



Analyzing the Literature on Stock Returns

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Abstract

The primary goal of investment is to generate returns, which comprise dividends and capital appreciation from stocks. These returns are influenced by both systematic and unsystematic risks, encompassing macroeconomic variables and firm-specific factors, respectively. The study of stock returns has attracted considerable interest among research scholars over the past 15 years, spanning the period from 2000 to 2014 and encompassing 63 different journals. This analytical study conducts a content analysis of literature on stock returns, extracting information from 368 research papers. The findings reveal a significant volume of research conducted worldwide on stock returns during this period, yielding positive results. The analysis covers various factors such as predictability/forecasting of stock returns, volatility/variability of stock returns, and their relationship with inflation. These insights are anticipated to benefit stock exchanges, regulators, government agencies, and other stakeholders. Notably, predictability/forecasting, volatility/variability, and risk and liquidity aspects of stock returns have emerged as the primary focus areas for researchers over the past 15 years.

Keywords: Stock returns, Volatility, Stock Exchanges, Regulators, Forecasting Stock Returns

Introduction

In stock market, the investors' invest their savings with an expectation of earning some income. This income may be termed as "stock returns" which may be in the form of profits earned from trading of shares or the dividends received. These dividends may be paid to the shareholders out of the profits earned; may be quarterly, half yearly, yearly, etc. The stock prices or returns are bound to be affected by various risks occurring within a country and also events occurring across the world.

Stock returns are very sensitive to political unrest in the country, economic crises, natural disasters like earthquake, cyclones, floods movements in international oil prices, inflation effects, changes in Government policies, norms and regulations and so on.

It is known that stock prices or returns follow a random walk. It is a difficult task to predict or forecast the future returns. Many researchers have shown interest in the area of prediction or forecasting of stock returns and popular models used for such studies include ARIMA (Autoregressive Integrated Moving Average). The present study will highlight on some of these studies. Also as said earlier, stock prices or returns are affected by economic events. Hence it becomes evident to study the volatility of stock returns. Stock returns volatility has also been an area of interest for many researchers for past several years. The various econometric models used to analyze this volatility include ARCH, GARCH, TAR, EGARCH and similar models. Some of these studies relating to volatility of stock returns will be emphasized in the present study. The analysis of the factors which have been the area of interest for many research scholars are explained in detail in this paper.

Review of Literature

The stock returns is an area of study wherein many research scholars have shown immense interest for past several years. A brief review of literature will help in understanding the relevance of the content analysis in the area of stock returns.

The researches in social sciences or in the field of economics depend in one way or the other on careful reading of written materials and the research work done by many research scholars on similar subjects. Considering this fact, the importance of content analysis becomes very significant.

Barelson (1952) defined content analysis as a technique of research that is systematic representation of the matter of communication. According to Stone (1964), the content analysis is a methodology or procedure which can be used to access particular information based on the past references. The definition of content analysis requires that the inference be derived from the counts of frequency to place a number of standard methods on the borderline of acceptability (Leites & Poo, 1942).

The various areas to which the technique of content analysis can be applied is based on the users skill and ingenuity in framing valid category formats as discussed in the research conducted by Chelimsky (1989). The content analysis was also performed by Wisniewski and Yekini (2014) to predict the stock returns based on content of annual reports narrative. The computational linguistics tool was used by the researchers to study the qualitative aspect of the annual reports of the

companies listed in United Kingdom. The paper concluded that the investors should pursue the annual report narrative because it may contain the information which has not yet discounted in the share prices. Skjeltop and Odegaard (2009) investigated the information content of stock market liquidity. The researchers also evaluated the forecasting power of market liquidity. The stock returns are influenced by variety of factors and the research scholars have shown interest to study these factors in detail. A content analysis of the literature will help us to understand the key issues which gained more attraction from the research scholars and identify the area which require more research work.

Research Gap

The previous studies which involved analysis of literature primarily focused on either using qualitative or quantitative tools for analysis. The present study is one of its kinds which involved using both the qualitative as well as quantitative measures for analyzing the literature relating to stock returns. The important determinants or factors of stock returns are analyzed first qualitatively using the abstracts, introduction, literature review, methodology, analysis and conclusions of the selected 368 research papers. Further analysis has been performed using frequency, counts and percentages to find out the other important aspects like appearance in journals, number of authors, and contribution of authors country-wise and appearance of authors in the select research papers.

