

Influence of COVID-19 cases on Stock Market Performance: A Comparison of Developed and Developing Countries

by

James Eddie Williams

Abstract

Background: It is understood that the stock markets have been adversely impacted due to the pandemic's underdeveloped and developing economies. Moreover, the economies have been affected in much negative manner due to the pandemic.

Aim: The aim of this research is to avail insights regarding the impact of covid-19 on the stock markets of developed and developing economies.

Method: In this research, the quantitative research design has been selected by collecting the data from websites such as the World Bank. The insights were attained from prior authentic literature resources in accordance with research phenomena. Three developing countries (Nigeria, Albania, and Bangladesh) and 3 of its counterparts i.e. developed countries (China, US, and Japan) from 2013 till 2022 using panel series data. STATA has been selected as the data analysis techniques for implementing descriptive statistics, correlation, and the regression analysis.

Findings: A positive association is being shared between Covid-19 and stock markets performance in developing countries context but a contrasting observed is found in the developed countries. This is because of the sound economic policies that makes it capable of addressing large volumes of Covid-19 cases and it is not reflected on its economic indicators as much as on the developing countries that suffered extensively.

Key Words: Covid-19, Stock markets, Developed Economies and Developed Economies.

Introduction

In present times, the unexpected emergence of the pandemic has led to an impact the economies all over the globe and financial markets. The pandemic has influenced the sectors of the economies heavily since, due to the pandemic, much has been altered globally and the activities of the businesses (Farooq et al., 2022). The author mentioned that the literature shows that unforeseen catastrophic incidents such as COVID-19 have impacted the stock markets to face high abnormal returns. For example, during the pandemic, lockdowns, travel restrictions, quarantine policies and lockdowns decreased international and national mobility and

negatively influenced many industries, such as airlines or the hospitality sector. The pandemic also altered individual behaviours and attitudes, impacting the stock markets and abnormal outcomes. Similarly, as Farooq et al. (2022) stated, behavioural theorists, postulated that abnormal returns are the function of investors behavioural and psychological elements.

In addition, it has been mentioned by the same author that an investor's optimism positively influences price volatility, whereas suspicious behaviours may act in a converse manner. Since the pandemic led to a pessimistic attitude and uncertainty, one can expect abnormal returns for different sectors, such as transportation and airline. Investors are keen to understand the intensity and nature of adverse stock market reactions before developing their investment tactics (Ozkan, 2021). Policymakers are needed knowledge of such adverse shocks to develop pertinent rules and regulations.

Thus, abnormal returns have been depicted in the stock markets. The impact of the pandemic depends upon the nature of the financial markets and the macroeconomic environment. For example, it has been argued that investors' behaviour response towards the stock market during the financial crisis is much more significant in developing nations (Hailu and Vural, 2021). Nonetheless, investors in developed nations act much more rationally and respond accordingly. This makes it imperative to examine the comparative impacts of the pandemic on the financial markets of developed and developing nations.

According to Zhao et al. (2022), the main findings exhibit that the impacts of a pandemic on the financial markets differ between developed and developing nations. Therefore, there is no similar pattern of the pandemic's influence on the financial markets at all national levels. The economic criterion is a vital transmission channel of the pandemic towards the financial markets of developed countries. Conversely, the social criterion had a much more prominent part than the economic one as a transmission channel under the financial markets of developing nations.

According to Uddin et al. (2021), the pandemic impacts the developed nations financial markets via supply reductions, demand reductions, and economic instability. In consideration of the developing countries, the experts addressed that expectations and confidence changes under the consumption patterns, as well as bandwagon impact, are the three most vital influences of the pandemic on the financial markets. According to Insaiddoo et al. (2021), the insights can be pertained towards understanding the external shocks on the financial markets

and also understanding the impacts of the pandemic on the financial and economic markets. The first strand concentrates on the responses related to the financial markets towards crises and shocks (Ozkan, 2021).

However, the oil price shock in the financial markets of Nigeria from 2007 to 2014 exhibited that this unexpected external shock may impact the stock market indirectly and directly from the commodity markets. For example, as stated by Hailu and Vural (2021), an unexpected shocks with the source of demand shocks may vitally influence stock market volatility in the G7 nations. The nature of shocks (supply or demand supply shocks regarding investments in shares or equities) is the main element that exhibits the level of external shocks under the financial market. Research gap evident in this study includes limited comparative analysis being conducted regarding the impact of Covid-19 on the global stock markets. There is a substantial focus on individual countries with usually a stable economy but a lack of comparison between developing and developed countries is missing.

