemes in the large-midcap category for 2019 (relating to size of company these MFs invest) based on which the LB summary Tables 4.9 and 4.10 are given. Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.6. Category-wise Local Bias (LB) of Midcap MFs in 2019

Tables 4.14 to 4.17 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2019. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and Table 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.16 gives the equal weight and value weight-LB of midcap mutual fund schemes for October 2019 is given. As evident from the results, the LB-Equal weight of midcap mutual funds is 7.30% and the LB-Value weight of midcap mutual funds is 9.07%. Although the LB values are positive, it is statistically significant for LB-Equal weight but not significant for LB-Value weight. Hence, it cannot be concluded about the local bias in midcap funds in October 2019.

Table 4.16 – Category-wise Local Bias (LB) –Midcap MFs in 2019

S No	Midcap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	HDFC MC Opp. Fund	226	28.96%	741.55	604.18	137.37	19%	214.74	174.96	39.78	5.36%
2	Franklin India Prima Fund	75	9.61%	731.75	618.37	113.38	15%	70.30	59.41	10.89	1.49%
3	DSP Midcap Fund	67	8.56%	742.52	759.05	-16.53	-2%	63.56	64.97	-1.41	-0.19%
4	Nippon India Growth Fund	66	8.48%	732.44	691.25	41.19	6%	62.14	58.64	3.49	0.48%
5	Sundaram MC Fund	59	7.53%	1,285.48	1,094.11	191.37	15%	96.73	82.33	14.40	1.12%
6	L&T MC Fund	58	7.46%	731.74	709.39	22.34	3%	54.58	52.92	1.67	0.23%
7	Kotak Emerging Eq. Fund	53	6.83%	725.65	727.02	-1.37	0%	49.58	49.67	-0.09	-0.01%
8	UTI Mid Cap Fund	37	4.79%	725.65	889.00	-163.35	-23%	34.76	42.59	-7.83	-1.08%
9	Axis Midcap Fund	36	4.54%	731.76	625.59	106.17	15%	33.24	28.42	4.82	0.66%
10	SBI Magnum MC Fund	35	4.51%	725.65	749.01	-23.36	-3%	32.70	33.75	-1.05	-0.15%
11	Aditya Birla Sun Life MC Fund	24	3.01%	732.44	654.72	77.72	11%	22.08	19.74	2.34	0.32%
12	ICICI Prudential MC Fund	18	2.36%	726.25	679.23	47.01	6%	17.16	16.05	1.11	0.15%
13	Motilal Oswal MC 30 Fund	16	2.08%	732.44	587.97	144.47	20%	15.23	12.23	3.00	0.41%
14	Mirae Asset MC Fund	10	1.28%	725.18	569.33	155.84	21%	9.27	7.28	1.99	0.27%
	Total/Average	782	100.00%	770.75	711.30	59.45	7.30%	776.07	702.95	73.12	9.07%

MC – Midcap, Opp. – Opportunities

This table gives the LB of all the MF schemes in the midcap category for 2019 based on which the LB summary Tables 4.9 and 4.10 are given.

Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.7. Category-wise local bias (LB) of Small-cap MFs in 2019

Tables 4.14 to 4.17 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2019. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and Table 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.17 gives the equal weight and value weight-LB of small-cap mutual fund schemes for October 2019. As evident from the results, the LB-Equal weight of small-cap mutual funds is 9.0% and the LB-Value weight of small-cap mutual funds is 11.50%. The LB values are positive and statistically significant for both LB-Equal weight and LB-Value weight. It can be concluded that there is a local bias or proximity preference in small-cap funds in October 2019.

Table 4.17 – Category-wise Local Bias (LB) –Small-cap MFs in 2019

S No	Small-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	HDFC Small Cap Fund	91	20.58%	731.99	615.86	116.13	16%	150.65	126.75	23.90	3.27%
2	Nippon I Small Cap Fund	84	18.98%	731.99	687.14	44.85	6%	138.90	130.39	8.51	1.16%
3	Franklin I Smaller Co. Fund	70	15.84%	721.05	559.11	161.94	22%	114.19	88.54	25.65	3.56%
4	L&T Emg. Businesses Fund	61	13.77%	721.03	624.13	96.90	13%	99.27	85.93	13.34	1.85%
5	DSP Small Cap Fund	49	11.05%	732.99	645.00	87.98	12%	80.98	71.26	9.72	1.33%
6	SBI Small Cap Fund	29	6.56%	714.19	771.32	-57.14	-8%	46.89	50.64	-3.75	-0.53%
7	Aditya Birla SL Small cap Fund	23	5.14%	721.88	664.82	57.06	8%	37.13	34.19	2.93	0.41%
8	Kotak Small Cap Fund	13	2.93%	714.19	794.14	-79.95	-11%	20.92	23.26	-2.34	-0.33%
9	Axis Small Cap Fund	12	2.70%	721.05	644.78	76.27	11%	19.49	17.43	2.06	0.29%
10	Sundaram Small Cap Fund	11	2.45%	1315.60	1041.48	274.12	21%	32.25	25.53	6.72	0.51%
	Total/Average	444	100%	782.59	704.78	77.82	9.00%	740.66	653.92	86.74	11.51%

I – India, Emg. – Emerging

This table gives the LB of all the MF schemes in the small-cap category for 2019 based on which the LB summary Table 4.9 and 4.10 are given.

Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.8. Category-wise Local Bias (LB) of Large-cap MFs in 2021

Tables 4.18 to 4.21 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2021. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.18 gives the equal weight and value weight-LB of large-cap mutual fund schemes for October 2021. As evident from the results, the LB-Equal weight of large-cap mutual funds is 8.08% and the LB-Value weight of large-cap mutual funds is 16.46%. Although the LB values are positive, they are statistically not significant which shows that there is no local bias in large-cap mutual funds in October 2021.

Table 4.18 - Category-wise Local Bias (LB) – Large-cap MFs in 2021

S No	Large-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Axis BC Fund	340	15.83%	393.56	336.89	56.67	14%	62.31	53.34	8.97	2.28%
2	SBI BC Fund	320	14.93%	392.03	533.55	-141.52	-36%	58.53	79.66	-21.13	-5.39%
3	<i>ICICI Prudential BC Fund</i>	311	14.49%	392.06	471.61	-79.55	-20%	56.80	68.33	-11.53	-2.94%
4	Mirae Asset Large Cap Fund	308	14.36%	392.19	512.53	-120.34	-31%	56.31	73.59	-17.28	-4.41%
5	Aditya Birla SL FL Eq. Fund	225	10.47%	393.95	446.85	-52.90	-13%	41.25	46.78	-5.54	-1.41%
6	HDFC Top 100 Fund	216	10.07%	399.11	465.78	-66.67	-17%	40.18	46.89	-6.71	-1.68%
7	Nippon India Large Cap Fund	113	5.26%	393.95	542.75	-148.80	-38%	20.71	28.54	-7.82	-1.99%
8	UTI Mastershare Unit Scheme	97	4.53%	392.03	440.96	-48.94	-12%	17.77	19.99	-2.22	-0.57%
9	Franklin India BC Fund	68	3.19%	393.75	475.21	-81.46	-21%	12.57	15.17	-2.60	-0.66%
10	Canara Robeco BC Equity Fund	51	2.36%	400.70	312.96	87.74	22%	9.47	7.40	2.07	0.52%
11	Kotak BC Fund	35	1.61%	392.03	435.03	-43.00	-11%	6.32	7.01	-0.69	-0.18%
12	DSP Top 100 Equity Fund	29	1.34%	399.93	526.62	-126.69	-32%	5.37	7.08	-1.70	-0.43%
13	BNP Paribas Large Cap Fund	13	0.59%	392.03	311.05	80.97	21%	2.31	1.83	0.48	0.12%
14	Tata Large Cap Fund	11	0.51%	400.76	265.70	135.06	34%	2.06	1.37	0.69	0.17%
15	IDFC Large Cap	10	0.45%	393.55	319.04	74.52	19%	1.77	1.43	0.33	0.08%
	Total/Average	2,145	100%	394.77	426.44	-31.66	-8.08%	393.73	458.40	-64.67	-16.46%

AUM – Assets under Management, Wt.- Weight, WAD – Weighted Average Distance, Diff. – Difference, LB – Local Bias, B'Mark – Benchmark, BC – Bluechip, FL – Frontline

This table gives the LB of all the MF schemes in the large-cap category for 2019 based on which the LB summary Table 4.9 and 4.10 are given.

Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.9. Category-wise Local Bias (LB) of Large-midcap MFs in 2021

Tables 4.18 to 4.21 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2021. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and Table 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.19 gives the equal weight and value weight-LB of large-midcap mutual fund schemes for October 2021. As evident from the results, the LB-Equal weight of large-midcap mutual funds is -27% and the LB-Value weight of large-midcap mutual funds is -25.6%. The LB is negative in value which signifies that these funds invest farther away from the benchmark which shows no local bias or proximity preference in large-midcap mutual funds in October 2021.

Table 4.19 - Category-wise Local Bias (LB) – Large-midcap MFs in 2021

S No	Large Midcap Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Mirae Asset Emerging BC Fund	216	23.03%	536.74	522.44	14.30	3%	123.63	120.33	3.29	0.61%
2	Canara Robeco Emg. Equities	118	12.53%	550.70	444.72	105.99	19%	69.03	55.74	13.29	2.41%
3	Kotak Equity Opp. Fund	82	8.74%	536.92	597.31	-60.39	-11%	46.91	52.18	-5.28	-0.98%
4	DSP Equity Opp. Fund	70	7.42%	549.88	581.21	-31.33	-6%	40.80	43.12	-2.32	-0.42%
5	Aditya Birla SL Eq. Adv. Fund	62	6.60%	541.56	548.84	-7.28	-1%	35.75	36.23	-0.48	-0.09%
6	SBI Large & MC Fund	54	5.72%	536.92	685.52	-148.61	-28%	30.69	39.18	-8.49	-1.58%
7	<i>Axis Growth Opp. Fund</i>	50	5.33%	541.02	3,304.22	-2,763.20	-511%	28.83	176.10	-147.27	-27.22%
8	Invesco I Gr. Opp. Fund	42	4.49%	542.19	399.22	142.97	26%	24.36	17.94	6.42	1.18%
9	ICICI Pru. Large & MC Fund	37	3.91%	537.26	728.63	-191.37	-36%	21.00	28.48	-7.48	-1.39%
10	HDFC Large and MC Fund	35	3.73%	548.98	506.04	42.94	8%	20.45	18.85	1.60	0.29%
11	Nippon India Vision Fund	33	3.51%	541.56	508.44	33.12	6%	19.03	17.87	1.16	0.21%
12	Franklin I Equity Adv. Fund	29	3.13%	541.11	500.34	40.77	8%	16.92	15.65	1.28	0.24%
13	Tata Large & Mid Cap Fund	27	2.88%	550.73	456.49	94.24	17%	15.86	13.15	2.71	0.49%
14	IDFC Core Equity Fund	24	2.57%	540.98	409.96	131.02	24%	13.90	10.54	3.37	0.62%
15	Sundaram Large MC Fund	18	1.96%	1,320.14	1,213.47	106.67	8%	25.92	23.83	2.09	0.16%
16	LIC MF Large & MC Fund	15	1.60%	548.98	506.77	42.21	8%	8.77	8.09	0.67	0.12%
17	L&T Large and MC Fund	15	1.56%	541.10	609.07	-67.97	-13%	8.45	9.51	-1.06	-0.20%
18	UTI Core Equity Fund	12	1.29%	536.93	576.79	-39.86	-7%	6.93	7.44	-0.51	-0.10%
	Total/Average	939	100%	585.8	727.7	-142.0	-27.0%	557.23	694.23	-137.01	-25.6%

BC – Bluechip, Emg, - Emerging, MC – Midcap, Adv. – Advantage, Opp. – Opportunities.

This table gives the LB of all the MF schemes in the large-midcap category for 2021 based on which the LB summary Table 4.9 and 4.10 are given.

Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.10. Category-wise Local Bias (LB) of Midcap MFs in 2021

Tables 4.18 to 4.21 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2021. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and Table 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.20 gives the equal weight and value weight-LB of midcap mutual fund schemes for October 2021. As evident from the results, the LB-Equal weight of midcap mutual funds is 0.59% and the LB-Value weight of midcap mutual funds is -0.87%. The LB values are statistically not significant which shows that there is no local bias in midcap mutual funds in October 2021.