Contribution of the Study

The present study involves identification of factors or determinants of stock returns. The study will indeed help many researchers and academicians to identify various research gaps relating to stock returns. The paper provides the analysis based on journals which will help the researchers to identify key journals which they can refer for literature review, identify factors influencing stock returns and can publish their quality research papers. The study also recognizes the country-wise contribution of authors.

Objectives of the Study

1. To identify the determinants of stock returns on which considerable research work is done in past 15 years.
2. To analyze the literature on stock returns using qualitative and quantitative measures.

Research Design and Methodology

The current study sourced the research papers relating to 'stock return' from 63 journals, i.e., European Economic Review, Journal of Empirical Finance, Journal of Monetary Economics, Journal of Banking And Finance, Journal of International Money And Finance, International Review of Financial Analysis, Journal of Economic Theory, Pacific Basin Finance Journal, Global Finance Journal, Scandinavian Journal of Management, International Review of Economics And Finance, Forest Policy And Economics, Journal of Financial Economics, Economic Letters, Journal of Econometrics, Journal of Multinational Financial Management, Journal of Economics And Business, Emerging Markets Review, International Journal of Forecasting, Quarterly Review of Economics And Finance, Review of Financial Economics, Research in International Business and Finance, Journal of International Financial Markets, Institutions and Money, Technology Forecasting and Social Change, Energy Economics, Knowledge Based Systems, Exploration in Economic History, Neurocomputing, Journal of Economic Behaviour and Organisation, Physica A, and North American Journal of Economics and Finance, etc

Altogether 368 research papers were selected for the purpose of analysis and review. The selection of research papers were on the basis of the key issues. The different key issues or the factors were analyzed and presented in count and percentages. A detail examination of each of the key issue was conducted in order to get important research work done with respect to 'stock returns'. The information was further individually examined to obtain the information of journals consisting the research papers related to 'stock returns', number of research scholars and contribution by various research scholars: country-wise. For the purpose of the study, the select research papers were obtained from the internationally acclaimed website in the area of research "Science Direct".

Analysis and Interpretation Identification of Key Issues related to Stock Returns

For the purpose of analysis, key issues or factors relating to stock return are identified on which a significant research work is done by research scholars for last 15 years. The identified key issues are:

1. Predictability and Forecasting
2. Volatility and Variability
3. Inflation
4. Risk and Liquidity
5. Oil Price Moments/Shocks
6. Cross-section and Correlation
7. Other issues

From the below depicted Figure 1, it is seen that volatility/variability of stock return and predictability/ forecasting of stock return has been an area of interest for many research scholars each consisting 31% and 25% respectively. Similarly the research is growing in the area of risk and liquidity (19%) stock returns. But considerable research still needs to be done in the area of inflation, oil price moments/shocks, cross-section and correlation studies with respect to stock returns which account for mere 6%, 8% and 3% respectively.

