"Impact of Volatility and Spill over Effects over Banking Sector"

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Abstract

It is significant for banking institutions to comprehend the challenges associated with volatility and spillover, which the present study intends to identify and offer a significant recommendation on the basis of the Indian Economic sector. In relation to the context, this study highlights the impact of volatility and spillover the banking sector studies them on the context of Indian Economy in a comprehensive way. In addition, the use of qualitative and quantitative analysis through a case study approach has been considered for the study in order to accomplish the overall objective of the study. This study would contribute towards the economy of the India in

terms of the banking industry by analysing the impact of volatility and spillover in a detailed manner. In relation to the scope of the present study, certain objectives of the research are sorted out. It will help to explore the requisite challenges associated with volatility and spillover on the Indian banking sector. It will also help to comprehend the influence of volatility and spillover on the banking sectors of India towards the Indian economy. It will offer related recommendations to the Indian banking institutions for mitigating the impact of volatility and spillover.

Key Words: *Volatility, Spillover, Banking system, GDP, Inflation*

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1. Introduction

Background

Volatility and spillover are referred to as the process and magnitude through which instability in one market affect other markets. It has been well stated by Akhtaruzzaman*et al.* (2014), that an understanding of inter-market volatility spillovers assists regulators of the banking sector in formulation effective policies as well as strategies to manage financial stability. In addition, such financial stability is significant to maintain specifically when the stress of the market gets transmitted to other markets leading to the risk of systematic instability. Other than that, Alemany *et al.* (2015) volatility spillovers assist international portfolio managers and international investors in the pricing of securities and deciding significant strategies for diversification and trading of their investment portfolios. Furthermore, exchange rate volatility highly contributes towards increasing uncertainty of the rate of return, which affect economies of both home and foreign markets.

On the other hand, Allen *et al.* (2013) argued that there positive volatility and spillover effect on the banking sector, however, the term is applied to the negative effect of a home country has on other parts of the world. In addition, the spillover and volatility effects of the larger economy are relatively high towards the global economy compared to the lesser economy. Hence, it is significant for banking institutions to comprehend the challenges associated with volatility and spillover, which the present study intends to identify and offer a significant recommendation. In relation to such context, this study highlights the impact of volatility and spillover over the banking study in a comprehensive way. In addition, the use of qualitative and quantitative analysis through a case study approach has been considered for the study in order to accomplish the overall objective of the study.

Rationale and significance of the study

In relation to the academic area, the present study would assist future researchers to develop in-depth understanding and knowledge about the impact of volatility and spillover over the banking sector. In addition, the information that has been shared through the study would also offer a new dimension for the banking sector to mitigate the challenges associated with volatility and spillover. Other than that, this study would contribute towards the economies of the global world in terms of the banking industry by analyzing the impact of volatility and spillover in a detailed manner.

Objectives of the study

In relation to the scope of the present study, the following are the objectives of the research-

- To know about Volatility and spill over
- To know about the effect of volatility and spill over towards banking sector influencing Indian economies
- To identify the solutions to mitigate the challenges associated with volatility and spillover
- To analysis the current gap in the literature

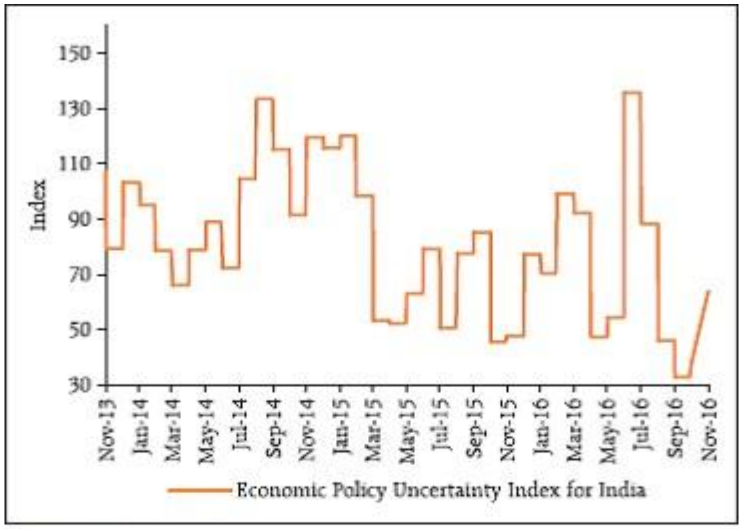
Research questions

- How does volatility and spillover influence the Indian economies?
- How does the impact of volatility and spillover of banking sector affect the growth and development of economies in India?