Table 4.20 - Category-wise Local Bias (LB) – Midcap MFs in 2021

S No	Midcap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	HDFC Mid-Cap Opp. Fund	316	20.81%	699.01	716.70	-17.68	-3%	145.45	149.13	-3.68	-0.53%
2	Kotak Emerging Equity	165	10.85%	681.98	701.14	-19.17	-3%	73.96	76.04	-2.08	-0.30%
3	Axis Midcap Fund	160	10.52%	688.64	547.63	141.01	20%	72.43	57.60	14.83	2.15%
4	DSP Midcap Fund	142	9.34%	699.99	754.91	-54.91	-8%	65.35	70.48	-5.13	-0.73%
5	Nippon India Growth Fund	119	7.84%	681.98	766.60	-84.62	-12%	53.48	60.11	-6.64	-0.97%
6	Franklin India Prima Fund	81	5.32%	688.65	654.65	33.99	5%	36.62	34.81	1.81	0.26%
7	Mirae Asset Midcap Fund	67	4.43%	681.47	757.35	-75.89	-11%	30.20	33.57	-3.36	-0.49%
8	L&T Midcap Fund	69	4.55%	688.63	647.40	41.22	6%	31.30	29.43	1.87	0.27%
9	UTI Mid Cap Fund	67	4.40%	681.99	788.44	-106.45	-16%	30.04	34.73	-4.69	-0.69%
10	SBI Magnum Midcap Fund	64	4.23%	681.98	798.78	-116.80	-17%	28.83	33.77	-4.94	-0.72%
11	PGIM India Midcap Opp. Fund	34	2.23%	681.98	705.97	-23.99	-4%	15.20	15.74	-0.53	-0.08%
12	Aditya Birla Sun Life MC Fund	34	2.22%	689.35	706.02	-16.68	-2%	15.34	15.71	-0.37	-0.05%
13	ICICI Prudential MC Fund	32	2.09%	682.63	708.00	-25.37	-4%	14.27	14.80	-0.53	-0.08%
14	Motilal Oswal MC 30 Fund	24	1.59%	689.35	589.07	100.27	15%	10.97	9.38	1.60	0.23%
15	Invesco India MC Fund	21	1.36%	690.18	619.08	71.09	10%	9.36	8.39	0.96	0.14%
16	Edelweiss MC Fund	17	1.15%	681.43	740.04	-58.61	-9%	7.84	8.52	-0.67	-0.10%
17	Tata MC Growth Fund	15	0.96%	700.88	705.25	-4.37	-1%	6.73	6.77	-0.04	-0.01%
18	HSBC MC Fund	13	0.85%	702.40	484.93	217.47	31%	5.99	4.13	1.85	0.26%
19	BNP Paribas MC Fund	11	0.72%	681.98	677.83	4.14	1%	4.89	4.86	0.03	0.00%
20	Sundaram MC Fund	69	4.55%	1,308.69	1,147.47	161.22	12%	59.55	52.21	7.34	0.56%
	Total/Average	1,520	100.00%	719.16	710.86	8.29	0.59%	719.16	710.86	-2.37	-0.87%

MC – Midcap, Opp. – Opportunities

This table gives the LB of all the MF schemes in the Midcap category for 2021 based on which the LB summary Table 4.9 and 4.10 are given.

Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.3.11. Category-wise Local Bias (LB) of Small-cap MFs in 2021

Tables 4.18 to 4.21 give the local bias (LB) for various categories of mutual funds which invest in different sizes of companies in terms of market capitalisation for October 2021. The various mutual fund categories which invest in different sizes of companies in terms of market capitalisation are large-cap, large-midcap, midcap and small-cap funds. The summary of category-wise local bias (LB) presented in Table 4.9 and 4.10 above has been arrived at by first calculating the weighted average distance of the benchmark (WAD – Benchmark) and the weighted average distance of the portfolio (WAD – Portfolio) of the respective mutual fund scheme. The difference between the average distance of the benchmark and the average distance of the actual portfolio gives the extent of digression (Diff.) of each mutual fund scheme from its benchmark. This difference when divided by the average distance of the benchmark gives the LB for each mutual fund scheme. In this case too, LB-Equal weight means each mutual fund scheme is given equal weightage in calculating the category-wise LB for schemes considered for this study in a particular year. However LB-Value weight, in this case, means each mutual fund scheme is given weightage according to the assets under management (AUM) of the particular MF scheme relative to the total AUM of that particular category (large-cap, large-midcap, midcap, and small-cap) for a particular year.

Table 4.2 gives the equal weight and value weight-LB of small-cap mutual fund schemes for October 2021. As evident from the results, the LB-Equal weight of small-cap mutual funds is - 5.85% and the LB-Value weight is - 4.51%. The LB values are negative which signifies that these funds invest farther away from the benchmark which shows no local bias or proximity preference for small-cap mutual funds in October 2021.

Table 4.21 - Category-wise Local Bias (LB) – Small-cap MFs in 2021

S No	Small-cap Fund Total Portfolio	AUM	Value Wt. of each MFs	WAD - B'Mark	WAD - Portfolio	Diff.	LB - Equal Wt.	Value WAD - B'Mark	Value WAD - Portfolio	Diff.	LB - Value Wt.
1	Nippon India Small Cap Fund	172	20.33%	698.93	689.72	9.21	1%	142.11	140.23	1.87	0.27%
2	HDFC Small Cap Fund	132	15.59%	708.77	714.22	-5.45	-1%	110.46	111.31	-0.85	-0.12%
3	DSP Small Cap Fund	83	9.78%	709.75	803.42	-93.66	-13%	69.39	78.55	-9.16	-1.29%
4	Axis Small Cap Fund	74	8.70%	698.17	699.83	-1.66	0%	60.77	60.92	-0.14	-0.02%
5	L&T Emerging Businesses Fund	76	8.93%	698.16	869.41	-171.25	-25%	62.35	77.65	-15.29	-2.19%
6	Franklin India Smaller Co. Fund	72	8.55%	698.17	643.04	55.14	8%	59.67	54.96	4.71	0.67%
7	Kotak Small Cap Fund	62	7.31%	692.07	822.80	-130.72	-19%	50.57	60.12	-9.55	-1.38%
8	ICICI Prudential Smallcap Fund	33	3.91%	692.66	612.84	79.82	12%	27.06	23.94	3.12	0.45%
9	Aditya Birla SL Small cap Fund	30	3.51%	698.93	707.68	-8.75	-1%	24.54	24.84	-0.31	-0.04%
10	UTI Small Cap Fund	18	2.14%	692.07	701.18	-9.10	-1%	14.82	15.01	-0.19	-0.03%
11	Tata Small Cap Fund	17	2.04%	710.66	726.03	-15.38	-2%	14.46	14.77	-0.31	-0.04%
12	Canara Robeco Small Cap Fund	16	1.92%	710.65	671.40	39.25	6%	13.62	12.87	0.75	0.11%
13	IDFC Emerging Businesses Fund	14	1.69%	698.10	706.17	-8.06	-1%	11.83	11.97	-0.14	-0.02%
14	PGIM India Small Cap Fund	12	1.44%	692.07	791.80	-99.72	-14%	9.99	11.43	-1.44	-0.21%
15	Quant Small Cap Fund	12	1.47%	697.46	762.75	-65.29	-9%	10.24	11.19	-0.96	-0.14%
16	Invesco Smallcap Fund	12	1.45%	699.78	867.37	-167.58	-24%	10.15	12.58	-2.43	-0.35%
17	Edelweiss Smallcap Fund	11	1.25%	691.53	792.13	-100.60	-15%	8.64	9.90	-1.26	-0.18%
	Total/Average	846	100%	699.29	740.10	-40.81	-5.85%	700.68	732.26	-31.58	-4.51%

This table gives the LB of all the MF schemes in the Small-cap category for 2021 based on which the LB summary Table 4.9 and 4.10 are given.

Mutual Funds in *italics* represent foreign stocks in their portfolio.

Source: Mutual fund portfolio data from various MF websites given in Chapter 3. Benchmark data from the NSE website.

4.4. Local Bias and Performance of MFs

To examine whether fund managers in India generate better returns by investing in firms/companies closer to them or otherwise, the local bias (LB) measure and the corresponding 1-year trailing net returns (net returns = portfolio returns - benchmark returns) is divided into four parts (quartiles) and then analysed. The data is ordered from smallest to highest in terms of local bias. The first 25% constitutes the first quartile, the second 25% constitutes the second quartile and so on. The average local bias of each quartile is compared with the trailing 1-year net returns (portfolio returns net off benchmark returns) generated by respective mutual fund schemes. This analysis is done for two periods – pre-Covid (2019) and post-Covid (2021) to see whether there has been any change in the pattern of investments with reference to distance. The summary is given in Tables 4.22 and 4.23. The full data of local bias (LB) of all the MF schemes and their corresponding net returns for the year 2019 with foreign stocks and without foreign stocks are given in Tables 4.26 and 4.27 respectively. Similarly, the full data of local bias (LB) of all the MF schemes and their corresponding net returns for the year 2021 with foreign stocks and without foreign stocks are given in Tables 4.28 and 4.29 respectively.

Table 4.22: Comparison of Local Bias and MF Performance (net returns) – all MFs

2019	Avg. LB	Avg. 1-yr return – Portfolio	Avg. 1-yr return - Benchmark	Net returns
Quartile – 1	-126%	10%	12.3%	-2.3%
Quartile – 2	-10%	10.7%	9.9%	0.8%
Quartile – 3	6%	9.6%	8.0%	1.6%
Quartile – 4	24%	11%	9.1%	1.9%
2021	Avg. LB	Avg. 1-yr return – Portfolio	Avg. 1-yr return - Benchmark	Net returns
Quartile – 1	-188%	66%	57.7	8.5%
Quartile – 2	-15%	66%	66.5	0.0%
Quartile – 3	-1%	67%	65.8	0.8%
Quartile – 4	17%	59%	62.3	-3.4%

In this table, the empirical results of comparison of local bias and performance for 2019 and 2021 for all MF schemes investing in both domestic and foreign stocks are given. The LB data is divided into quartiles. The data is ordered from smallest to highest in terms of local bias (LB). The first 25% constitutes the first quartile, the second 25% constitutes the second quartile and so on.

Source – Calculations based on mutual fund return data from AMFI

<https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

Table 4.23: Comparison of Local Bias and MF Performance – MFs with only Domestic Stocks

2019	Avg. LB	Avg. 1-yr return – Portfolio	Avg. 1-yr return - Benchmark	Net returns
Quartile – 1	-89%	8.8%	12.6%	-3.9%
Quartile – 2	-8%	11.8%	9.6%	2.2%
Quartile – 3	7%	8.7%	7.6%	1.2%
Quartile – 4	25%	11.1%	9.0%	2.0%
2021	Avg. LB	Avg. 1-yr return – Portfolio	Avg. 1-yr return - Benchmark	Net returns
Quartile – 1	-69%	70.0%	63.9%	6.0%
Quartile – 2	-11%	63.9%	64.3%	-0.4%
Quartile – 3	1%	67.6%	68.2%	-0.6%
Quartile – 4	18%	58.1%	61.0%	-2.9%

In this table, the empirical results of comparison of local bias and performance for 2019 and 2021 for all MF schemes investing only in domestic stocks are given.

Source – Calculations based on mutual fund return data from AMFI

<https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

In 2019, MFs in the first quartile with an average local bias of -126% (investments in stocks which are farthest locations) gave negative net returns of 2.3%. However, MFs in the last quartile with an average local bias of +24% gave positive net returns of 1.9%. This empirical result is in line with the existing literature which links local bias to information advantage leading to better returns. The same trend is witnessed when mutual fund schemes with investments in only domestic stocks are considered.

Contrary to findings in 2019 data, the 2021 data shows that mutual funds in the first quartile that invested in stocks located in farthest locations (average local bias of -188%) has generated abnormally high positive net returns to the extent of 8.5%. Mutual funds in the last quartile that invested close to home location (average local bias of +17%) relative to the benchmark, generated negative net returns of 3.4%. When we consider mutual fund schemes which have invested only in domestic stocks, even then, the net returns of the first quartile (average local bias of -69%) of mutual funds is 6.0% and the net returns of the last quartile (with an average local bias of +18%) is -2.9%.