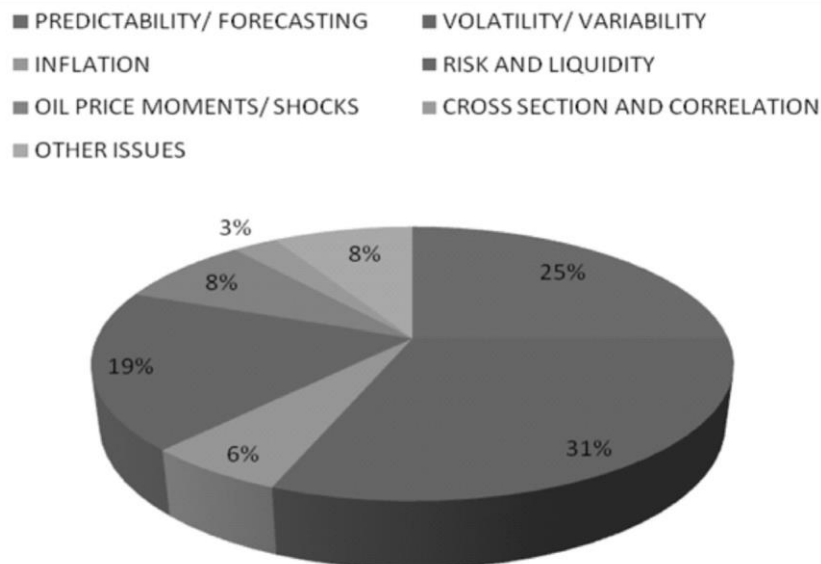


Figure 1. Pie chart showing the areas of research during the last 15 years

The detailed analysis of each of these key issue/factors is as follows:

Predictability and Forecasting. Predictability or Forecasting of stock returns is an area where many researchers have shown interest for past several decades. Out of the 368 research papers analyzed relating to stock returns, the study found that 25% are related to the predictability. The interpretation based on these research papers is as follows:

Research scholars use different models to analyze the result predictability. The Bayesian model used by Avramov (2002) shows the importance of model uncertainty. It was argued in the paper that the investors who don't consider model uncertainty, face large risks and losses. Also the study found the use of conventional tests for the predictability of stock returns (Campbell & Yogo 2006). Schrimpf (2010) examined the predictability of stock returns.

The momentum of stocks rely heavily on how much the investor is holding and the returns such predicted depend on the variation as found in study conducted by Avramov and Chordia (2006). The predictability of stock returns has always been at the center of asset pricing research. Analysis of mean variance was used by Wei and Zhang (2003) to investigate the statistical and economic significance of stock return predictability and it was concluded that the return predictability is not inconsistent with rational asset pricing. Also asset pricing model was used by Rodriguez, Restoy, and Pena (2002) to examine the stock return predictability.

Li, Huang, Deng, and Zhu (2014) incorporated the information quantitatively in order to improve the prediction/forecasting accuracy of stock returns. A study conducted by Paresch Kumar, Seema, and Thuraisamy (2014) on the predictability/forecasting of stock returns found that the investors from promising markets, can make noteworthy profits from vibrant trading strategies. It also showed that if short-selling were allowed, investors could make significant gains. Zhu (2013) investigated the function of perpetual learning in forecasting of excess stock returns. The forecasting of stock returns using macro-economic variables was examined by Rapach, Wohar, and Rangvid (2005) in 12 industrial countries. It was concluded in the study, that among micro variables studied, the most dependable and unflinching predictors of stock returns are interest rates.

An emergent area of empirical finance research is estimation of non-linear dynamics in equity returns (McMillan, 2007). Another study conducted on predictability with a dynamic non-linear model (Bradley & Jansen, 2004) concluded that for stock returns, the models which are better than non linear models are linear models, while for analyzing or studying the development or growth in industrial production, the models which can be preferred are non linear models. Linear and non-linear artificial neural network (ANN) models were implemented to generate the out of sample competing forecasts for monthly returns (Konas & Yannopoulos, 2001). Also Mcmillan (2001) found that stock returns can be forecasted from a variety of variables in the nature of financial or microeconomic. Zhu and Zhu (2013) introduced a regime-switching combination approach to predict excess stock returns. The findings revealed that two-regimes are related to the business cycle. Based on the business cycle explanation of regimes, excess returns are found to be more predictable during economic contractions than during expansions. The study also provided insights on the economic sources of return predictability.

Cooper, Jackson, and Patterson (2003) examined the bank returns predictability in the sector of financial service. Duan, Liu and Zeng (2013) explored a new forecasting approach which is based on the recommendations of behavioral analysts. Hendershott and Seasholes (2014) examined the trading behavior of specialists and market makers using New York Stock Exchange data. To test for return predictability, their study sorted the stocks and formed long-short portfolios. Kim and Kim (2014) examined whether sentiments have forecasting influence on stock returns. The study found no such evidence. Also, present study found studies relating to predictability/forecasting of Chinese stock markets (Chen, Kim, Yao & Yu, 2010), predictability/forecasting of UK stock returns (Fletcher & Hillier, 2002) and forecasting of stock returns of Japan (Hartmann & Pierdzioch, 2007) which provided a significant contribution in this area.