Literature Review

The impact of the pandemic on the financial market had led most of the regimes across the globe to underestimate the diverse impacts of the pandemic outbreak, which led to ineffective reactions towards the adverse outcomes of a pandemic. In this regard, as per the works of Ellahi and Ahmad (2021), the influence of the pandemic on the USA's stock market showed that the US might face major staffing shortages for significant economic and financial infrastructures. This shortage may lead towards an adverse impact on the global economy in the short run.

The outcome exhibited the unexpected influence on the impact of such a decrease had upon market volatility in the USA. The outcomes of this exhibited the relationship between coronavirus, growth expectations and stock prices. In addition, it includes that such a decrease had strongly impacted all of the stock prices among the global stock markets more than the growth expectations. As per the works of Harjoto et al. (2021), the pandemic has impacted worldwide financial needs, such as that the revisions of the economic growth forecast as well as heightened risk aversions, combined with extreme uncertainty with regard to the future development of the pandemic had led towards extreme volatility under the stock markets.

The pandemic and its characteristics have an unknown aetiology and insufficient experience. All the nations are responding to the pandemic, leading to heavy losses to the worldwide economy and financial markets (Insaidoo et al., 2021). Thus, the influence of the pandemic of

COVID-19 on the economy has led stock markets to face distortions. According to Zhao et al. (2022), Saudi Arabia's response to the pandemic was assisted via sustained investments in digitalised and healthcare infrastructure, strong macroeconomic factors and digital infrastructure. The regime of Saudi Arabia had pertained to supporting the private sector by giving those 50 billion aimed at increasing the economy's growth and hence global financial markets. The central bank programs consist of elements such as supporting small and medium enterprises. Conversely, the day-to-day returns under the stock markets of the 16 nations, such as China, South Korea, Italy, Germany, Spain, USA, Japan and France, were negatively impacted due to the pandemic (Uddin et al., 2021).

The pandemic impacts on the Chinese stock market returns led to indicate that there had been a slowdown in the business cycle and a decrease in daily business operations due to an increase in deaths and implications of the uncertain environment. Furthermore, the influence of the pandemic had been increased in emerging Asian markets due to the lack of actions taken by the governments. However, volatility is vital to the financial markets, and the impact of the pandemic led G7 stock market indices to be impacted—the pandemic outbreak most influences capital markets (Khan et al., 2021). The influence of the pandemic outbreak on the financial markets is much visible in the stock markets (Bahrini and Filfilan, 2020). This position has also been argued that the major stock markets documented the worst performance due to the pandemic. The international stock markets had a loss of six dollars trillion (Harjoto et al., 2021).

It too has been investigated that the influence of the pandemic on the stock market returns for sixty-four nations; the findings exhibited that the stock markets reacted adversely towards the growth in a number of confirmed cases as well as due to a link between the number of deaths as well as the stock return was weak (Khan et al., 2021). Besides, it also has been exhibited that stock markets had strongly reacted to the pandemic outbreak during the first two months. As per the works of Liu et al. (2020), the stock market effectiveness has impacted different kinds of occurrences.

Corporate actions like right issues, splits and warrants can impact the stock market effectiveness. In contrast, the pandemic's implication had a much disastrous impact on the stock markets in terms of warrants and issues. According to the research of Khan et al. (2020), the impact of the pandemic was investigated via the bootstrap automatic variance ratio (WB AVR)

test led experts to understand that reliable and robust outcomes were determined against the non-normality as well as conditional heteroskedasticity that are extensively observed under the financial data. The WBAVR test outcomes indicated that the pandemic led to deviations from the market efficiency under COVID-19.