Referring to Tables 4.24 and 4.25, the results remain contrasting when the net returns of top 25 mutual funds are compared with the net returns of the bottom 25 mutual funds. In 2019, the top 25 mutual funds with an average LB of -155% generated a net 1-year return of -2.0% whereas the bottom 25 mutual funds with an average LB of +28% generated a net 1-year return of +1.4%. When MFs with only domestic stock investment are considered, we find that the top 25 mutual funds with an LB of -103% generated an average net 1-year return of -3.1% whereas the bottom 25 mutual funds with an LB of 28% generated a net 1-year return of +1.4%.

Table 4.24: Comparison of Local Bias and MF Performance – Top and Bottom 25 MF

2019	Local Bias (LB)	Avg. 1-yr return – Portfolio	Avg. 1-yr return - Benchmark	Net Returns
Top 25	-155%	10.5%	12.5%	-2.0%
Bottom 25	28%	10.8%	9.4%	1.4%
2021	Local Bias (LB)	Avg. 1-yr return – Portfolio	Avg. 1-yr return - Benchmark	Net Returns
Top 25	-282%	66.9%	55.8%	11.1%
Bottom 25	23%	52.1%	56.7%	-4.6%

In this table, the empirical results of comparison of local bias and performance for 2019 and 2021 are done for the top 25 and bottom 25 MF schemes. The MF schemes investing in both domestic and foreign stocks are considered in this table.

Source – Calculations based on mutual fund return data from AMFI

<https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

Table 4.25: Comparison of Local Bias and MF Performance – Top and Bottom 25 MF Schemes with only Domestic Stocks

		Avg. 1-yr return – Portfolio	Avg 1-yr return - Benchmark	
2019	Local Bias (LB)			Net Returns
Top 25	-103%	9.2%	12.4%	-3.1%
Bottom 25	28%	10.8%	9.4%	1.4%
2021	Local Bias (LB)	Avg. 1-yr return – Portfolio	Avg 1-yr return - Benchmark	Net Returns
Top 25	-88%	69.3%	62.0%	7.3%
Bottom 25	23%	52.1%	56.7%	-4.6%

In this table, the empirical results of the comparison of local bias and performance for 2019 and 2021 are done for the top 25 and bottom 25 MF schemes. The MF schemes investing only in domestic stocks are considered.

Source – Calculations based on mutual fund return data from AMFI

<https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

In 2021, the top 25 mutual funds with an LB of -282% generate an average net 1-year return of 11% whereas the bottom 25 mutual funds with an LB of 23% generate a net 1-year return of -4.6%. Even when we look at mutual funds which have invested only in domestic stocks, we find that the top 25 mutual funds with an LB of -88% generate an average net 1-year return of 7.3% whereas the bottom 25 mutual funds with an LB of 23% generate a net 1-year return of -4.6%.

These results indicate that in the post-Covid period, fund managers can generate better net returns by investing in farther locations. There was some information advantage which fund managers had in 2019 as a result of which they were able to generate higher net returns by investing in closer locations. However, in 2021 there seems to be no apparent information advantage of investing in companies closer to home location of mutual funds. Another interpretation can be that distance does not seem to be a proxy for information asymmetry during Covid period. Proximity which resulted in informational advantage does not seem to hold good in a post-Covid 19 scenario. These results further reaffirm that in post-Covid setup, investment decisions of mutual fund managers (who invest mainly in listed companies in India) are guided by factors other than distance.

4.4.1. Local Bias and Mutual Fund Performance (net returns) Comparison – all Mutual Funds - 2019

Table 4.22 gives the empirical results of local bias (LB) and the net returns generated in the pre-Covid year (2019) and post Covid year (2021) taking all the mutual fund schemes for the study. The whole data is divided into quartiles for analysing the net returns generated by mutual funds for every quartile of LB. Net returns are the difference between portfolio returns and benchmark returns. To arrive at this summary, the entire data of local bias (LB) of each mutual funds scheme and the corresponding 1-year net returns of mutual funds are given below for the year 2019 (Table 4.26). The data for trailing 1-year returns of mutual funds are taken from the Association of Mutual Funds of India (AMFI) website. A total of 126 mutual funds are taken for this study. Although the total number of mutual funds considered for the LB study is 130 for the year 2019, only 126 are considered for comparison of LB and returns generated by mutual funds because some of the funds out of 130 funds were recently launched and did not complete 1 full year for analysing 1-year return.

Table 4.26 – Full Data of Local Bias and Mutual Fund Performance (net returns) Comparison – all Mutual Funds - 2019

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
1	<i>Parag Parikh Long-Term Equity Fund</i>	-654%	14.50	12.10	2.40
2	Nippon India Banking & Financial Serv. Fund	-554%	10.49	20.06	-9.57
3	ICICI Pru Banking and Fin. Serv. Fund	-546%	17.74	27.77	-10.03
4	<i>Axis Growth Opportunities Fund</i>	-542%	17.76	9.00	8.77
5	Aditya Birla SL Banking and Fin. Serv. Fund	-402%	19.43	27.77	-8.34
6	SBI Banking & Financial Services Fund	-338%	26.10	27.77	-1.67
7	<i>SBI Focused Equity Fund</i>	-125%	20.23	12.23	8.00
8	<i>Franklin India Focused Equity Fund</i>	-71%	14.23	12.10	2.13
9	Nippon India Focused Equity Fund	-65%	9.18	12.23	-3.05
10	ICICI Prudential Large & Mid Cap Fund	-53%	6.94	9.00	-2.06
11	ICICI Prudential Value Discovery Fund	-48%	-0.18	12.23	-12.41
12	SBI Large & Midcap Fund	-44%	10.33	9.00	1.33
13	ICICI Prudential Multicap Fund	-43%	6.91	12.23	-5.32
14	UTI Core Equity Fund	-43%	1.96	9.00	-7.04
15	UTI Long-Term Equity Fund (Tax Saving)	-42%	9.95	13.66	-3.71
16	ICICI Prudential Long-Term Equity Fund	-37%	10.03	12.10	-2.07
17	Kotak Equity Opportunities Fund	-37%	15.49	13.11	2.38
18	UTI Equity Fund	-35%	14.25	13.66	0.59
19	HDFC Large and Midcap Fund	-34%	8.59	9.00	-0.41
20	Invesco India Contra Fund	-31%	8.16	12.23	-4.07
21	<i>IDFC Multicap Fund</i>	-31%	11.54	12.23	-0.69
22	Nippon India Pharma Fund	-30%	-4.71	-9.49	4.78

Wt. – Weight. Mutual Funds in *italics* represent foreign stocks in their portfolio.

This table gives the full data of local bias (LB) of all the MF schemes and their corresponding net returns for the year 2019 with all stocks (foreign stocks and domestic stocks).

Source –Mutual fund return data from AMFI <https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%)Portfolio	Return 1 Year (%) Benchmark	Net Return - Portfolio (%)
23	Aditya Birla SL Pure Value Fund	-27%	-6.73	-2.61	-4.12
24	Invesco India Growth Opportunities Fund	-27%	16.25	11.22	5.03
25	Nippon India Tax Saver Fund	-26%	4.18	14.02	-9.84
26	Tata Large & Mid Cap Fund	-24%	16.28	13.66	2.62
27	ICICI Prudential Bluechip Fund	-24%	10.54	15.04	-4.50
28	Franklin India Equity Advantage Fund	-24%	6.56	9.00	-2.44
29	UTI Mid Cap Fund	-23%	3.36	3.40	-0.04
30	UTI Value Opportunities Fund	-22%	9.86	13.66	-3.80
31	Aditya Birla SL Frontline Equity Fund	-22%	9.95	15.93	-5.98
32	SBI Contra Fund	-21%	0.42	12.23	-11.81
33	IDFC Sterling Value Fund	-21%	-2.87	12.23	-15.10
34	HDFC Top 100 Fund	-20%	10.03	15.04	-5.01
35	Mirae Asset Large Cap Fund	-18%	15.14	15.04	0.11
36	Nippon India Value Fund	-16%	10.38	-2.61	12.99
37	SBI Blue Chip Fund	-15%	16.13	14.02	2.12
38	L&T India Value Fund	-15%	5.05	13.66	-8.61
39	Kotak Tax Saver Scheme	-15%	15.60	12.10	3.50
40	ICICI Prudential Infrastructure Fund	-15%	7.73	14.19	-6.46
41	Axis Long Term Equity Fund	-14%	22.95	13.66	9.29
42	ICICI Pru (P.H.D) Fund	-13%	-2.44	-9.49	7.05
43	Tata India Consumer Fund	-12%	8.96	13.98	-5.02
44	Mirae Asset Emerging Bluechip Fund	-12%	17.10	9.00	8.11
45	Franklin India Bluechip Fund	-11%	6.72	15.04	-8.32
46	Kotak Small Cap Fund	-11%	7.65	-5.03	12.68
47	UTI Mastershare Unit Scheme	-11%	12.45	14.02	-1.56

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%)Portfolio	Return 1 Year (%) Benchmark	Net Return - Portfolio (%)
48	Canara Robeco Emerging Equities	-10%	10.66	9.00	1.67
49	Kotak Bluechip Fund	-9%	17.45	15.93	1.52
50	Aditya Birla Sun Life Equity Advantage Fund	-9%	11.63	9.00	2.63
51	Nippon India Multicap Fund	-9%	9.21	12.23	-3.02
52	SBI Magnum Multicap Fund	-8%	17.08	12.23	4.85
53	SBI Smallcap Fund	-8%	9.81	-3.53	13.34
54	Nippon India Large Cap Fund	-8%	9.31	14.02	-4.70
55	HDFC Equity Fund	-5%	9.05	12.10	-3.06
56	DSP Equity Opportunities Fund	-4%	15.03	9.00	6.04
57	Mirae Asset Great Consumer Fund	-4%	17.92	13.98	3.94
58	SBI Magnum Midcap Fund	-3%	4.21	3.40	0.81
59	Sundaram Services Fund	-3%	21.01	13.66	7.35
60	L&T Infrastructure Fund	-3%	1.49	14.19	-12.69
61	DSP Midcap Fund	-2%	12.51	-1.17	13.69
62	L&T Tax Advantage Fund	-2%	4.94	13.66	-8.72
63	DSP Focus Fund - Regular Plan	-1%	21.22	13.66	7.56
64	Motilal Oswal Long Term Equity Fund	-1%	17.67	12.10	5.57
65	Mirae Asset Tax Saver Fund	0%	16.23	13.11	3.12
66	Kotak Emerging Equity Fund	0%	12.45	-1.17	13.62
67	L&T Large and Midcap Fund	0%	7.63	13.66	-6.03
68	Tata Equity PE Fund - Regular Plan	1%	9.62	17.97	-8.35
69	Kotak Standard Multicap Fund	2%	16.03	13.11	2.92
70	L&T Midcap Fund	3%	3.76	-1.17	4.94
71	Sundaram Select Focus	3%	14.75	13.41	1.34

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return - Portfolio (%)
72	Aditya Birla SL Equity Fund	3%	9.50	11.30	-1.80
73	DSP Tax Saver Fund	3%	19.25	12.10	7.15
74	DSP TIGER Fund	5%	13.69	14.02	-0.33
75	Franklin India Taxshield Fund	5%	9.02	12.10	-3.08
76	UTI Master Equity Plan Unit Scheme ELSS	6%	12.61	14.02	-1.41
77	Nippon India Growth Fund	6%	9.00	2.73	6.27
78	Nippon India Power & Infra Fund	6%	3.13	14.19	-11.06
79	Nippon India Small Cap Fund	6%	-1.21	-3.53	2.32
80	ICICI Prudential MidCap Fund	6%	4.92	3.40	1.52
81	UTI MNC Fund	7%	9.30	10.94	-1.64
82	HDFC Tax Saver Fund	7%	5.05	12.10	-7.05
83	Aditya Birla SL Small cap Fund	8%	-6.38	-4.29	-2.09
84	Franklin Build India Fund	8%	11.78	0.12	11.66
85	Tata Multicap Fund	8%	15.46	12.23	3.23
86	Aditya Birla SL Focused Equity Fund	9%	11.34	15.93	-4.59
87	Motilal Multicap 35 Fund	9%	16.52	12.10	4.42
88	SBI Magnum Global Fund	9%	13.99	10.94	3.05
89	Axis Small Cap Fund	11%	23.68	-4.29	27.96
90	Aditya Birla Sun Life Midcap Fund	11%	-1.16	-1.17	0.01
91	DSP Small Cap Fund	12%	0.41	-3.53	3.94
92	Nippon India Vision Fund	13%	7.30	9.00	-1.70
93	HDFC Capital Builder Value Fund	13%	3.57	12.10	-8.53
94	L&T Emerging Businesses Fund	13%	-4.52	-3.53	-0.99
95	Sundaram Rural & Consumption Fund	14%	11.24	12.10	-0.86