2. Literature Review

Volatility and spill over

As indicated by Alter and Beyer (2014), the fluctuation of a variable over a period of time indicates the volatility of this variable; this difference from the expected value is represented by volatility. In addition, financial volatility is the change in the price of a financial instrument over time to identify the level of risk. In addition, Kumar and Maheswaran (2013) also suggested that the indirect effect is the impact of one nation on the economies of other nations, including India. The researcher also said in the study conducted in the Indian banking sector that the impact of the gap on the Indian banking sector had a significant impact in other countries.



Source: Bloomberg.

Fig: 1 (Volatility and spill over effect on Indian Economy and banking sector)

Source: https://rbi.org.in/scripts/PublicationReportDetails.aspx?ID=860

Based on the global context, the contextual effects of relative spill overs on that of the national economy and those of the financial banking sectors are considered to be significant. On the other hand these spill overs are not so insurmountable, given the aspect of continued strengthening of the macroeconomic based fundamentals. The Indian economy is therefore characterized by a comparatively low based on the degree of political instability and those of resulting uncertainty. The form of resulting consensus reached and represents a significant number of steps toward the front and results to a huge onward potential for the promoting of the internal trade and related growth. These form of promulgation based on that of the national bankruptcy based law is considered to be another important reform, although there is an availability of adequate capacity based on the building measures which on going further will be the key to an effective form of implementation of these types of measures. These form of pressure on that of the rupee meant for the exchange of the foreign currency based deposits, which was instrumental in strengthening the volatility of the rupee that too by the end of the year 2013. Furthermore, it was treated with relative ease. The Indian government was instrumental in approving a "single injection program" which will allow the Indian nationalized banking and financial sector to be able to provide loans to eligible projects that are not yet completed on a as soon as possible base. India is also ranked 130th out of 189 countries in the World Bank-sponsored business-friendly based scheme. The new classification of states according to their pro-business policies could encourage a healthy competitive environment in India's federal structure, which will lead to further improvement in the country's international ranking based on the volatility and reducing the spill over effects on different parameters.

Effect of volatility and spill over towards banking sector influencing Indian economies

As suggested by Ewing and Malik (2013) attributed their findings to the usual risk adverse behaviour of foreign investors in emerging markets who pull out their investments when the local equity market becomes volatile leading to increased capital outflows and high exchange rate volatility. There exists a asymmetric unidirectional volatility spillovers from stock market and related banking sectors to those of the forex market. By splitting the period into pre-crisis, crisis and post-crisis periods, they found bidirectional volatility spillovers between the two markets in the crisis and post-crisis periods. The asymmetric effect was observed in the spillover from stock market to forex market, and their relative effects on the Indian Economy. It was later found that unidirectional asymmetric volatility spillovers from stock markets to the banking sectors in India. Another finding indicates toward the relative evidences of bidirectional volatility spillovers and a long-term relationship between stock prices and the exchange rate in India that directly had an impact on the economy.

The empirical study conducted by Kim et al. (2015) the review of the literature suggests the existence of volatility overflows between the banking sector and the Indian economy in India, in the context of other countries as well. The effect of the volatility and overflow of the entire economy is relatively high vis-à-vis other economies especially financially. In addition, the researcher found that globalization has deepened financial ties between Indian economies. This, in turn, has significantly increased the impact of the volatility and spread of the Indian economy in the banking sector. It also takes into account other forms of economies based on emerging financial markets. The relative samples are divided into several sub-periods that are also based on the level of volatility observed in the exchange rate in order to perform a more meaningful analysis of the effects of overflow over several separately studied sub-periods to evaluate the scope. secondary effects of volatility during these periods, exacerbating tensions in financial markets. This disaggregated analysis can help financial regulators understand the nature of indirect effects during periods of high volatility and design the policy responses needed to effectively prevent / manage the financial instability caused by these effects. It can also help international investors and portfolio managers formulate appropriate portfolio trading / hedging / diversification strategies to deal with market volatility.