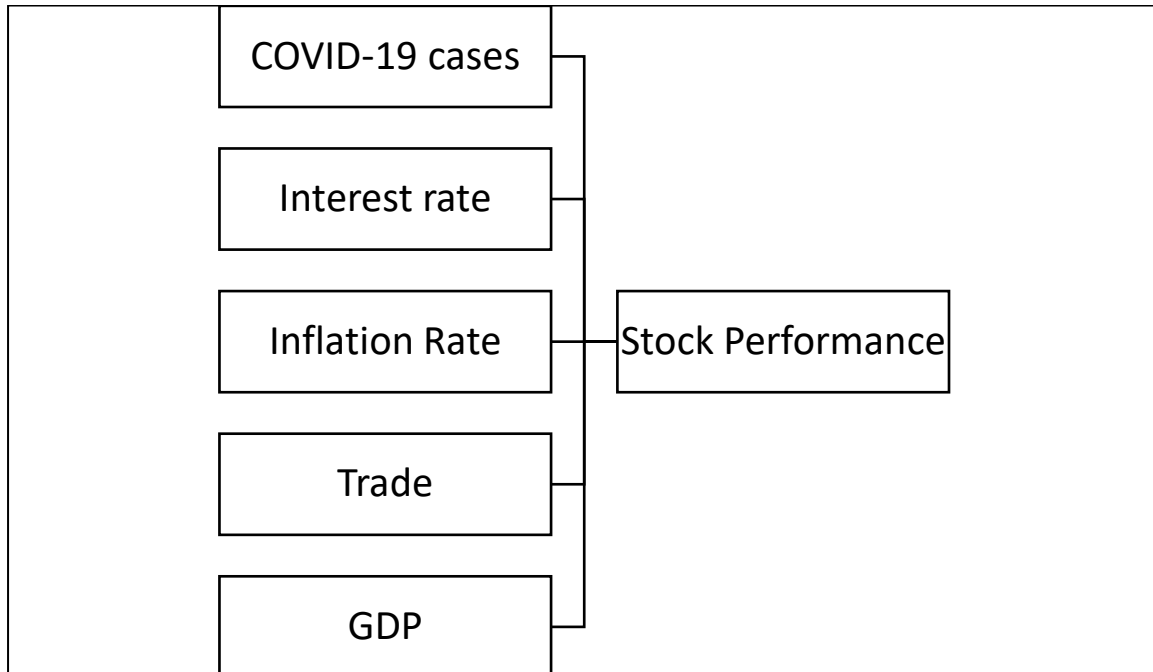
Furthermore, the major findings exhibited that even small-sized banks efficiently smooth the shocks, regardless of the access towards global or national capital markets (Ellahi & Ahmad, 2021). The same author mentioned the relationship between asset returns and disaster risks. It was found that a negative influence of any disaster risk on the equity markets had been reviewed in times of pandemic. However, it has been argued by Khan et al. (2020) that uncertainty in the financial markets or under the business cycles leads towards uncertainty and unclarity regarding the stock's future performance, which negatively influences the performance of the financial markets and has been proven in prior literature.

As per the research conducted by Alzyadat and Asfoura (2021), the expense of the SARS (2003) was impacted by the pandemic, and it faced significant losses due to the financial crisis happening in Asia which was estimated at 3 trillion value in GDP and 2 trillion dollars' worth in the financial markets equity. It too has been stated that the impacts of SARS on China, Canada, Vietnam and Thailand had led to around 78 mutually equity funds geographically formulated led that monthly and funds flows being devastatingly impacted due to the pandemic, and the average return was 0.90 per cent in times of pandemic. It has been exhibited in the research of Ozkan (2021) the stock markets are interdependent and interlinked. Given that, taking into consideration of the cross-market correlations during the pandemic led day to day return under Asian markets was high in correlation before the pandemic. In addition, the worldwide financial stock markets were becoming highly interdependent, and the crisis in one nation may spread extensively to other nations. The movements in the stock markets had been highly correlated, and the events such as infectious diseases can incorporate investors to react in a negative manner.

Regarding the hypotheses; it is as follows:

H1: There is a positive and significant influence of Covid-19 on stock performances in the developed countries than on the developing countries

H2: There is no influence of Covid-19 on the stock performances in either developing or developed economies



Methodology

Methodology in this study is a quantitative research design as the study intends to assess the relationship between the variables through numeric information. This is because the research design is able to provide a structured and an objective approach in measuring Covid-19's impact on the stock market. Quantitative research design is also useful in conducting a comparative analysis to ensure that the findings can be replicated (Bloomfield and Fisher, 2019). With a quantitative methodology; study is able to discuss and determine the association shared between the variables and also conduct a thorough comparison between the developed and developing countries within the Covid-19 cases context. For the study's purpose, where a comparison is to be conducted; the article selected three developing countries (Nigeria, Albania, and Bangladesh) and 3 of its counterparts i.e. developed countries (China, US, and Japan) respectively. These countries are selected considering their stability and also increasing number of Covid-19 cases that makes them suitable for the current study and addressing its hypotheses.