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return - Portfolio (%)
96	Motilal Oswal Focused 25 Fund	14%	23.00	15.93	7.07
97	Axis Midcap Fund	15%	17.55	2.73	14.82
98	Sundaram Midcap Fund	15%	4.01	2.73	1.27
99	Sundaram Diversified Equity	15%	3.85	12.10	-8.25
100	Sundaram Large Midcap Fund	15%	16.89	9.00	7.89
101	Franklin India Prima Fund	15%	8.95	3.40	5.55
102	HDFC Small Cap Fund	16%	-5.24	-4.29	-0.95
103	IDFC Tax Advantage (ELSS) Fund	16%	4.03	13.66	-9.63
104	Franklin India Equity Fund	17%	5.48	12.10	-6.62
105	SBI Healthcare Opportunities Fund	17%	-5.26	-9.49	4.22
106	HDFC Mid-Cap Opportunities Fund	19%	2.77	-1.17	3.94
107	Axis Focused 25 Fund	19%	21.02	15.93	5.09
108	DSP Equity Fund	19%	23.09	12.10	10.99
109	UTI Infrastructure Fund	19%	12.78	14.19	-1.41
110	L & T Equity Fund	19%	7.53	12.23	-4.70
111	Motilal Oswal Midcap 30 Fund	20%	12.99	-1.17	14.16
112	DSP Top 100 Equity Fund	20%	20.79	14.02	6.78
113	Canara Robeco Diversified Equity Fund	20%	15.44	12.23	3.21
114	Sundaram Smallcap Fund	21%	0.29	-3.53	3.82
115	Franklin India Smaller Companies Fund	22%	-1.74	-4.30	2.55

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return - Portfolio (%)
116	IDFC Focused Equity Fund	26%	6.80	15.93	-9.12
117	IDFC Core Equity Fund	27%	6.09	9.00	-2.91
118	SBI Long Term Equity Fund	31%	8.78	12.23	-3.45
119	Aditya Birla Sun Life India GenNext Fund	32%	20.32	12.23	8.08
120	Tata India Tax Savings Fund	38%	17.85	17.97	-0.12
121	Canara Robeco Equity Tax Saver Fund	41%	15.13	14.02	1.12
122	Axis Bluechip Fund	44%	25.11	15.93	9.18
123	JM Largecap Fund	44%	5.73	17.97	-12.24
124	Axis Multicap Fund	45%	23.80	12.10	11.69
125	Aditya Birla Sun Life Tax Relief 96	53%	10.30	13.66	-3.36
126	Aditya Birla Sun Life MNC Fund	56%	15.35	10.94	4.42

4.4.2. Local Bias and Mutual Fund Performance (net returns) Comparison – MFs with only Domestic Stocks – 2019

Table 4.23 gives the empirical results of local bias (LB) and the net returns generated in the pre-Covid year (2019) and post-Covid year (2021) taking mutual funds with only domestic stocks. The whole data is divided into quartiles for analysing the net returns generated by mutual funds for every quartile of LB. Net returns are the difference between portfolio returns and benchmark returns. To arrive at this summary, the entire data of local bias (LB) of each mutual funds scheme and the corresponding 1-year net returns of mutual funds are given below for the year 2019 (Table 4.27). The data for trailing 1-year returns of mutual funds are taken from the Association of Mutual Funds of India (AMFI) website. A total of 121 mutual funds are taken for this study. This excludes funds with foreign stock and those which were recently launched and did not complete 1 full year for analysing 1-year return.

Table 4.27 - Full Data of Local Bias and Mutual Fund Performance (net returns) Comparison – MFs with only Domestic Stocks – 2019

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
1	Nippon India Banking & Financial Services Fund	-554%	10.49	20.06	-9.57
2	ICICI Pru Banking and Financial Services Fund	-546%	17.74	27.77	-10.03
3	Aditya Birla SL Banking and Financial Services Fund	-402%	19.43	27.77	-8.34
4	SBI Banking & Financial Services Fund	-338%	26.10	27.77	-1.67
5	Nippon India Focused Equity Fund	-65%	9.18	12.23	-3.05
6	ICICI Prudential Large & Mid Cap Fund	-53%	6.94	9.00	-2.06
7	ICICI Prudential Value Discovery Fund	-48%	-0.18	12.23	-12.41
8	SBI Large & Midcap Fund	-44%	10.33	9.00	1.33
9	ICICI Prudential Multicap Fund	-43%	6.91	12.23	-5.32
10	UTI Core Equity Fund	-43%	1.96	9.00	-7.04
11	UTI Long Term Equity Fund (Tax Saving)	-42%	9.95	13.66	-3.71
12	ICICI Prudential Long Term Equity Fund	-37%	10.03	12.10	-2.07
13	Kotak Equity Opportunities Fund	-37%	15.49	13.11	2.38
14	UTI Equity Fund	-35%	14.25	13.66	0.59
15	HDFC Large and Mid-Cap Fund	-34%	8.59	9.00	-0.41
16	Invesco India Contra Fund	-31%	8.16	12.23	-4.07
17	Nippon India Pharma Fund	-30%	-4.71	-9.49	4.78
18	Aditya Birla SL Pure Value Fund	-27%	-6.73	-2.61	-4.12
19	Invesco India Growth Opportunities Fund	-27%	16.25	11.22	5.03
20	Nippon India Tax Saver Fund	-26%	4.18	14.02	-9.84
21	Tata Large & Mid Cap Fund	-24%	16.28	13.66	2.62
22	ICICI Prudential Bluechip Fund	-24%	10.54	15.04	-4.50

This table gives the full data of local bias (LB) of all the MF schemes and its corresponding net returns for the year 2019 with only domestic stocks.

Source – Mutual fund return data from AMFI <https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
23	Franklin India Equity Advantage Fund	-24%	6.56	9.00	-2.44
24	UTI Mid Cap Fund	-23%	3.36	3.40	-0.04
25	UTI Value Opportunities Fund	-22%	9.86	13.66	-3.80
26	Aditya Birla SL Frontline Equity Fund	-22%	9.95	15.93	-5.98
27	SBI Contra Fund	-21%	0.42	12.23	-11.81
28	IDFC Sterling Value Fund	-21%	-2.87	12.23	-15.10
29	HDFC Top 100 Fund	-20%	10.03	15.04	-5.01
30	Mirae Asset Large Cap Fund	-18%	15.14	15.04	0.11
31	Nippon India Value Fund	-16%	10.38	-2.61	12.99
32	SBI Blue Chip Fund	-15%	16.13	14.02	2.12
33	L&T India Value Fund	-15%	5.05	13.66	-8.61
34	Kotak Tax Saver Scheme	-15%	15.60	12.10	3.50
35	ICICI Prudential Infrastructure Fund	-15%	7.73	14.19	-6.46
36	Axis Long Term Equity Fund	-14%	22.95	13.66	9.29
37	ICICI Pru Pharma H'care and D'nostics (P.H.D) Fund	-13%	-2.44	-9.49	7.05
38	Tata India Consumer Fund	-12%	8.96	13.98	-5.02
39	Mirae Asset Emerging Bluechip Fund	-12%	17.10	9.00	8.11
40	Franklin India Bluechip Fund	-11%	6.72	15.04	-8.32
41	Kotak Small Cap Fund	-11%	7.65	-5.03	12.68
42	UTI Mastershare Unit Scheme	-11%	12.45	14.02	-1.56
43	Canara Robeco Emerging Equities	-10%	10.66	9.00	1.67
44	Kotak Bluechip Fund	-9%	17.45	15.93	1.52
45	Aditya Birla Sun Life Equity Advantage Fund	-9%	11.63	9.00	2.63

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
46	Nippon India Multicap Fund	-9%	9.21	12.23	-3.02
47	SBI Magnum Multicap Fund	-8%	17.08	12.23	4.85
48	SBI Smallcap Fund	-8%	9.81	-3.53	13.34
49	Nippon India Large Cap Fund	-8%	9.31	14.02	-4.70
50	HDFC Equity Fund	-5%	9.05	12.10	-3.06
51	DSP Equity Opportunities Fund	-4%	15.03	9.00	6.04
52	Mirae Asset Great Consumer Fund	-4%	17.92	13.98	3.94
53	SBI Magnum Midcap Fund	-3%	4.21	3.40	0.81
54	Sundaram Services Fund	-3%	21.01	13.66	7.35
55	L&T Infrastructure Fund	-3%	1.49	14.19	-12.69
56	DSP Midcap Fund	-2%	12.51	-1.17	13.69
57	L&T Tax Advantage Fund	-2%	4.94	13.66	-8.72
58	DSP Focus Fund - Regular Plan	-1%	21.22	13.66	7.56
59	Motilal Oswal Long Term Equity Fund	-1%	17.67	12.10	5.57
60	Mirae Asset Tax Saver Fund	0%	16.23	13.11	3.12
61	Kotak Emerging Equity Fund	0%	12.45	-1.17	13.62
62	L&T Large and Midcap Fund	0%	7.63	13.66	-6.03
63	Tata Equity PE Fund - Regular Plan	1%	9.62	17.97	-8.35
64	Kotak Standard Multicap Fund	2%	16.03	13.11	2.92
65	L&T Midcap Fund	3%	3.76	-1.17	4.94
66	Sundaram Select Focus	3%	14.75	13.41	1.34
67	Aditya Birla SL Equity Fund	3%	9.50	11.30	-1.80
68	DSP Tax Saver Fund	3%	19.25	12.10	7.15

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
69	DSP TIGER Fund	5%	13.69	14.02	-0.33
70	Franklin India Taxshield Fund	5%	9.02	12.10	-3.08
71	UTI Master Equity Plan Unit Scheme ELSS	6%	12.61	14.02	-1.41
72	Nippon India Growth Fund	6%	9.00	2.73	6.27
73	Nippon India Power & Infra Fund	6%	3.13	14.19	-11.06
74	Nippon India Small Cap Fund	6%	-1.21	-3.53	2.32
75	ICICI Prudential MidCap Fund	6%	4.92	3.40	1.52
76	UTI MNC Fund	7%	9.30	10.94	-1.64
77	HDFC Tax Saver Fund	7%	5.05	12.10	-7.05
78	Aditya Birla SL Small cap Fund	8%	-6.38	-4.29	-2.09
79	Franklin Build India Fund	8%	11.78	0.12	11.66
80	Tata Multicap Fund	8%	15.46	12.23	3.23
81	Aditya Birla SL Focused Equity Fund	9%	11.34	15.93	-4.59
82	Motilal Multicap 35 Fund	9%	16.52	12.10	4.42
83	SBI Magnum Global Fund	9%	13.99	10.94	3.05
84	Axis Small Cap Fund	11%	23.68	-4.29	27.96
85	Aditya Birla Sun Life Midcap Fund	11%	-1.16	-1.17	0.01
86	DSP Small Cap Fund	12%	0.41	-3.53	3.94
87	Nippon India Vision Fund	13%	7.30	9.00	-1.70
88	HDFC Capital Builder Value Fund	13%	3.57	12.10	-8.53
89	L&T Emerging Businesses Fund	13%	-4.52	-3.53	-0.99
90	Sundaram Rural & Consumption Fund	14%	11.24	12.10	-0.86
91	Motilal Oswal Focused 25 Fund	14%	23.00	15.93	7.07