Solutions to mitigate the challenges associated with volatility and spillover

As reported by Nazlioglu et al. (2013), the existence of interdependencies of instability and overflow between the financial markets of the Indian economy is relatively high. Apart from this, the degree of volatility and the spin-off effects of the Indian foreign exchange market of larger economies are relatively large, which affects the growth and development of the financial sector in developing or emerging economies such as the United States. India. It has been well recommended by Syriopoulos et al. (2015), exploring the positive impact of volatility and overflow is also important for the Indian financial sector, since it covers the portfolios and the speed of the fall of money. This, in turn, mitigates the risk of volatility and overflow down.

On the other hand, Alter and Beyer (2014) have clearly identified the fact that the entire financial sector requires effective planning and an economic or political shock to mitigate the problems associated with volatility and overflow. In addition, it is very important that the banking sector take into account anchoring portfolios and the appropriate exchange rates when implementing effective policies and strategies to mitigate risks. As Charalambakis (2016) points out, the interest rate of developed countries is relatively high, which generates volatility and an indirect impact in other emerging countries. As a result, the researcher recommended that coherent policy actions and a new type of change and interest rate be developed to face these challenges.

Current gap in the literature

With regard to literature, it was identified that most research studies focused on the impact of volatility and diffusion in the respective banking sector of India. None of the researchers offered a deep understanding and understanding of the challenges associated with the impact of volatility and overflows related to the Indian banking sector. Based on this research gap, the proposed study aims to understand a problem of this type and to develop knowledge explicitly. Apart from this, the impact of the Indian economy has also been understood relative to the relative Indian banking sector. Information about this area of research is also limited. Regardless of this, solutions for resolving volatility and overflow issues are also limited, which the present intends to resolve and implement.

3. Research Methodology

Research Philosophy

As opined by Tuohy*et al.* (2013), research philosophy can be divided into ***Positivism, Interpretive, and Realism.***

The justification for the use of positivism approach

Based on the scope of the study, the use of positivism philosophy has been utilized by the researcher. The use of this approach has assisted to attain potential information from the past study in order to develop effective measures to accomplish the overall objective of the study. Furthermore, it has assisted to understand the causal relationship between theories and observable instances of the present study.

Research approach

Other than that, Tesch (2013) highlighted two kinds of approaches- ***Deductive and Inductive.***

The justification for the use of the inductiveand deductive approach

Based on the scope of the study, the utilisation of the inductive and deductive approach has been considered for building an efficient qualitative and quantitative framework. Furthermore, it has assisted the researcher in integrated information from credible resources for accomplishing the objectives of the study as well as for the gap identified. Hence, the researcher has used this approach for this study.

Research design

As suggested by Gray (2013), research design can be categorized into ***Explanatory, Descriptive, and Exploratory.***

The justification for the use of exploratory research design

In relation to the scope of the study, the use of exploratory design has been made by the researcher. It has assisted to investigate the secondary resources through the case study analysis in terms of articles and journals. It has developed a qualitative and quantitative analysis of the study.