Volatility and Variability. Volatility or variability of stock returns has also been an area of interest for many research scholars for last 20 years. The study found that 31% of the selected research papers are related to the study of stock return volatility or variability. A study was conducted by Umutlu, Akdeniz, and Alttay-Salin (2010) to find out whether the volatility of stock returns is affected by the financial liberalization. The results showed that with the increase in financial liberalization, the volatility of stock returns decreases. Moore and Wang (2007) investigated the variability in stock returns for the new member states of European Union (EU). The study reveals an inverse tendency between EU and volatility regimes. Also the study found the construction of different models by research scholars like ARCH, GARCH, EGARCH, GJR, Dummy Variable Approach and other volatility models while examining the volatility of stock returns (Blair, Poon & Taylor, 2001; Yeh & Lee, 2000; Chaung, Liu & Susmel, 2012; Gardeazabal & Regulez, 2004; Ma & Serota, 2014. Hsin Guo Tseng and Luo (2003) examined the impact of speculative trade on volatilities of stock returns. The study found a significant positive impact of such speculative trade on the volatilities of stock returns. Leeves (2007) investigated the stock returns in the presence of conditional volatility. A study on regimes of exchange rate and stock returns variability was conducted by Bailey, Mao and Zhong (2003). The other areas related to volatility of stock returns explored by research scholars are terrorism, R & D investments, dually-traded stocks, incomplete information, earnings announcements, etc. Essaddam and Karagianis (2014) investigated the interplay between terrorism and finance, focusing on the stock return volatility of American firms targeted by terrorist attacks. The results showed that despite significant terrorist events on past decade, stock markets in developed countries have not taken terrorist risk into sufficient consideration. A study conducted by Eilifsen, Knivsflo and Sættem (2001) found that there is no significant difference in underlying business variance or the adjustment coefficients of price with relation to earnings announcement by companies. The results of the study suggested that the companies forming the part of high tech industries reveal high variability stock returns (Gharbi, Sahut & Teulon, 2013).

The stock returns analyzed by a statistician or econometrician will be different from those which are forecasted when the investors have incomplete information, (Berrada & Hugonnier, 2013). They constructed a new variable that examines a noteworthy part of the empirical relation between the variability and the stock returns. The present study also found a similar research paper which studied the impact of variability in stock returns (Khovansky & Zhylyevskyy, 2013). The paper proposed a new insight out in the estimation the variability of returns.

Inflation. The inflation being an important and critical factor which almost affects all economies across the world, have been an area of interest for many research scholars across the globe. Many researchers have taken keen interest in analyzing the relation or impact of inflation on the stock prices or the returns generated thereof. Alagidede and Panogiotidis (2012) examined the stock returns-inflation relation for G7 countries and found the positive relationship for the countries like UK and Italy. Boucher (2006) estimated a long term trend of inflation with stock returns perspective. Gallagher and Taylor (2002) evidenced the explanation of inflation puzzle in the United States. Similar studies like that of Kim (2003) studied the inflation puzzle and stock returns. The association between inflation and stock returns is influenced by regimes of monetary policy and the demand and supply risks (Du, 2006). An implication of the monetary policy committee (MPC) framework for the monetary policy equity returns relationship in the UK was examined by Chortareas and Noikokyris (2014). The evidence was produced that the impact of MPC policy decisions on equities depends in the context of inflation targeting. Kim and In (2005) presented a new point of view on the hypotheses of Fisher which indicated a positive association between the stock returns and inflation. The present study also found the research papers which analyzed the inflation and stock returns for the UK (Li, Paresh Kumar & Zheng, 2010).

Risk and Liquidity. The empirical findings suggest that less work is done in the area of risk and liquidity of stock returns. The stock returns and liquidity relationship was analysed using data from Tokyo stock Exchange (TSE) with regard to liquidity variability (Chang, Faff, & Hwang, 2010). Results revealed a negative relationship of liquidity and stock returns. Chen and Hill (2013) found a stable and consistent association between the liquidity and stock returns. While analyzing the stock returns and risk association, Xing and Howe (2003) concluded that various factors relating to market should also be considered. Sadorsky and Henriques (2001) studied risks relating to multifactor and found evidence of significant effects on stock returns. Jun, Marathe and Shawky (2003) documented the liquidity behavior in rising markets. The study found a significant positive correlation between the stock returns and liquidity after a critical evaluation.