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
92	Axis Midcap Fund	15%	17.55	2.73	14.82
93	Sundaram Midcap Fund	15%	4.01	2.73	1.27
94	Sundaram Diversified Equity	15%	3.85	12.10	-8.25
95	Sundaram Large Midcap Fund	15%	16.89	9.00	7.89
96	Franklin India Prima Fund	15%	8.95	3.40	5.55
97	HDFC Small Cap Fund	16%	-5.24	-4.29	-0.95
98	IDFC Tax Advantage (ELSS) Fund	16%	4.03	13.66	-9.63
99	Franklin India Equity Fund	17%	5.48	12.10	-6.62
100	SBI Healthcare Opportunities Fund	17%	-5.26	-9.49	4.22
101	HDFC Mid-Cap Opportunities Fund	19%	2.77	-1.17	3.94
102	Axis Focused 25 Fund	19%	21.02	15.93	5.09
103	DSP Equity Fund	19%	23.09	12.10	10.99
104	UTI Infrastructure Fund	19%	12.78	14.19	-1.41
105	L & T Equity Fund	19%	7.53	12.23	-4.70
106	Motilal Oswal Midcap 30 Fund	20%	12.99	-1.17	14.16
107	DSP Top 100 Equity Fund	20%	20.79	14.02	6.78
108	Canara Robeco Diversified Equity Fund	20%	15.44	12.23	3.21
109	Sundaram Smallcap Fund	21%	0.29	-3.53	3.82
110	Franklin India Smaller Companies Fund	22%	-1.74	-4.30	2.55
111	IDFC Focused Equity Fund	26%	6.80	15.93	-9.12
112	IDFC Core Equity Fund	27%	6.09	9.00	-2.91

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
113	SBI Long Term Equity Fund	31%	8.78	12.23	-3.45
114	Aditya Birla Sun Life India GenNext Fund	32%	20.32	12.23	8.08
115	Tata India Tax Savings Fund	38%	17.85	17.97	-0.12
116	Canara Robeco Equity Tax Saver Fund	41%	15.13	14.02	1.12
117	Axis Bluechip Fund	44%	25.11	15.93	9.18
118	JM Largecap Fund	44%	5.73	17.97	-12.24
119	Axis Multicap Fund	45%	23.80	12.10	11.69
120	Aditya Birla Sun Life Tax Relief 96	53%	10.30	13.66	-3.36
121	Aditya Birla Sun Life MNC Fund	56%	15.35	10.94	4.42

4.4.3. Local Bias and Mutual Fund Performance (net returns) Comparison – all Mutual Funds - 2021

Table 4.22 gives the empirical results of local bias (LB) and the net returns generated in the pre-Covid year (2019) and post-Covid year (2021) taking all the mutual fund schemes for the study. The whole data is divided into quartiles for analysing the net returns generated by mutual funds for every quartile of LB. Net returns are the difference between portfolio returns and benchmark returns. To arrive at this summary, the entire data of local bias (LB) of each mutual funds scheme and the corresponding 1-year net returns of mutual funds are given below for the year 2021 (Table 4.28). The data for trailing 1-year returns of mutual funds are taken from the Association of Mutual Funds of India (AMFI) website. A total of 160 mutual funds are taken for this study. Although the total number of mutual funds considered for the LB study is 177 for the year 2021, only 160 are considered for comparison of LB and returns generated by mutual funds because some of the funds out of 177 funds were recently launched and did not complete 1 full year for analysing 1-year returns.

Table 4.28 - Full Data of Local Bias and Mutual Fund Performance (net returns) Comparison – all Mutual Funds - 2021

S No	Name of the Mutual Fund Schemes	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
1	<i>Parag Parikh Flexi Cap Fund</i>	-845.82%	61.39	59.08	2.31
2	<i>Axis ESG Equity Fund</i>	-787.44%	50.99	56.49	-5.50
3	Nippon India Banking & Financial Services Fund	-532.48%	79.49	62.32	17.18
4	<i>Axis Growth Opportunities Fund</i>	-510.74%	68.00	65.15	2.85
5	<i>SBI Technology Opportunities Fund</i>	-446.82%	78.04	56.91	21.13
6	<i>SBI Focused Equity Fund</i>	-444.75%	67.18	59.44	7.74
7	SBI Banking & Financial Services Fund	-380.98%	56.14	62.32	-6.17
8	<i>ICICI MNC Fund</i>	-342.78%	63.59	36.93	26.65
9	ICICI Pru Banking and Financial Services Fund	-317.43%	71.06	62.32	8.74
10	<i>ICICI Prudential ESG Fund</i>	-304.58%	37.80	56.49	-18.69
11	<i>DSP Healthcare Fund</i>	-262.04%	29.54	30.74	-1.21
12	<i>SBI Magnum Global Fund</i>	-227.97%	52.02	36.93	15.08
13	Aditya Birla SL Banking and Fin. Services Fund	-225.68%	69.35	62.32	7.03
14	<i>SBI Magnum Equity ESG Fund</i>	-212.62%	57.30	56.49	0.82
15	<i>ICICI Prudential Value Discovery Fund</i>	-189.45%	65.56	59.44	6.12
16	<i>SBI Contra Fund</i>	-187.73%	84.39	59.44	24.95
17	<i>ICICI Prudential Technology Fund</i>	-175.98%	89.79	61.46	28.33
18	<i>ICICI FMCG Fund</i>	-153.17%	40.09	32.69	7.40
19	<i>SBI Flexi Cap Fund</i>	-136.22%	59.87	59.44	0.43
20	<i>Aditya Birla Sun Life Digital India Fund</i>	-83.20%	78.38	56.91	21.47
21	ICICI Prudential India Opportunities Fund	-69.39%	95.17	59.08	36.09
22	<i>Tata Digital India Fund</i>	-67.96%	85.30	61.46	23.84
23	DSP TIGER Fund	-59.45%	86.90	54.70	32.20
24	Nippon India Multicap Fund	-51.54%	81.51	68.36	13.15

Mutual Funds in *italics* represents foreign stock in their portfolio.

This table gives full data on the local bias (LB) of all the MF schemes and their corresponding net returns for the year 2021 with foreign stocks and domestic stocks.

Source – Mutual fund return data from AMFI <https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
25	UTI Flexi Cap Fund	-38.39%	63.54	59.08	4.46
26	Nippon India Large Cap Fund	-37.77%	66.63	54.70	11.93
27	Mirae Asset Focused Fund	-37.28%	64.05	56.82	7.24
28	SBI Blue Chip Fund	-36.10%	56.54	54.70	1.84
29	ICICI Prudential Large & Mid Cap Fund	-35.62%	77.15	65.15	11.99
30	Motilal Oswal Long Term Equity Fund	-32.91%	60.97	59.08	1.89
31	ICICI Prudential Multicap Fund	-31.88%	68.85	68.36	0.49
32	DSP Top 100 Equity Fund	-31.68%	43.83	54.70	-10.88
33	Mirae Asset Large Cap Fund	-30.69%	51.95	53.83	-1.88
34	Invesco India Multicap Fund	-30.00%	67.96	68.36	-0.40
35	SBI Large & Midcap Fund	-27.68%	66.11	65.15	0.95
36	IDFC Sterling Value Fund	-27.38%	89.47	79.83	9.64
37	HDFC Flexi Cap Fund	-27.27%	74.67	59.08	15.59
38	DSP Tax Saver Fund	-27.25%	66.57	59.08	7.49
39	Kotak Focused Equity Fund	-26.36%	57.61	56.82	0.79
40	L&T India Value Fund	-25.27%	65.66	57.34	8.32
41	Axis Long Term Equity Fund	-25.23%	55.64	57.34	-1.70
42	L&T Emerging Businesses Fund	-24.53%	96.09	89.49	6.60
43	Nippon India Value Fund	-24.46%	70.80	59.08	11.72
44	Quant Active Fund	-24.25%	80.46	68.36	12.10
45	Invesco Smallcap Fund	-23.95%	90.19	87.82	2.37
46	UTI Long Term Equity Fund (Tax Saving)	-22.09%	61.64	59.08	2.56
47	DSP Focus Fund - Regular Plan	-21.11%	44.75	57.34	-12.60

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
48	Franklin India Bluechip Fund	-20.69%	65.23	53.83	11.40
49	ICICI Prudential Bluechip Fund	-20.29%	57.40	53.83	3.57
50	ICICI Prudential Infrastructure Fund	-19.45%	99.02	98.83	0.18
51	UTI Value Opportunities Fund	-18.91%	58.59	59.08	-0.49
52	Kotak Small Cap Fund	-18.89%	99.62	86.83	12.80
53	L&T Tax Advantage Fund	-18.26%	46.51	57.34	-10.83
54	DSP Flexi Cap Fund - Regular Plan	-17.33%	61.27	59.08	2.19
55	SBI Magnum Midcap Fund	-17.13%	78.39	76.92	1.47
56	HDFC Top 100 Fund	-16.70%	60.95	53.83	7.13
57	UTI Mid Cap Fund	-15.61%	68.44	76.92	-8.48
58	Nippon India Focused Equity Fund	-15.29%	76.73	59.44	17.29
59	Edelweiss Smallcap Fund	-14.55%	87.16	90.10	-2.95
60	Franklin India Focused Equity Fund	-14.49%	78.15	59.08	19.07
61	Aditya Birla SL Flexi Cap Fund	-14.44%	59.68	60.54	-0.86
62	Aditya Birla SL Frontline Equity Fund	-13.43%	57.07	53.54	3.53
63	DSP Small Cap Fund	-13.20%	74.49	89.49	-15.00
64	Tata Equity PE Fund - Regular Plan	-12.85%	48.19	51.23	-3.03
65	L&T Large and Midcap Fund	-12.56%	43.04	65.15	-22.11
66	UTI Mastershare Unit Scheme	-12.48%	56.47	54.70	1.76
67	Nippon India Growth Fund	-12.41%	77.17	71.42	5.74
68	Kotak Flexi Cap Fund	-12.33%	49.74	56.82	-7.08
69	Mirae Asset Tax Saver Fund	-12.32%	61.35	56.82	4.53
70	Motilal Oswal Flexi Cap Fund	-12.11%	36.23	59.08	-22.85

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
71	Aditya Birla SL Pure Value Fund	-11.82%	66.05	59.44	6.62
72	Kotak Equity Opportunities Fund	-11.25%	52.82	56.82	-3.99
73	Mirae Asset Midcap Fund	-11.14%	79.26	80.18	-0.92
74	Kotak Bluechip Fund	-10.97%	53.18	53.54	-0.36
75	Kotak Tax Saver Scheme	-9.44%	53.54	59.08	-5.54
76	Quant Small Cap Fund	-9.36%	112.64	90.10	22.54
77	L&T Flexi Cap Fund	-9.09%	48.15	59.44	-11.29
78	Edelweiss Mid Cap Fund	-8.60%	76.70	80.18	-3.48
79	ICICI Prudential Long Term Equity Fund	-7.96%	65.40	59.08	6.32
80	DSP Midcap Fund	-7.84%	50.67	80.18	-29.50
81	UTI Core Equity Fund	-7.42%	74.16	65.15	9.00
82	ICICI Prudential Focused Equity Fund	-7.11%	65.50	59.44	6.06
83	DSP Equity Opportunities Fund	-5.70%	63.05	65.15	-2.10
84	Tata India Consumer Fund	-5.62%	47.36	42.30	5.06
85	HDFC Tax Saver Fund	-3.82%	61.07	59.08	1.99
86	SBI Healthcare Opportunities Fund	-3.78%	27.09	30.74	-3.66
87	ICICI Prudential Midcap Fund	-3.72%	74.07	76.92	-2.85
88	PGIM India Midcap Opportunities Fund	-3.52%	90.73	80.18	10.55
89	Invesco India Contra Fund	-3.15%	56.33	59.44	-3.11
90	HDFC Capital Builder Value Fund	-3.03%	61.06	59.08	1.98
91	Franklin Build India Fund	-2.92%	88.42	98.83	-10.42
92	Kotak Emerging Equity	-2.81%	71.17	80.18	-9.01
93	HDFC Mid-Cap Opportunities Fund	-2.53%	67.52	80.18	-12.66

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
94	Aditya Birla Sun Life Midcap Fund	-2.42%	75.21	80.18	-4.97
95	IIFL Focused Equity Fund	-2.37%	62.35	57.34	5.01
96	Tata Small Cap Fund	-2.16%	93.39	86.83	6.56
97	Baroda Multicap Fund	-2.05%	75.78	68.36	7.42
98	Mirae Asset Healthcare Fund	-1.76%	33.42	30.74	2.67
99	Aditya Birla Sun Life Equity Advantage Fund	-1.34%	64.97	65.15	-0.19
100	Aditya Birla SL Small cap Fund	-1.25%	79.63	86.83	-7.20
101	IDFC Emerging Businesses Fund	-1.15%	80.69	87.82	-7.13
102	HDFC Small Cap Fund	-0.77%	94.09	86.83	7.26
103	Nippon India Power & Infra Fund	-0.63%	80.67	63.71	16.96
104	Tata Mid Cap Growth Fund	-0.62%	64.08	80.18	-16.10
105	Axis Small Cap Fund	-0.24%	73.83	86.83	-13.00
106	Mirae Asset Great Consumer Fund	0.00%	54.37	42.30	12.06
107	Nippon India Tax Saver Fund	0.48%	69.82	57.34	12.47
108	BNP Paribas Midcap Fund	0.61%	72.27	76.92	-4.66
109	IDFC Tax Advantage (ELSS) Fund	0.66%	80.19	57.34	22.84
110	Nippon India Small Cap Fund	1.32%	94.80	90.10	4.69
111	Invesco India Tax Plan	1.76%	57.28	57.34	-0.07
112	Tata India Tax Savings Fund	2.57%	55.86	51.23	4.63
113	Mirae Asset Emerging Bluechip Fund	2.66%	65.59	65.15	0.44
114	Sundaram Diversified Equity	2.82%	61.21	59.08	2.13
115	Sundaram Select Focus	3.28%	62.77	57.75	5.02
116	Axis Flexi Cap Fund	3.48%	55.12	59.08	-3.96