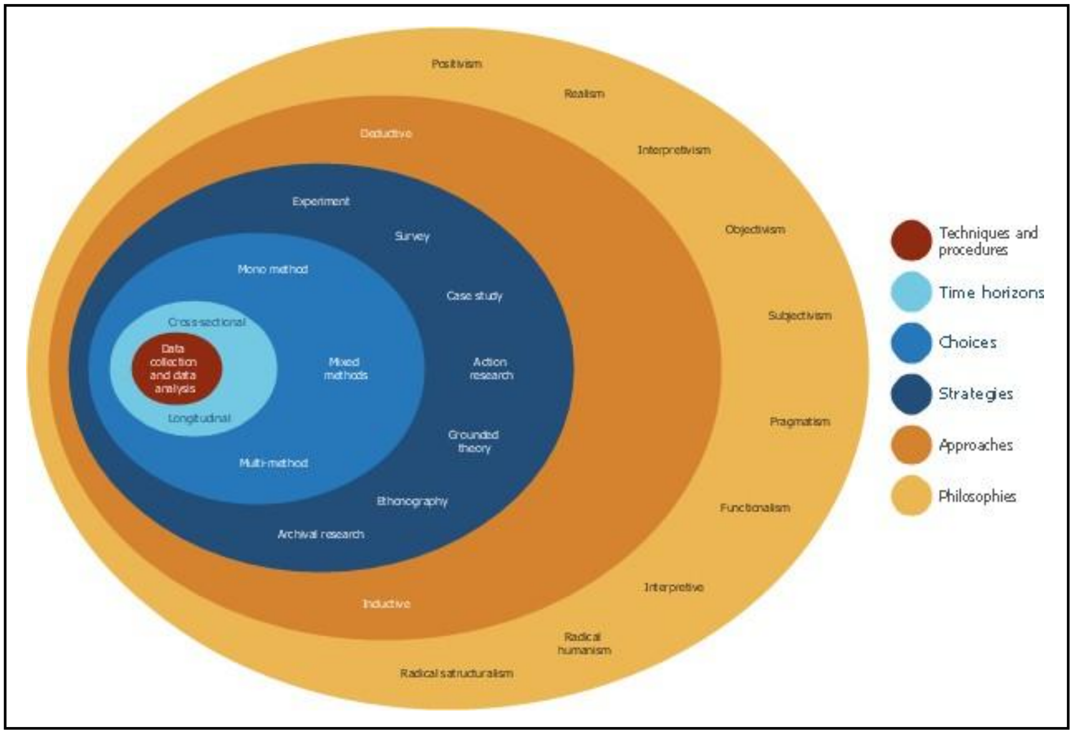


Figure 2: Research Onion

(Source: Saunders *et al.* 2012)

Data type used

As put forward by Kitchin and Tate (2013), the data type can be segregated into ***Secondary data type and Primary data type.***

The justification for the use ofsecondary resources

In relation to the scope of the study, the use of secondary data is highly relevant. As the study is based on qualitative and quantitative aspect, the utilization of secondary resources has been done by the researcher by gathering potential data from past research studies and credible resources.

Data collection methods

As suggested by Smith (2015), data collection methods can be divided into ***Grounded theory, Survey, Experiment, and Case study analysis.***

The justification for the use ofsurvey analysis

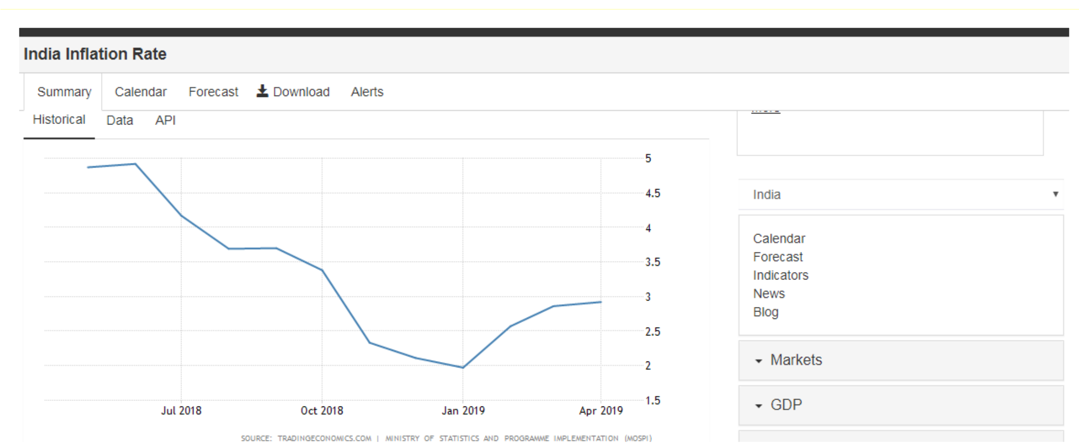
In relation to the scope of the present study, the researcher has usedsurvey approach. It has assisted the researcher to gather relevant sources of evidence to fulfil the objectives of the present study. In addition, this data collection method has also developed a comprehensive view in the banking sector, which has assisted to formulate generalized data.