Oil Price Moments. The past two decades have witnessed an exceptional fluctuation in oil prices. Hence many research scholars have shown interest to analyze the association between stock returns and oil price moments, although the researchers need to explore this area more. There is inter-relation between oil price moments and the economic policy which influence the stock returns (Kang & Ratti, 2013). Cunada and De Gracia (2014) examined the impact of oil price moments on the returns generated by shares using econometric models such as VAR and VECM. Results have revealed a negative association between the stock returns and the moments in oil prices. Gupta and Modise (2013) also analysed the association between oil shocks and stock returns using VAR model. There are other notable research works in this area (Chatrath, Miao & Ramchander, 2014; and Mohanty, Nandha & Bota, 2010).

Cross-section and Correlation. A significant research work is found to be associated with cross-section and correlation of stock returns. Out of the research papers selected 3% are related to this area. Xu and Zhang (2004) examined the function of R&D activities in determining the cross-section of returns generated by stocks in Japan from 1985-2000. The study found reasonable evidence about the positive association. Style effects in the cross section of returns generated by stocks were examined by Teo and Woo (2004). The association between rates of foreign exchange and cross section of United Kingdom stock returns were analysed by Kolari, Moorman and Sorescu (2008). The study concluded a high sensitivity of risk associated with foreign exchange. Yu and Wu (2001) studied the stock relative with the perspective of cross correlation. The evidence suggested, a cross correlation is highly sensitive to the volatilities in stock prices. Another

study was conducted in this area by Dumas, Harvey and Ruiz (2003) to find out if the stock returns correlations are acceptable by succeeding variability in national output.

Other Issues/areas

The other issues or areas on which many researchers have shown keen interest for last 15 years include: (i) heteroscedasticity in stock returns; (ii) over-reaction effects on stock returns; (iii) leverage and stock returns; (iv) mutual funds and stock returns; (v) monetary policy and impact on returns; (vi) terrorism impact on stock returns; (vii) political regimes and stock returns (viii) business cycles and stock returns; (ix) real activity and stock returns; and (x) capital gains, liquidity and stock returns.

Analysis Based on Appearance in Journals

Figure 2 depicts various journals reviewed for the purpose of study and the appearance of research papers related to ‘stock returns’ in these journals. The largest number of research papers appeared in Journal of Financial Economics, Journal of Banking and Finance, Journal of Empirical Finance, and Internal Review of Financial Analysis, consisting 41, 34, 27 and 24 research papers respectively. Also considerable appearance can be seen in Journal of International Financial Markets, Institutions and Money (20), Economic Letters (17), Pacific Basin Finance Journal (16), Energy Economics (15), International Journal of Forecasting (13), and International Review of Economics and Finance (13).