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
117	Motilal Oswal Focused 25 Fund	3.48%	40.51	53.54	-13.03
118	Franklin India Taxshield Fund	3.75%	69.53	59.08	10.45
119	Nippon India Pharma Fund	4.66%	34.85	30.74	4.11
120	Franklin India Prima Fund	4.94%	63.68	76.92	-13.24
121	Canara Robeco Small Cap Fund	5.52%	92.52	90.10	2.41
122	L&T Midcap Fund	5.99%	51.87	80.18	-28.31
123	Nippon India Vision Fund	6.12%	62.39	65.15	-2.76
124	Franklin India Equity Advantage Fund	7.54%	73.63	65.15	8.47
125	LIC MF Large & Mid Cap Fund	7.69%	54.83	65.15	-10.32
126	HDFC Large and Mid Cap Fund	7.82%	77.60	65.15	12.45
127	Franklin India Smaller Companies Fund	7.90%	86.56	90.10	-3.55
128	Sundaram Large Midcap Fund	8.08%	63.83	65.15	-1.32
129	DSP Quant Fund	8.67%	51.41	57.34	-5.94
130	L&T Infrastructure Fund	9.34%	86.76	63.71	23.05
131	Invesco India Mid Cap Fund	10.30%	65.21	80.18	-14.97
132	Canara Robeco Equity Tax Saver	11.19%	59.09	54.70	4.38
133	ICICI Prudential Smallcap Fund	11.52%	94.59	90.10	4.49
134	UTI Infrastructure Fund	11.82%	73.11	63.71	9.40
135	Sundaram Midcap Fund	12.32%	62.82	80.18	-17.36
136	SBI Long Term Equity Fund	13.13%	58.39	59.44	-1.05
137	Franklin India Flexi Cap Fund	13.28%	73.70	59.08	14.62
138	Axis Bluechip Fund	14.40%	47.70	53.54	-5.84
139	Motilal Oswal Midcap 30 Fund	14.55%	71.65	80.18	-8.53
140	Canara Robeco Flexi Cap Fund	14.94%	54.89	59.44	-4.55

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
141	IDFC Flexi Cap Fund	14.98%	53.39	59.44	-6.05
142	UTI MNC Fund	15.31%	39.87	36.93	2.93
143	Axis Focused 25 Fund	16.78%	55.81	53.54	2.27
144	Tata Large & Mid Cap Fund	17.11%	52.28	65.15	-12.88
145	IDFC Large Cap	18.93%	46.88	54.70	-7.82
146	Canara Robeco Emerging Equities	19.25%	61.44	65.15	-3.72
147	Invesco India Focused 20 Equity Fund	19.65%	59.60	59.44	0.16
148	Axis Midcap Fund	20.48%	63.28	71.42	-8.15
149	BNP Paribas Large Cap Fund	20.66%	48.21	53.54	-5.33
150	IDFC Focused Equity Fund	21.46%	37.58	59.44	-21.86
151	UTI Master Equity Plan Unit Scheme ELSS	21.54%	53.69	54.70	-1.01
152	Canara Robeco Bluechip Equity Fund	21.90%	50.16	54.70	-4.54
153	Aditya Birla SL Focused Equity Fund	22.58%	53.76	53.54	0.21
154	IDFC Core Equity Fund	24.22%	58.68	65.15	-6.47
155	Invesco India Growth Opportunities Fund	26.37%	50.45	62.08	-11.62
156	Tata Large Cap Fund	33.70%	60.34	51.23	9.11
157	Aditya Birla Sun Life Tax Relief 96	35.09%	33.77	57.34	-23.57
158	Aditya Birla Sun Life India GenNext Fund	35.76%	59.94	59.44	0.50
159	Aditya Birla Sun Life MNC Fund	42.56%	26.32	36.93	-10.61
160	ICICI Pru Pharma H'care and D'nostics (P.H.D) Fund	45.20%	29.92	30.74	-0.82

4.4.4. Local Bias and Mutual Fund Performance (net returns) Comparison – Mutual Funds with Domestic Stocks - 2021

Table 4.23 gives the empirical results of local bias (LB) and the net returns generated in the pre-Covid year (2019) and post Covid year (2021) taking mutual funds with only domestic stocks. The whole data is divided into quartiles for analysing the net returns generated by mutual funds for every quartile of LB. Net returns are the difference between portfolio returns and benchmark returns. To arrive at this summary, the entire data of local bias (LB) of each mutual funds scheme and the corresponding 1-year net returns of mutual funds are given below for the year 2021 (Table 4.29). The data for trailing 1-year returns of mutual funds are taken from the Association of Mutual Funds of India (AMFI) website. A total of 142 mutual funds are taken for this study. This excludes funds with foreign stock and those which were recently launched and did not complete 1 full year for analysing 1-year returns.

Table 4.29 - Local Bias and Mutual Fund Performance (net returns) Comparison – Mutual Funds with Domestic Stocks - 2021

S No	Name of the Mutual Fund Schemes	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
1	Nippon India BFS Fund	-532.48%	79.49	62.32	17.18
2	SBI BFS Fund	-380.98%	56.14	62.32	-6.17
3	ICICI Pru BFS Fund	-317.43%	71.06	62.32	8.74
4	Aditya Birla SL BFS Fund	-225.68%	69.35	62.32	7.03
5	ICICI Prudential India Opp. Fund	-69.39%	95.17	59.08	36.09
6	DSP TIGER Fund	-59.45%	86.90	54.70	32.20
7	Nippon India Multicap Fund	-51.54%	81.51	68.36	13.15
8	UTI Flexi Cap Fund	-38.39%	63.54	59.08	4.46
9	Nippon India Large Cap Fund	-37.77%	66.63	54.70	11.93
10	Mirae Asset Focused Fund	-37.28%	64.05	56.82	7.24
11	SBI Blue Chip Fund	-36.10%	56.54	54.70	1.84
12	ICICI Prudential Large & Mid Cap Fund	-35.62%	77.15	65.15	11.99
13	Motilal Oswal Long Term Equity Fund	-32.91%	60.97	59.08	1.89
14	ICICI Prudential Multicap Fund	-31.88%	68.85	68.36	0.49
15	DSP Top 100 Equity Fund	-31.68%	43.83	54.70	-10.88
16	Mirae Asset Large Cap Fund	-30.69%	51.95	53.83	-1.88
17	Invesco India Multicap Fund	-30.00%	67.96	68.36	-0.40
18	SBI Large & Midcap Fund	-27.68%	66.11	65.15	0.95
19	IDFC Sterling Value Fund	-27.38%	89.47	79.83	9.64
20	HDFC Flexi Cap Fund	-27.27%	74.67	59.08	15.59
21	DSP Tax Saver Fund	-27.25%	66.57	59.08	7.49
22	Kotak Focused Equity Fund	-26.36%	57.61	56.82	0.79
23	L&T India Value Fund	-25.27%	65.66	57.34	8.32

BFS – Banking and Financial Services, Opp. – Opportunities

This table gives full data on the local bias (LB) of all the MF schemes and their corresponding net returns for the year 2021 with only domestic stocks.

Source – Mutual fund return data from AMFI <https://www.amfiindia.com/research-information/other-data/mf-scheme-performance-details>

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
24	Axis Long Term Equity Fund	-25.23%	55.64	57.34	-1.70
25	L&T Emerging Businesses Fund	-24.53%	96.09	89.49	6.60
26	Nippon India Value Fund	-24.46%	70.80	59.08	11.72
27	Quant Active Fund	-24.25%	80.46	68.36	12.10
28	Invesco Smallcap Fund	-23.95%	90.19	87.82	2.37
29	UTI Long Term Equity Fund (Tax Saving)	-22.09%	61.64	59.08	2.56
30	DSP Focus Fund - Regular Plan	-21.11%	44.75	57.34	-12.60
31	Franklin India Bluechip Fund	-20.69%	65.23	53.83	11.40
32	ICICI Prudential Infrastructure Fund	-19.45%	99.02	98.83	0.18
33	UTI Value Opportunities Fund	-18.91%	58.59	59.08	-0.49
34	Kotak Small Cap Fund	-18.89%	99.62	86.83	12.80
35	L&T Tax Advantage Fund	-18.26%	46.51	57.34	-10.83
36	DSP Flexi Cap Fund - Regular Plan	-17.33%	61.27	59.08	2.19
37	SBI Magnum Midcap Fund	-17.13%	78.39	76.92	1.47
38	HDFC Top 100 Fund	-16.70%	60.95	53.83	7.13
39	UTI Mid Cap Fund	-15.61%	68.44	76.92	-8.48
40	Nippon India Focused Equity Fund	-15.29%	76.73	59.44	17.29
41	Edelweiss Smallcap Fund	-14.55%	87.16	90.10	-2.95
42	Franklin India Focused Equity Fund	-14.49%	78.15	59.08	19.07
43	Aditya Birla SL Flexi Cap Fund	-14.44%	59.68	60.54	-0.86
44	Aditya Birla SL Frontline Equity Fund	-13.43%	57.07	53.54	3.53
45	DSP Small Cap Fund	-13.20%	74.49	89.49	-15.00
46	Tata Equity PE Fund - Regular Plan	-12.85%	48.19	51.23	-3.03

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
47	L&T Large and Midcap Fund	-12.56%	43.04	65.15	-22.11
48	UTI Mastershare Unit Scheme	-12.48%	56.47	54.70	1.76
49	Nippon India Growth Fund	-12.41%	77.17	71.42	5.74
50	Kotak Flexi Cap Fund	-12.33%	49.74	56.82	-7.08
51	Mirae Asset Tax Saver Fund	-12.32%	61.35	56.82	4.53
52	Motilal Oswal Flexi Cap Fund	-12.11%	36.23	59.08	-22.85
53	Aditya Birla SL Pure Value Fund	-11.82%	66.05	59.44	6.62
54	Kotak Equity Opportunities Fund	-11.25%	52.82	56.82	-3.99
55	Mirae Asset Midcap Fund	-11.14%	79.26	80.18	-0.92
56	Kotak Bluechip Fund	-10.97%	53.18	53.54	-0.36
57	Kotak Tax Saver Scheme	-9.44%	53.54	59.08	-5.54
58	Quant Small Cap Fund	-9.36%	112.64	90.10	22.54
59	L&T Flexi Cap Fund	-9.09%	48.15	59.44	-11.29
60	Edelweiss Mid Cap Fund	-8.60%	76.70	80.18	-3.48
61	ICICI Prudential Long Term Equity Fund	-7.96%	65.40	59.08	6.32
62	DSP Midcap Fund	-7.84%	50.67	80.18	-29.50
63	UTI Core Equity Fund	-7.42%	74.16	65.15	9.00
64	ICICI Prudential Focused Equity Fund	-7.11%	65.50	59.44	6.06
65	DSP Equity Opportunities Fund	-5.70%	63.05	65.15	-2.10
66	Tata India Consumer Fund	-5.62%	47.36	42.30	5.06
67	HDFC Tax Saver Fund	-3.82%	61.07	59.08	1.99
68	SBI Healthcare Opportunities Fund	-3.78%	27.09	30.74	-3.66
69	ICICI Prudential MidCap Fund	-3.72%	74.07	76.92	-2.85
70	PGIM India Midcap Opportunities Fund	-3.52%	90.73	80.18	10.55