Ethical aspects

As opined by Merriam (2015), it is significant to maintain ethicalness for attaining data for the study. Other than that, the confidentiality and privacy of data gathered through ancillary sources have been highly maintained by the researcher. In relation to such context, the researcher has significantly maintained ethical standards for gathering the data in order to deduce appropriate results.

4. Result/Findings

1. Cumulative Inflation in India and its effects:



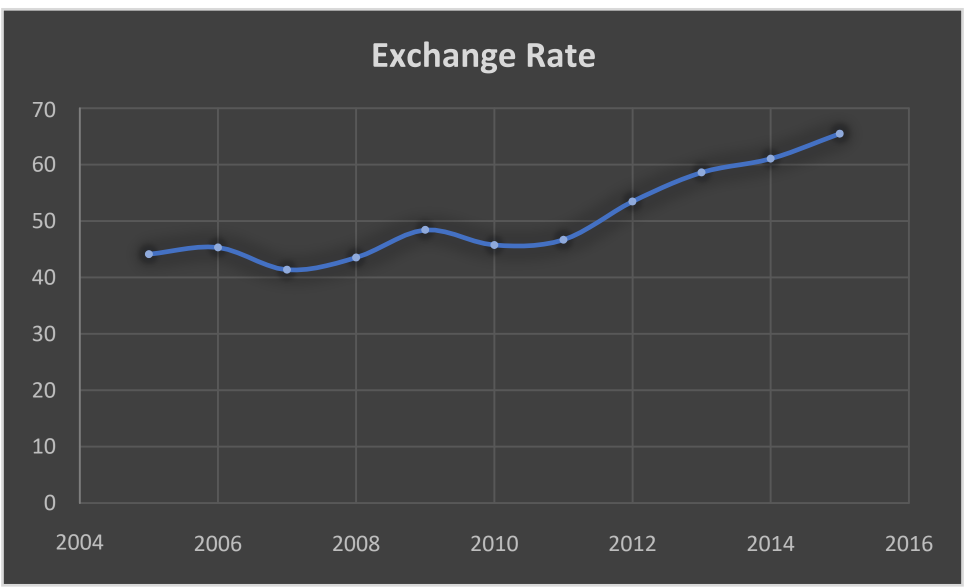
Source: https://tradingeconomics.com/india/inflation-cpi

In India, the cumulative inflation has failed to 3.41% in FY2019 compared with 3.59% in FY2018. Moreover, the CPI inflation has constantly failed from 5.9% in 2015 to 4.9% in 2016, 4.5% in 2017, 3.6% in 2018 and also decline to 3.4% in 2019.

Amid the CPI aspects, the inflation rate of food and beverages raised to 0.66% in March 2019 from (-) 0.07% in February 2019. Moreover, the inflation moved up for vegetables to (-) 1.49%, pulses and products (-) 2.25%, egg 1.45%, sugar and confectionery (-) 6.12%, and meat and fish 6.55% in food items. Therefore, the inflation down for fruits (-) 5.88%, made sweets, snacks, and meals 3.26%, milk and products 0.78%, spices 1.23%, non-alcoholic beverages 3.56%, and oils and fats 1.08% in March 2019.

1. Increase Exchange rates due to Inflation

Year	Exchange Rate
2005	44.10
2006	45.31
2007	41.35
2008	43.51
2009	48.41
2010	45.73
2011	46.67
2012	53.44
2013	58.60
2014	61.03
2015	65.48