For this article, secondary data is to be collected so that the data's accuracy and its appropriateness can be used in the analysis. Secondary data comprises of published information on websites that are related to the topic (Fischer et al., 2023). This includes databases such as the World Bank for the majority of indicators used in the analysis. This article takes exception

for Japan however, where one of the data i.e. trade % of the GDP is taken from the Bank of Japan citing its unavailability on the World Bank data respectively.

According to the Bank of Japan's policy on interest rate; it has maintained substantially low interest rates from 2013 till 2022 due to an aggressive monetary easing strategy (Focus Economics, 2024). This is being done to stimulate aggressive economic growth and to ward off against the deflationary pressure on its economy respectively.

This discretion is not possible or provided by primary sources where information is obtained from participants associated with the field, which in this context is the stock performance and Covid-19. But, in this case, taking information and data from such participants is not relevant as it does not provide any accuracy or relevance for the current article and is not able to address the study's objectives. For this article, the data is taken from the Covid-19 context in both the developed and developing countries and thus the timeline determined is 2019 to 2023 i.e. during and post pandemic period.

Methodology is determined within the study's context and is able to provide a better response and understanding to the study's topic. This includes assessing the Covid-19 cases' influence on the stock market performance and also to conduct a comparison between the developed and developing countries. For this reason; STATA has been selected to implement the statistical tests such as descriptive statistics, correlation, and the regression analysis respectively. These are implemented to be certain that there is a better understanding of the relationship shared between the variables. It is also observed to be effective in conducting a wide discussion that keeps Covid-19 and stock market performance central in its discussion while addressing both its objectives and hypotheses.

Findings and analysis

Descriptive statistics

-> CountryType = Developed

Variable	Obs	Mean	Std. Dev.	Min	Max
COVID19cases	15	2.51E+07	3.72E+07	87000	1.12E+08
Inflation Rate	15	2.289809	2.164356	-0.2333528	8.0028
Interest rate	15	2.438444	2.101245	-0.1	5.2825

GDP	15	1.50E+13	8.35E+12	4.21E+12	2.74E+13
Trade openness	15	33.14122	6.419617	23.10475	46.84373
Stocks traded	15	186.5541	96.58951	99.60147	509.7

-> CountryType = Developing

Variable	Obs	Mean	Std. Dev.	Min	Max
COVID19cases	15	5.96E+05	6.88E+05	39014	2.05E+06
Inflation Rate	15	8.847991	7.01571	1.41	24.65955
Interest rate	15	9.199307	3.284219	6.021667	15.37659
GDP	15	2.87E+11	2.00E+11	1.52E+10	4.75E+11
Trade openness	15	41.84758	26.46912	10.74	85.14968
Stocks traded	15	39.80491	46.80358	0.4069173	155.9491

Regarding the developed countries; it is observed that the mean value for the Covid-19 cases is 25 million with a 37.2 million standard deviation. This shows that the developed countries have a higher propensity of Covid-19 with a substantial variability. Regarding its inflation rate; its mean value is 2.29% with a low standard deviation i.e. 2.16%. This shows that the inflation rate for the developed countries are significantly low while some countries are also facing negative inflation rate as well. Considering its influence on the stock performance; the stock market activity is represented to be very high and experiences a substantial amount of variation within the developed countries.

On the other hand; in the developing countries context; mean value for the Covid-19 cases is 596,000 with a high standard deviation i.e. 688,000 respectively. This indicates that the developing countries have reported less Covid-19 cases than its developed counterpart but experience high variation in this aspect. Inflation rate in developing countries' context is higher than their counterparts as its mean value is 8.85% with a moderate deviation of 7% respectively. This denotes that the inflation rate is high and due to moderate variation tends to be on the higher spectrum, which indicates economic instability.

Regarding the stock performance; developing countries' mean value is 39.80% while the standard deviation experienced is 46.8% respectively. Through these observations, it can be signified that the developing countries experienced a low stock market activity and indicates less than effective financial markets.

In summary; it is observed that despite the less number of Covid-19 cases; developing countries are still experiencing less stock market activity and does not represent any stability in either its inflation or interest rates.