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
71	Invesco India Contra Fund	-3.15%	56.33	59.44	-3.11
72	HDFC Capital Builder Value Fund	-3.03%	61.06	59.08	1.98
73	Franklin Build India Fund	-2.92%	88.42	98.83	-10.42
74	Kotak Emerging Equity	-2.81%	71.17	80.18	-9.01
75	HDFC Mid-Cap Opportunities Fund	-2.53%	67.52	80.18	-12.66
76	Aditya Birla Sun Life Midcap Fund	-2.42%	75.21	80.18	-4.97
77	IIFL Focused Equity Fund	-2.37%	62.35	57.34	5.01
78	Tata Small Cap Fund	-2.16%	93.39	86.83	6.56
79	Baroda Multicap Fund	-2.05%	75.78	68.36	7.42
80	Mirae Asset Healthcare Fund	-1.76%	33.42	30.74	2.67
81	Aditya Birla Sun Life Equity Advantage Fund	-1.34%	64.97	65.15	-0.19
82	Aditya Birla SL Small cap Fund	-1.25%	79.63	86.83	-7.20
83	IDFC Emerging Businesses Fund	-1.15%	80.69	87.82	-7.13
84	HDFC Small Cap Fund	-0.77%	94.09	86.83	7.26
85	Nippon India Power & Infra Fund	-0.63%	80.67	63.71	16.96
86	Tata Mid Cap Growth Fund	-0.62%	64.08	80.18	-16.10
87	Axis Small Cap Fund	-0.24%	73.83	86.83	-13.00
88	Mirae Asset Great Consumer Fund	0.00%	54.37	42.30	12.06
89	Nippon India Tax Saver Fund	0.48%	69.82	57.34	12.47
90	BNP Paribas Midcap Fund	0.61%	72.27	76.92	-4.66
91	IDFC Tax Advantage (ELSS) Fund	0.66%	80.19	57.34	22.84
92	Nippon India Small Cap Fund	1.32%	94.80	90.10	4.69
93	Invesco India Tax Plan	1.76%	57.28	57.34	-0.07
94	Tata India Tax Savings Fund	2.57%	55.86	51.23	4.63

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
95	Mirae Asset Emerging Bluechip Fund	2.66%	65.59	65.15	0.44
96	Sundaram Diversified Equity	2.82%	61.21	59.08	2.13
97	Sundaram Select Focus	3.28%	62.77	57.75	5.02
98	Axis Flexi Cap Fund	3.48%	55.12	59.08	-3.96
99	Motilal Oswal Focused 25 Fund	3.48%	40.51	53.54	-13.03
100	Franklin India Taxshield Fund	3.75%	69.53	59.08	10.45
101	Nippon India Pharma Fund	4.66%	34.85	30.74	4.11
102	Franklin India Prima Fund	4.94%	63.68	76.92	-13.24
103	Canara Robeco Small Cap Fund	5.52%	92.52	90.10	2.41
104	L&T Midcap Fund	5.99%	51.87	80.18	-28.31
105	Nippon India Vision Fund	6.12%	62.39	65.15	-2.76
106	Franklin India Equity Advantage Fund	7.54%	73.63	65.15	8.47
107	LIC MF Large & Mid Cap Fund	7.69%	54.83	65.15	-10.32
108	HDFC Large and Mid Cap Fund	7.82%	77.60	65.15	12.45
109	Franklin India Smaller Companies Fund	7.90%	86.56	90.10	-3.55
110	Sundaram Large Midcap Fund	8.08%	63.83	65.15	-1.32
111	DSP Quant Fund	8.67%	51.41	57.34	-5.94
112	L&T Infrastructure Fund	9.34%	86.76	63.71	23.05
113	Invesco India Mid Cap Fund	10.30%	65.21	80.18	-14.97
114	Canara Robeco Equity Tax Saver	11.19%	59.09	54.70	4.38
115	ICICI Prudential Smallcap Fund	11.52%	94.59	90.10	4.49
116	UTI Infrastructure Fund	11.82%	73.11	63.71	9.40
117	Sundaram Midcap Fund	12.32%	62.82	80.18	-17.36

S No	Name of the Mutual Fund Scheme	Local Bias - Equal Wt.	Return 1 Year (%) Portfolio	Return 1 Year (%) Benchmark	Net Return – Portfolio (%)
118	SBI Long Term Equity Fund	13.13%	58.39	59.44	-1.05
119	Franklin India Flexi Cap Fund	13.28%	73.70	59.08	14.62
120	Axis Bluechip Fund	14.40%	47.70	53.54	-5.84
121	Motilal Oswal Midcap 30 Fund	14.55%	71.65	80.18	-8.53
122	Canara Robeco Flexi Cap Fund	14.94%	54.89	59.44	-4.55
123	IDFC Flexi Cap Fund	14.98%	53.39	59.44	-6.05
124	UTI MNC Fund	15.31%	39.87	36.93	2.93
125	Axis Focused 25 Fund	16.78%	55.81	53.54	2.27
126	Tata Large & Mid Cap Fund	17.11%	52.28	65.15	-12.88
127	IDFC Large Cap	18.93%	46.88	54.70	-7.82
128	Canara Robeco Emerging Equities	19.25%	61.44	65.15	-3.72
129	Invesco India Focused 20 Equity Fund	19.65%	59.60	59.44	0.16
130	Axis Midcap Fund	20.48%	63.28	71.42	-8.15
131	BNP Paribas Large Cap Fund	20.66%	48.21	53.54	-5.33
132	IDFC Focused Equity Fund	21.46%	37.58	59.44	-21.86
133	UTI Master Equity Plan Unit Scheme ELSS	21.54%	53.69	54.70	-1.01
134	Canara Robeco Bluechip Equity Fund	21.90%	50.16	54.70	-4.54
135	Aditya Birla SL Focused Equity Fund	22.58%	53.76	53.54	0.21
136	IDFC Core Equity Fund	24.22%	58.68	65.15	-6.47
137	Invesco India Growth Opportunities Fund	26.37%	50.45	62.08	-11.62
138	Tata Large Cap Fund	33.70%	60.34	51.23	9.11
139	Aditya Birla Sun Life Tax Relief 96	35.09%	33.77	57.34	-23.57
140	Aditya Birla Sun Life India GenNext Fund	35.76%	59.94	59.44	0.50
141	Aditya Birla Sun Life MNC Fund	42.56%	26.32	36.93	-10.61
142	ICICI Pru Pharma H'care and D'nostics (P.H.D) Fund	45.20%	29.92	30.74	-0.82

4.5. Examine the Theoretical Premise of the Study

As already mentioned in the theoretical premises of this research, there are models to show that distance is a proxy for information asymmetry. The theoretical models by Portes and Rey (2005) which is similar to the gravity model for international trade shows that international equity flow and equity holdings are inversely related to distance and the empirical findings have strongly supported this model in the past. Although this model is used for overall portfolio equity flows between two countries, an interpretation of this model showing an inverse relationship between portfolio flows and distance is examined in the current study in a limited sense for equity mutual funds in India.

As evident in tables 4.30 and 4.31, in the post-Covid period, investment in foreign stock by mutual funds in India increased both in absolute terms and as a percentage of AUM. Correspondingly, the average distance of the portfolio and negative local bias have also increased (suggesting investment in farther locations). These empirical results show that distance and equity flow do not follow an inverse relationship in the post-Covid period. This finding is contrary to the existing theoretical models and is an important contribution of the current study and suggests further analysis of the reasons for this change.

Table- 4.30: Comparison of Distance and Investment in Foreign Stock – Equal Weight

Year	Portfolio	Avg. Dist. - Portfolio (in km)	Local Bias	IFS	IFS/AUM %
2013	Total Holding - Equal Wt.	621	-15%	6	0.40%
2019	Total Holding - Equal Wt.	595	-26%	14	0.21%
2021	Total Holding - Equal Wt.	729	-48%	167	1.41%

Tables 4.30 and 4.31 compares the average distance of the portfolio with the total investment in foreign stock by equity mutual funds in India. The total investment in foreign stock is shown both in absolute terms and as a percentage of the total AUM. Another measure is the local bias (LB) as an indicator of relative distance and compares it with foreign stock investment (IFS).

Table 4.30 makes the comparison between the three periods by taking the local bias (LB) – equal weight, which means equal weightage is given to all the mutual funds.

Source – Calculated and summarised from the LB calculation tables 4.1

Table- 4.31 – Comparison of Distance and Investment in Foreign Stock – Value Weight

Year	Portfolio	Avg. Dist. - Portfolio (in km)	Local Bias	IFS	IFS/AUM %
2013	Total Holding - Value Wt.	598	-13%	6	0.40%
2019	Total Holding - Value Wt.	540	-15%	14	0.21%
2021	Total Holding - Value Wt.	720	-49%	167	1.41%

*IFS – Investment in Foreign Stock – Rs.in Bn

Table 4.31 makes the comparison between the three periods by taking the LB-value weight which means each mutual fund scheme is given weightage based on the respective assets under management (AUM) of the scheme relative to the total AUM of equity mutual funds considered for this study for a particular year.

Source – Calculated and summarised from the LB calculation tables 4.1

Further, theoretical research on economic crises and capital flows shows that during crisis periods or economic shocks, investors tend to invest in the familiar which increases the equity home bias phenomenon. These research studies suggest that during the economic crisis, investors generally reduce their foreign portfolio holdings. The Covid-19 pandemic was also an economic crisis compares the home bias phenomenon of mutual funds in India before and after Covid-19. The empirical results of this study show that investors increased their investment in foreign stock during Covid-19 (Tables 4.30 and 4.31). Larger investment in foreign stocks suggests a trend contrary to what earlier studies suggest. The outcome of this study is also an important contribution to further analyse the theoretical models in the current context of Covid-19.

4.6. Chapter Conclusion

On calculating the local bias (LB) for the years 2013, 2019 and 2021, it is found that there was no local bias in 2013, suggesting that the average distance of the portfolio and the benchmark were not significantly different. However, by 2019, there is a negative local bias which is statistically significant suggesting that fund managers invested in farther locations compared to the benchmark. By 2021, the extent of negative local bias became much larger (negative 49%) indicating that the mutual fund managers were investing 49% farther from the benchmark. When only domestic stocks are considered, even then the negative LB marginally increased from 2013 to 2021 which suggests that mutual funds gradually increased the proportion of stocks which were in farther locations domestically. These results in post-Covid scenario suggest that investment decisions of mutual fund managers (who invest mainly in listed companies in India) are guided by factors other than distance. Further, the findings show that during Covid (an economic crisis) the MFs invested farther away from the benchmark and diversified internationally. This is contrary to the existing studies which suggest that investors under-diversify and reduce their foreign investments during economic crises.

In the second part of the study, it is found that, unlike earlier researches in which the local bias is less for companies with larger market capitalization, the empirical results of the current study indicate an absence of local bias (or proximity preference) in all categories irrespective of the size of the companies in which mutual funds invest. One of the interpretations of this result is that the information asymmetry in listed companies as a whole is not quite relevant in equity mutual funds in India.

Finally, when the local bias (LB) is compared with the net returns of various mutual funds schemes for two periods - pre-Covid (2019) and post-Covid (2021), the results are contrasting. The results of 2019 suggest that when fund managers invest in closer locations, the net returns generated are positive whereas they generate negative net returns when investing in a distant location. However, in 2021, it is seen that mutual funds which invested in farther locations have generated abnormally high net returns. These results indicate that after Covid, fund managers have been able to generate better net returns by investing in farther locations.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1. Overview

This chapter discusses the major findings of the study in the context of existing literature. Section 5.2 summarises the findings of this study and gives concluding remarks. Section 5.3 gives the literature and theoretical contributions of the study by comparing the results with the existing theoretical models. This section also gives the contribution to the literature in the form of its pioneering work in calculating the local bias of equity mutual funds in India. Section 5.4 briefly presents the implications of the study for important stakeholders of mutual funds in India. Section 5.5 briefly discusses the limitations of this study and Section 5.6 explores the possible future areas of research based on the results of this study.

5.2. Discussion and Conclusion

According to the modern portfolio theory, an optimal portfolio can be created by diversifying assets or securities in a portfolio and holding assets with low or negative correlation. The existence of a relatively high degree of positive correlation within an economy indicates limits to mitigating risk by diversification. This suggests that risk reduction might be facilitated by diversifying securities portfolios internationally. In an optimum portfolio, investors should hold a set of well-diversified securities in which the proportion of domestic assets is proportional to the country's share of world market capitalisation. However, empirical studies show that despite the benefits of international diversification, investors have a strong preference for domestic equities compared to the international market which is referred to as home bias or equity home bias. When the same phenomenon manifests as a preference to invest higher proportion in assets located close to the investor within domestic boundaries, it is referred to as local bias. Since the cause and effect of both home bias and local bias are similar, the terms home bias, equity home bias, local bias, location bias and location preference are used interchangeably in this study to represent proximity preference. Of the many reasons offered to explain this bias, the one that has extensive empirical support is the informational difference (or information asymmetry) between foreign and domestic investor. This informational difference in international portfolio investment holds good even in the domestic context.