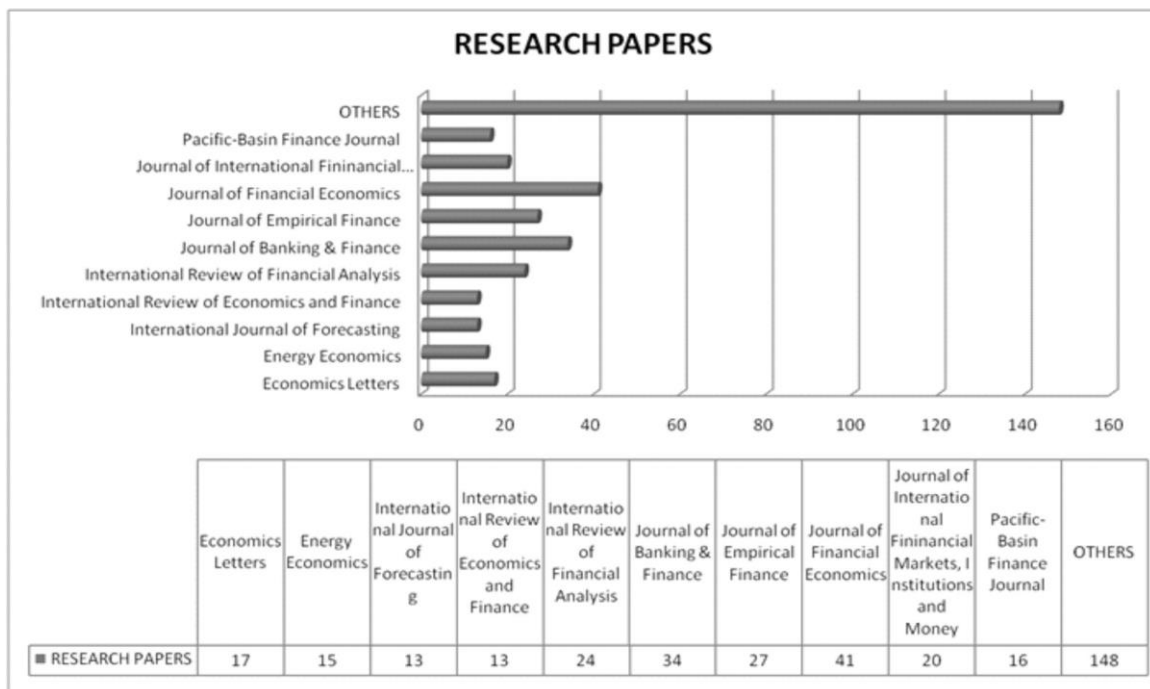


Figure 2. Distribution of research papers on ‘stock returns’ in different journals

Analysis based on Number of Authors

Figure 3 provides the information about number of authors contributed in each research paper relating to stock returns. Group of four authors have written 25 papers, team of three authors contributed to 98 research papers, two together researched 161 research papers and 83 research papers were written by single research author.



Figure 3. Graphs showing number of contributing authors in research papers on ‘stock returns’

Analysis Based on Contribution by Authors- Country wise

Figure 4 shows the country-wise contribution of research scholars in the selected 368 research papers. The largest contributor in this area are the research scholars from USA i.e. 65.48% followed by UK, Australia, and China consisting 16.30%, 14.13%, and 13.04% respectively. Also the contribution of research scholars from Taiwan (9.51%), Germany (5.70%), Turkey (5.70%), Canada (5.43%), Greece (5.43%), Spain (5.43%), and India (4.89%) is notable. The contribution of research scholars from other countries is 40.21%. Other countries include Brazil, Denmark, Egypt, France, Hungary, Ireland Israel, Italy, Japan, Finland, Lebanon, Malaysia, Netherland, Cyprus, New Zealand, Nigeria, Norway, Portugal, Republic of Korea, Belgium, Saudi Arabia, Qatar, Singapore, South Africa, Thailand, Sri Lanka, Switzerland, UAE and Tunisia.