Correlation

-> CountryType	Developed					
	(obs=15)					
	COVID1~s	Inflat~e	Intere~e	GDP	Tradeo~s	Stocks~d
COVID19cases			1			
Inflation Rate	-0.0170	1.0000				
Interest rate	0.2552	0.0322	1			
GDP	0.3739	0.5429	0.6432	1		
Trade openness		-1.085	-0.2237	-0.6615	1	
Stocks traded	-0.1386	0.1829	-0.0519	-0.135	0.0146	1

->	CountryType	Developing					
		(obs=15)					
		COVID1~s	Inflat~e	Intere~e	GDP	Tradeo~s	Stocks~d
	COVID19cases			1			
	Inflation Rate	-0.2608	1.0000				
	Interest rate	-0.1484	0.8132	1			
	GDP	0.2860	0.6507	0.668	1		
	Trade openness		-0.9807	-0.758	-0.9539	1	

Stocks traded	-0.4329	0.0717	-0.1891	-0.5042	0.4258	1
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Regarding the correlation for the developed countries; it is observed that there is a negative correlation shared between Covid-19 cases and the stock market parameters i.e. inflation rate (-0.0170), stocks traded (-0.138), and trade openness (-1.805) that shows the Covid-19 cases has an inverse but marginal effect on the stock market performance. On the other hand, there is a significant correlation shared with the GDP (0.373) along with a positive association shared. This is inferred that an increase in Covid-19 cases led to a moderate increase in GDP levels in the developed countries as well.

As for the correlation between the variables in the developing economies; it is stated that there is also a negative correlation with the inflation rate (-0.260), trade openness (-0.98), and the stock trade as well (-0.432) respectively. It is inferring that an increase in Covid-19 cases led to a decrease in inflation rate significantly but also decreased its trade openness significantly. This is because the latter shares a significantly high correlation with Covid-19 cases.

Considering the correlation results observed between developed and developing countries; it is observed that the developed countries' indicators such as GDP and the trade openness demonstrate a strong correlation with its corresponding variables. Covid-19 cases however, share a weak correlation and association with these indicators and does not influence its activities significantly.

On the other hand, which is the developing countries, it is observed that there is a significant correlation observed between Covid-19 cases and the stock market performance. This is interpreted that the Covid-19 cases are linked with its economic indicators in-depth than in developed countries. Such a disparity is observed to be significant in nature and highlights the varying economic dynamics and severity observed from the Covid-19 cases on its stock market performance respectively.

Regression

-> CountryType		Developed				
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Source	SS	df	MS	Number of obs	=	15
			F(1, 13)	=		0.25
Model	2507.29053	1	2507.29053	Prob > F	=	0.6224

Residual	128106.178	13	9854.32138	R-squared	=	0.0192
				Adj R-squared	=	-0.0563
Total	130613.468	14	9329.53346	Root MSE	=	99.269

Stockstraded	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
COVID19cases	-3.60E-07	7.13E-07	-0.50	0.622	-1.90e-06	1.18E-06

-> CountryType Developing						
Source	SS	df	MS	Number of obs	=	15
			F(1, 13)		=	3
Model	5748.07753	1	5748.07753	Prob > F	=	0.107
Residual	24919.98	13	1916.92154	R-squared	=	0.1874
				Adj R-squared	=	0.1249
Total	30668.0575	14	2190.57554	Root MSE	=	43.783
Stockstraded	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
COVID19cases	-2.94E-05	1.70E-05	-1.73	0.107	-0.0000662	7.29E-06

Regression results in this case from the data is that the R square value is 0.0192 and shows that there is a very slight explanation regarding the variables observed by the predictor variable i.e. Covid-19 cases on the stock performance. Regarding the coefficient values for Covid-19 cases i.e. -3.60e-07; it shows that there is a very insignificant relationship shared between the variables. Within the developed countries context; it is observed that the significance value is 0.622 that is higher than the standard value of 0.05 and thus the relationship between Covid-19 cases and the stock performance is not statistically significant in nature. This is interpreted

that an increase in Covid-19 cases does not cause any influence on the developed countries' stock performance.

Regarding the developing countries; the R square value is 18% that demonstrates a slight influence on the dependent variables' variability. This is also observed to be in contrast with the developed countries where a negligible R square value was observed. Concerning its coefficient value; a negative relationship is observed between the Covid-19 cases and stock performance, and thus the relationship is not statistically significant in nature.