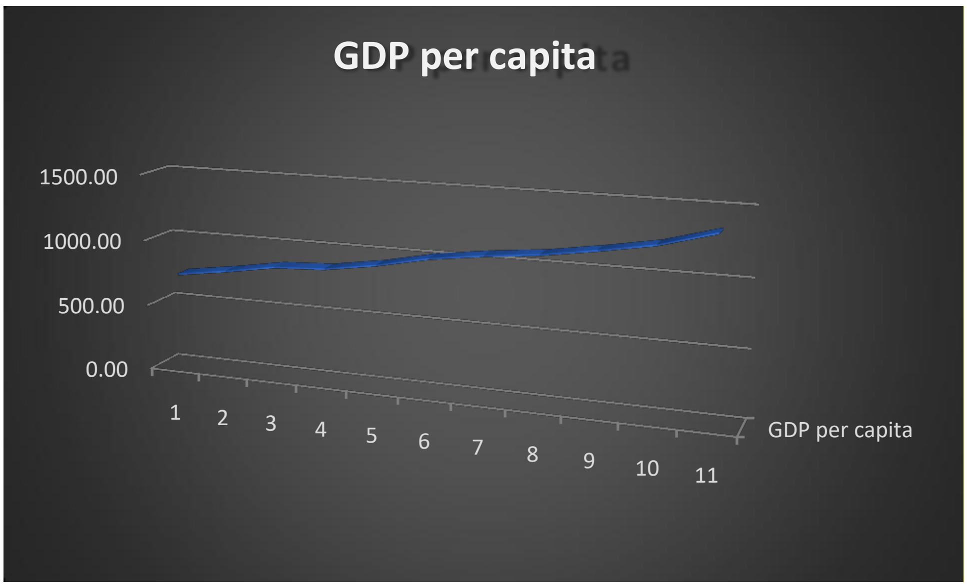


As per above chart, the exchange rate is higher than last 10 financial year. It can be stated that the higher side of the unemployment rates, it signs the fluctuation that needs to be stabilized. In this way, inflation has some negative or positive effects on the unemployment. Because of, it can be stated that decrease or increase of exchange rate has an effect on the unemployment rate in

India. According to the fact that exchange rate has been the most effective and important variables in unemployment in Indian economy, its impact on the unemployment rate has been analysed.

2. GDP per capita and Inflation

Year	2005	2006	2007	2008	2010	2011	2012	2013	2014	2015	2016
GDP per Capita	729.00	784.36	848.39	868.60	928.98	1010.31	1063.16	1102.91	1164.34	1233.95	1345.33

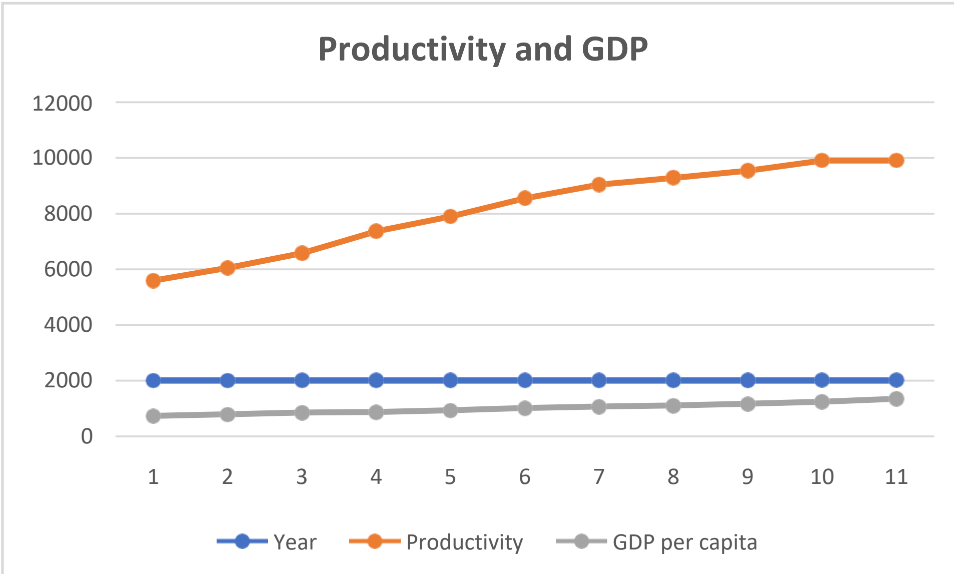


The rising population will state the lower GDP per capita if total GDP growth doesn't possess step with the population. In addition, GDP Per capita helps as the informal degree of prosperity of the country. According to the above chart, it can be stated that the GDP per capita is the highest position compare with the per capita GDP of the last 10 years. According to this survey, it can be stated that the ranks of the richest countries by this statistical data are conquered by rich nations with comparatively small populations and excessively large economies. Real GDP per capita is the amount of the total economic productivity of the nation divided by the number of population and adjusted for inflation. In this scenario, both inflation and GDP increase because of reduced supply of main goods and consumer requirements, instead of higher demand. As per above table and chart, it can be stated that unemployment rate is fluctuating in every year in the banking sector of the global world. In addition, it has been also identified that the survey resulted will influence towards the banking sector affecting global economies and its successful integration. In 2005, unemployment rate across the global world was 4.40, while it stated 3.80 in