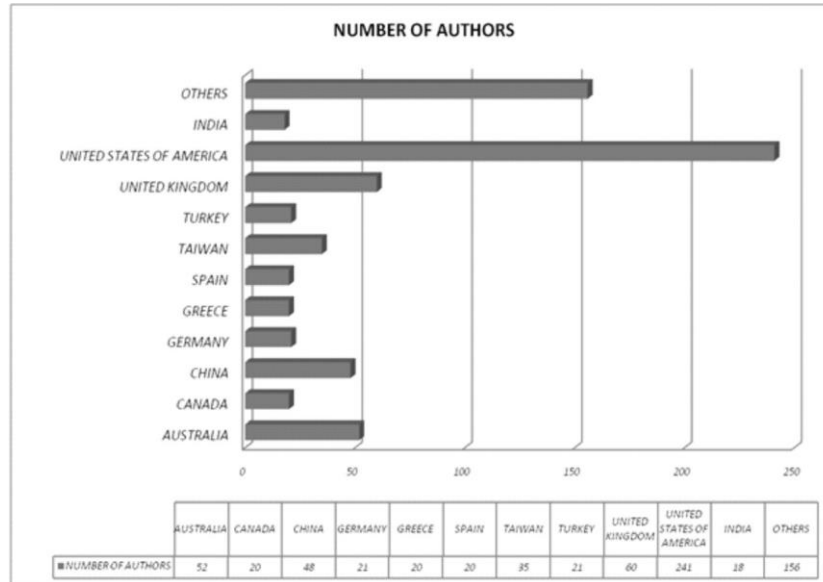


Figure 4. Country-wise contribution of research papers

Analysis Based on Appearance of Authors

Figure 5 depicts the appearance of authors in the select research papers. The present study found the appearance of author Paresh Kumar Narayan as maximum (6 times) in the select papers followed by author David G McMillan (5 times). The other authors which have significant appearance include Allan Timmermann, Ding Du, Rangan Gupta, Turan G Bali and Xiaoneng Zhu.

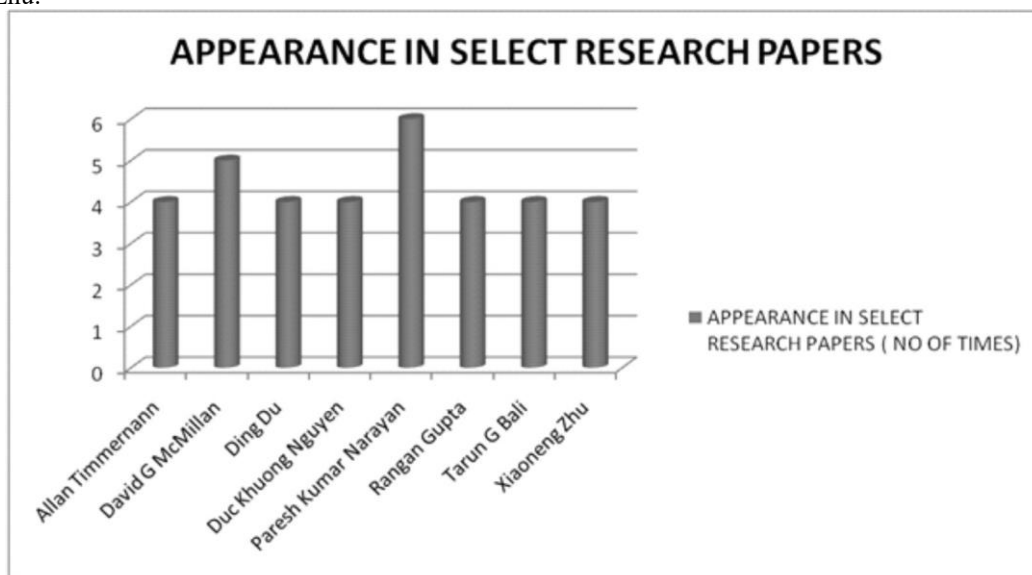


Figure 5. Graph depicting number of times an author appears in the research papers selected

Conclusion

‘Stock returns’ is an area of study which has gained a lot of attention of research scholars from different countries in the past several decades. This shows the importance of stock returns in world economy. Altogether 368 research papers were selected for the purpose of analysis and review. The selection of research papers were on the basis of the key issues/factors. The different key issues or the factors were analyzed and presented in count and percentages. The study indeed helps the stock exchanges, the regulators, Government, investors and other concerned parties. As found in the study, the

predictability and volatility of stock returns has been an area of interest for many research scholars. The present study is in agreement with various quality research work done in the area of stock returns predictability and volatility such as Avramov (2002); Wei and Zhang (2003) and Moore and Wang (2007). Researchers need to explore and give attention to highlight other key issues such as inflation, real activity, oil price moments, risk and liquidity of stock returns. The Asian stock markets are developing and attracting many foreign investors. More study in the area of stock returns is found to be needed in the countries like China, India, Japan and other growing markets.

Although the content analysis has been done carefully, this paper suffers from the limitation that only 368 research papers from 63 journals were considered related to the topic of 'stock returns', which are not enough to highlight every aspect of this area of study. Also this paper has not considered the research papers published prior to the year 2000. Other limitation includes lack of accessibility to all research papers pertaining to the topic.

The present study also gives the scope for further research in the area of stock returns. The content analysis can be performed taking the literature of last two decades. Also more research papers can be included to give more accurate analysis on the determinants of stock returns.

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