Discussion

In light of the findings; it can be signified that the developed countries demonstrate more resilience than developing countries as increasing Covid-19 cases do not influence its stock performance. This is also observed in Insaiddoo et al. (2023)'s study where there is a marked difference in economic output between different economies where the developed countries are in a position to deliver better market response. This is also imperative to note that the developed countries are in a better position economically to ward off the economic aspects of the Covid-19 cases and its share prices are not disturbed by such instances.

It is also consistent with the study conducted by Tetteh et al. (2022) that mentioned about Covid-19 shocks in different countries with a similar economic situation and does not pose any issue on its economic growth. Similar observations are made in the current study since it is observed that the developing countries are not observed with the relevant economic resilience that can offer any meaningful support to its stock performance. Effect of Covid-19 factors and its cases were observed to be higher in developed countries than its counterpart but the former observed to show a better resilience against such issues.

This is because of the separation of economic factors and the Covid-19 cases in the developed countries, which is not observed in developing countries' case. Despite a comparatively lower Covid-19 cases; it is observed that the developing countries' economic aptitude is not much pronounced or developed to handle such a volume of Covid-19 cases as well. This is also observed in Khalid et al. (2021)'s study that observed the heterogeneous effects that Covid-19 had on the stock market returns. Its findings conclusively observed that the novel coronavirus pandemic had no material effect on the stock market performance and no cessation of business activities were observed in this regard.

Current findings also related with the other literature regarding the developed countries' ability to provide better responses within its stock market performance and also helps in understanding its economic resilience. This is observed to be quite important for the current study's findings as it obtained supporting evidence regarding its stock market performance and its own resilience that allowed to implement better policies. This is evident in the current study's case country i.e. Japan that maintained a uniform interest rate policy that was implemented to address its deflationary effect on its economy and has maintained the same policy during and post the Covid-19.

This led to an appropriate response in this case and also helped it leverage its financial performance to be at par with other developed economies. Along with other developed countries, it was able to address the issues provided by the Covid-19 cases and its effect on the stock market. On the contrary; the developing countries were not in a position to provide a better and an appropriate response in this case because its economic policies did not reflect any semblance of support to its stock market activities. Despite relatively low number of cases in the developing countries; it was not able to capitalise on it and still posted low stock market's activities.

Conclusion

The stock markets have been impacted in an immense manner due to the pandemic. Most of the financial markets have faced with shocks and adverse influences because of the pandemic. Given that, the pandemic has too made investors lack confidence in the stock markets. In accordance, the developing economies had to face numerous hurdles in sustainable development goals achievement as well compared to developed nations. As per the results observed in the study; it can be stated that the developing countries did not maintain the required infrastructure that can mete out an appropriate response to the Covid-19 cases. This is observed in its low stock market activities and there are still issues with its economic indicators as well.

This was however, contrasting with its counterpart i.e. developed countries where Covid-19 cases reached millions over a period of 5 years yet were able to demonstrate a high GDP growth. Stable economic indicators in this case leads to better understanding concerning the Covid-19 cases and its probable effect on the stock market performance. But this was addressed and mitigated through better economic policies to be certain that there are no issues in its

financial performance and also is able to provide an appropriate response. Correlation analysis observed a negative and an insignificant association between the variables within the developed countries' context but observed a contrasting result within the developing countries' context. This reflected the amount of impact and influence that the Covid-19 cases has on the stock market performance. It is also observant that the lack of diverse and broad economic policies; developing countries were not in a position to leverage its stock market performance.

In summary; it can be stated that Covid-19 cases had a marginal effect on the developed countries due to its respective economic policies but had a substantial impact on the developing countries. This can be interpreted that the economic policies has a better impact on the stock market performance rather than the Covid-19 cases.

Future Implications

In consideration of the stock markets for the developed and developing economies in terms of the pandemic, it will be necessary that the experts and financial analysts will imply contingency planning for dealing with uncertainties. In addition, for the market experts, the Covid-19 pandemic allowed them to deal with uncertainties in an effective manner by reducing the risks of the markets and their volatilities. In addition, the experts can ensure to hedge the funds in order to minimise the capital and equity markets.

In this case; the future implications is to understanding the economic policies' policies and the benefits that the economies can derive. As per the findings; it is important to conduct more comparisons by including a larger sample size and also increasing the variables so that a comprehensive discussion can be conducted. This is inferred from the low R square value observed for both the developing and developed countries where its R square values suggest that there is a scope for increasing its variables to assess its variability with relative ease.

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