However, later studies suggest that the phenomenon of home bias among various categories of investors has been reducing in the last few decades due to financial globalisation. Financial globalisation refers to an economic environment of liberalized capital movement, less transaction cost, speed of transaction fostered by electronic trading etc. but one of the critical aspects of financial globalization is increased access to information both within and across borders. Extensive use of information technology coupled with a reduction in communication costs has improved access to information in the last few decades across the globe.

Unlike in advanced economies, studies on the home bias or local bias phenomenon in an emerging economy like India have been limited. Given the growth and importance of emerging economies like India and the fast-expanding Indian equity mutual fund (MF) sector, it is important to study the local preference among mutual fund managers. However, despite the growth, size and importance of India and its mutual funds sector, there is no study available especially on the home bias or location preference of Indian equity mutual funds.

Moreover, during Covid-19, prolonged lockdowns in various parts of the world saw increased usage of information technology, resulting in the proliferation of digital communication technology and internet infrastructure in all walks of life. In India, all forms of information dissemination by listed corporates viz. quarterly results, investor presentations, annual general body meetings, outcomes of board meetings etc. were increasingly being done digitally, resulting in the transformation of traditional paper-based information and in-person engagements to online content and digital communication. One study highlights that Covid-19 has possibly led to a proliferation of remote communication technology which may have resulted in a reduction in the levels of informational asymmetry, prompting venture capital investors to invest in firms and businesses that are farther from their location. Further, IIP data from the RBI shows that during Covid-19, there was an increase in foreign investment by equity investors in India, suggesting a reduction in equity home bias. Thus, initial studies and data points suggest a reduction in equity home bias, which in turn suggests that the explanatory power of distance as a proxy for information asymmetry may have reduced.

There are also studies that show that during crisis periods or economic shocks, uncertainties compel investors to invest in the familiar local financial assets which accentuates the equity home bias phenomenon. Some studies have shown that economic shocks and uncertainties like the global financial crisis of 2008 induced investors to liquidate their foreign investments and bring money back to the domestic markets. But as mentioned earlier, during this economic

crisis, i.e. Covid-19, foreign equity asset ownership in India increased suggesting diversification away from home. Given this backdrop, the current study examines the proximity preference in mutual fund portfolio choice in India in recent times (post-Covid). It also carries out a comparative study to examine the change in local bias phenomenon in mutual fund portfolios for the pre-Covid and post-Covid periods (2013, 2019 and 2021).

This study defines home bias or local bias as the fund manager's preference for local stocks compared to a pre-specified benchmark (or market portfolio or benchmark index). This is a well-established methodology that has been used in various studies relating to the home/local bias phenomenon in mutual funds. This pioneering study on local bias in Indian MFs is done by examining a total of 400 mutual funds – which is 90% of the total AUM of MFs in India – across three time periods (2013, 2019 and 2021). The location and distance of over 1000 listed Indian companies are **calculated** in this study.

On calculating the local bias (LB) for 2013, 2019 and 2021, it was found there was no local bias (-13%) in 2013, suggesting that the average distance of the portfolio and the benchmark were not significantly different. However, by 2019, there was a statistically significant negative local bias (-15%), suggesting that fund managers invested in locations farther from the benchmark. By 2021, the extent of negative local bias became much larger (-49%) which is more than thrice the LB of 2019. This shows that mutual fund managers were investing 49% farther from the benchmark. This drastic increase in negative local bias (which means MFs investing in farther locations) was mainly due to an increase in foreign stock investment by MFs. These findings suggest that distance as a proxy for information asymmetry has less explanatory power in the current context.

When only domestic stocks are considered, the negative LB marginally increased from 2013 to 2021, which suggests that mutual funds gradually increased the proportion of stocks that were located farther domestically. These results further reaffirm that in the post-Covid period, investment decisions of mutual fund managers (who invest mainly in listed companies in India) are guided by factors other than distance. Further, the findings show that during Covid (an economic crisis) the MFs invested farther away from the benchmark and diversified internationally. This is contrary to the existing studies that suggest investors under-diversify and reduce their foreign investments during economic crises.

In the second part of the study, it is found that unlike earlier researches in which the local bias is less for companies with larger market capitalization, the empirical results of this study show an absence of local bias (or proximity preference) in most categories from 2013 to 2021 irrespective of the size of the companies in which mutual funds invest. This suggests that the size of the company offers no information-related advantage for fund managers. These results also suggest that the investment decisions of mutual fund managers (who invest mainly in listed companies in India) are guided by factors other than distance.

Finally, when the local bias (LB) is compared with the net returns of various mutual fund schemes for two periods – pre-Covid (2019) and post-Covid period (2021) – the results are contrasting. The results of 2019 suggest that when fund managers invest in closer locations, the net returns generated are positive. These findings are consistent with earlier studies which found that fund managers generate higher returns by investing in companies closer to their offices. Existing literature links local bias to information advantage for the proximate fund managers, leading to better returns. However, in the post-Covid period (2021), it is found that mutual funds which invest in farther locations generated abnormally high net returns and funds that invested close to home (closer than the benchmark), generated a negative net return. These results indicate that during the pandemic fund managers were able to generate better net returns by investing even in farther locations. This implies that proximity which earlier resulted in informational advantage no longer seem to be a significant factor in the post-Covid 19 period.

Although this study has examined the local bias before and after Covid-19 for Indian mutual funds, it has not analysed the reasons for the shift in home bias. There could be many reasons for this change, viz. easy monetary policy and liquidity conditions leading to low-interest rates, information technology bridging the informational difference and improving commerce, stock market performance of various markets, country-specific idiosyncratic factors, industry-specific idiosyncratic factors, and so on. The increased use of information technology during Covid-19 is only a motivation for this study and not a conclusion. Analysing the reasons for the change in the home bias or local bias phenomenon during Covid-19 can be an interesting future area of study.

5.3. Contribution to Literature

This study makes a modest contribution to the literature relating to the home bias phenomenon. It offers a measure of the local bias of equity mutual funds in India. While home bias has been extensively studied across various geographies, the home bias phenomenon in mutual funds in India has not been researched before. This study assumes importance in the current context where India's weightage among emerging markets has grown significantly in the post-Covid period and the fast growth in equity mutual funds in India. By comparing the local bias during pre-Covid and post-Covid periods, this study also contributes to the literature on the investment behaviour of fund managers in an emerging market like India in the backdrop of the pandemic.

The study also compares the performance of mutual funds vis-a-vis local bias and shows that funds which invested farther away from the benchmark performed well and gave abnormal net returns to the investors in the post-Covid period. Given the fact that there has been no country-specific study on India comparing the returns generated by mutual funds and local bias, this study contributes in this regard.

5.4. Theoretical Contribution of the Study

As already mentioned in the theoretical premises of this research, there are theoretical models to show that distance is one of the proxies for information asymmetry. The theoretical model by Portes and Rey (2005) is similar to the gravity model for international trade. According to this model, international equity flow and equity holdings are inversely related to distance and empirical findings have strongly supported this model in the past. Although this model is used for overall portfolio equity flows between two countries, an interpretation of this model showing an inverse relationship between portfolio flows and distance is examined in a limited sense for equity mutual funds in India. This study finds that distance and equity flow do not show an inverse relationship in the post-Covid period.

During the pandemic, investment in foreign stocks by mutual funds in India increased both in absolute terms and as a percentage of AUM. Correspondingly, the average distance of the portfolio and negative local bias has also increased (suggesting investment in farther locations). These empirical results show that distance and equity flow do not follow an inverse relationship in the post-Covid period. The empirical result being contrary to the existing

theoretical model is an important contribution and suggests the need for further analysis to find the reasons for this change.

Theoretical research on economic crises and capital flows shows that during crisis periods or economic shocks, investors tend to invest in the familiar local investments, which increases the equity home bias phenomenon. These research studies suggest that during economic crisis, investors reduce their foreign portfolio holdings. The Covid-19 pandemic was also an economic crisis and the current study on local bias of mutual funds in India compares the home bias phenomenon before and after Covid-19. The empirical results of this study show that investors increased their investment in foreign stock during Covid-19. Larger investment in foreign stocks suggests a trend contrary to what earlier studies suggest. The outcome of this study is also an important contribution to further analyse the theoretical models and reasons for the contrary trend in the context of Covid-19.

5.5. Practical Implications of the Study

Since this study is an analysis of equity mutual fund schemes in India, one of the practical implications of this study is its contribution to various stakeholders of MFs. The stakeholders include the regulator, mutual fund houses or fund managers and investors who invest in mutual fund schemes. One of the practical implication of this study for all the stakeholders of MFs is providing a numerical measure of geographical diversification by calculating the local bias for every equity mutual fund scheme in India. This is one way of informing the stakeholders about the extent of geographical diversification. After Covid, geographical diversification has become even more important given location-specific spread of the disease and lockdowns which impact local economies. Geographical diversification of stocks helps in mitigating the risk of concentration of stocks that have their businesses in the same location where lockdowns are imposed. Also, geographical diversification both at the domestic and international levels helps investors in diversifying the risk emanating as a result of the high degree of positive correlation within sectors, geography and economy.

Financial globalisation has resulted in a reduction in information asymmetry, which in turn has reduced home bias in the last few decades in various parts of the world. Hence, another practical implication of this study for the stakeholders, especially the regulator is to assess the effectiveness of various developmental initiatives of the government to liberalize and

develop the financial market. These developmental measures will help in reducing information asymmetry which in turn will lead to a further reduction in local bias.

The main concern of investors/fund managers is the risk and return dynamics of any mutual fund scheme. This study compares the extent of local bias with the returns generated by the mutual funds in India, thus giving vital inputs on the performance of various MF schemes vis-à-vis the local bias of each scheme before and after Covid-19. The results of this study indicate that during the pandemic fund managers were able to generate better net returns by investing even in farther locations.

5.6. Limitations

In this study, local bias is the difference in the average distance of the benchmark and actual portfolio as a percentage of the average benchmark distance. As per regulatory guidelines, although each MF has a benchmark index as a reference, it is allowed some flexibility to invest outside the benchmark and can also invest a small portion of funds in foreign stocks. Hence, the benchmark index for each MF is at best indicative and may not be a perfect reference point for comparison. However, the benchmark remains the closest reference point to measure the local bias. This is one practical limitation of the current study.

While this study has examined the home bias before and after Covid-19, it has not analysed the reasons for the shift in the same. The scope of this study is limited to measuring and comparing the local bias of equity mutual funds in India in the pre and post-Covid period. There could be many reasons for this change in home bias during Covid-19 viz. easy monetary policy and liquidity conditions leading to low interest rates, information technology bridging the informational difference and improving commerce, stock market performance, country-specific idiosyncratic factors, industry-specific idiosyncratic factors, and so on. Increased use of information technology during Covid-19 is only a motivation for this study and not a conclusion of it. Hence, finding the reasons and factors which resulted in the shift in home bias during Covid-19 is another limitations of this study.

5.7. Future Research

1. The limitation of this study in finding the reasons and factors accounting for the shift in home bias during Covid-19 suggests interesting future areas of research. Economic researchers can examine the reasons for the shift in home bias during Covid-19 and study some of the factors independently, like digital communication technology, monetary and fiscal policy measures, interest rates, stock market performance etc. for their impact on the home bias phenomenon. These analytical studies can help identifying the leading factors that may have contributed to the change in home bias during Covid-19.
2. Given the empirical results of this study where we find that despite the economic crisis, foreign stock investments increased in India, future studies can explore the reasons why despite the economic crisis, investments flowed to international locations contrary to earlier studies.
3. Since the local bias for mutual funds of an emerging economy like India in a post Covid-19 economic order is found to be negative in this study, one of the future areas of research can be to revisit the study of home bias/local bias for a set of advanced and emerging economies to find out whether the home bias trend has significantly changed after Covid-19.
4. Another areas of research can be to examine whether the same trend of negative local bias is relevant for unlisted companies like venture capital financed firms.

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