2015. According to the survey, it can be stated that unemployment rates in India situated at the higher position based on the previous financial year, but employment rates in India were fluctuation in every financial year. So that, it can be stated that appropriate strategies and policies need to be developed by the policymakers in order to explore the opportunities associated with the unemployment rates. In this way, it stated inflation can push down the unemployment rates in India. Charalambakis (2016) stated that the Great Depression resulted in portion from downward stickiness of wages: unemployment rushed for the reason that employees struggled pay cuts and were also fired in its place. Furthermore, the same singularity may also work in opposite, such as upward stickiness of wages defines that when inflation hits a particular rate, real payroll costs of employers decrease, as well as they are capable to hire more employees.

3. Productivity and GDP

Year	**Productivity**	**GDP per capita**
2005	5595.00	729.00
2006	6048.00	784.36
2007	6578.00	848.39
2008	7360.00	868.60
2009	7899.00	928.98
2010	8551.00	1010.31
2011	9041.00	1063.16
2012	9285.00	1102.91
2013	9544.00	1164.34
2014	9907.00	1233.95
2015	9907.00	1345.33



Various factors of inflation impact the productivity and GDP. In this way, 1% decrease in productivity has been related to a little less than 2-percentage-point increase in the GDP per capita. As per above table and chart, it can be observed that decrease in GDP paralleled to the higher increase in the production rate. In 2015, with only a 0.20 percent reduction in GDP, the unemployment rate increase by 9% points relative to 2014. According to the survey, it can be stated that GDP increases quickly, above the expectation level, until now inflation continues and unemployment remnants high because of low production.

5. Conclusion

Summary

In conclusion, it can be stated that the influence of volatility and spillover over banking sector is critical which in turn directly affect economies of the India. Due to globalization, the integration of Indian economy has been extensive; however, has created volatility and spillover effect on the financial market. In other words, these kinds of challenges can be beneficial for one market but can create an adverse impact on other markets. It has been also comprehended that the opportunities associated with volatility and spillover, which the larger economies or developed economies are exploring in terms of the financial market. However, the need for stabilization for lesser or developing economies is significant in terms of the stock exchange rate and interest rate.

Other than that, the challenges including instability, vulnerability, inflation as well as issues in exchange rates are created due to volatility and spillover effects in the financial sector. This, in turn, certainly creates issues for financial development as well as economic growth. Furthermore, it is also significant for risk managers and portfolio investors to cope up with the global integration by focusing on appropriate strategies and policies in stock markets. Hence, the impact of volatility and spillover over banking sector is critical due to the global integration of financial market specifically affecting the Indian economy.

Recommendations

Based on the scope of the study, the following are the recommendations that can enhance the viability of the banking sector as well as contributing towards the development of the economy-

- Strengthen risk management strategy in the banking sector
- Development of derivatives market along with enriching risk aversion tool for financial institutions for securing Indian foreign exchange market;
- New exchange rate reform must be integrated for developing and emerging economies for developing financial markets and economy.

Limitations of the study and scope for future research

In relation to the ***limitation*** of the study, the study is entirely based on financial sector of India. The integration of global and Indian data has offered distinct results that can have impacton the qualitative and quantitative results. Other than that, limited time and budget for the study has critically affected the attainment of qualitative results along with limited sources of information.

For ***future scope***, researchers can use both qualitative and quantitative analysis for delivering more appropriate results and findings of the study in specific Indian banking sectors. In addition, other than the financial or banking sector, the economy of the India can be evaluated based on volatility and spillover effect. Hence, more in-depth and relevant evidence can be gathered through the use of both inductive and deductive approach in future studies.

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