

Covid-19 Vaccine: Global Stock Market “Game Changer”

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Abstract

This research is a conceptual paper that examines the impact of the presence of the Covid-19 vaccine on investor sentiment and the performance of the global stock market after being hit by high concerns due to the pandemic. The results showed that each stage of vaccine development received high appreciation from stock investors, especially after vaccine candidates passed clinical trials in humans. Investors' positive sentiment towards the vaccine program boosted stock market performance. However, the sentiment of this vaccine cannot stand alone, it needs government policy support to truly restore market confidence in the recovery of social and economic conditions, including the stock market. This research combines secondary data published from high-ranking journals that can be used to help develop future tests.

Keywords: Covid-19 Vaccine, Investor Sentiment, Stock Market

Introduction

The world has never been the same again after the first report of the pneumonia disease cluster announced by China on December 31, 2019. This turned out to be the beginning of the discovery of a new disease caused by the highly contagious SARS-CoV-2 virus infection known as Covid-19. This virus is spread through the air (airborne), has a long and dangerous incubation period, and the outbreak is rapidly increasing from China to the world (Ophinni, et al., 2020). It only took 4 months since the announcement of the initial cases in China, WHO has pinned the pandemic status on Covid-19. Until early March 2021, the pandemic is still happening and has infected more than 115 million people globally and 2.5 million of them have died. This is the cumulative incidence in 192 countries worldwide (Johns Hopkins University, 2021) (Figure 1).

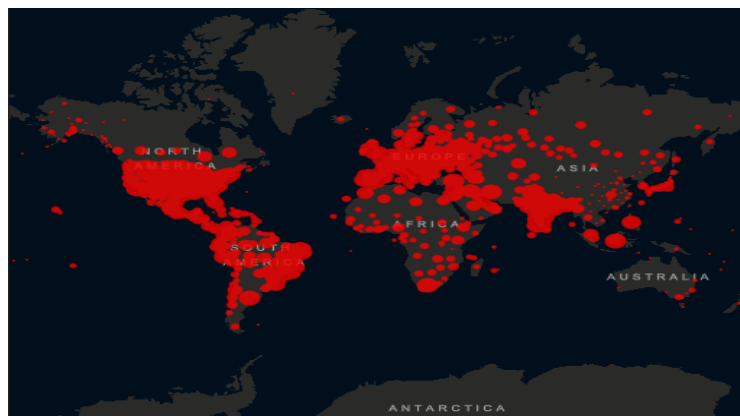


Figure 1. The spread of Covid-19 around the world

Source: (Johns Hopkins University, 2021)

Various countries have implemented policies to reduce the rate of transmission of Covid-19. From closing businesses to other commercial activities and asking the public to voluntarily maintain social distancing. The restrictions on business activities were tighter, had a wider coverage, and had a longer duration than the policies during the 1918 Spanish Flu pandemic and the Asian Flu in 1957-1958. This raises concerns and results in growing economic uncertainty (Baker, et al., 2020). The spillover effect has a significant negative impact on the global economy (Sun, et al., 2021), including investor confidence in the stock market (Raissi and Missaoui, 2015; Bajo and Raimondo, 2017). The waning investor confidence causes uncertainty about the growth opportunities of listed companies on the stock exchange for the future - this then increases the risk of stock prices falling (Hong and Stein, 2003).

Finally, the gray cloud on global stock markets is gradually fading with the announcement of a Covid-19 vaccine to curb the spread of the outbreak. The announcement of the development of the first promising vaccine candidate came from the pharmaceutical giant from the United States, Moderna (Kucher, et al., 2020), then followed by other medical companies competing to find antivirals. The most significant strengthening of the stock market occurred when vaccine development was able to pass clinical trials in humans. Because the satisfactory results in this phase of vaccine development can give investors confidence about the great chance of the success of the mass vaccination program to overcome the Covid-19 pandemic (Chan, et al., 2021).

Several previous studies have explored the impact of the Covid-19 outbreak on stock market performance. However, studies on the performance of the stock market during the pandemic after the Covid-19 vaccine are still very limited. Therefore, this research will further explore the impact of vaccines on the stock market - by presenting the results of previous studies that have a pandemic scope, uncertainty measures, methodologies, and various analyzes. This study will be divided into several sections, namely: 1. investor sentiment at the start of the Covid-19 pandemic, 2. vaccine development, the global awaited "game-changer", 3. Covid-19 vaccine, strong sentiment from stock market investors, 4. The role of policy government during vaccine development, and 5. future research development. This writing can be an illustration of how vaccine development encourages economic recovery, as well as increasing investor confidence and the stock market. The study also summarizes the direction of government policies to continue to support the effectiveness of this vaccine sentiment.

Results and Discussion

Investor Sentiment at the Beginning of the Covid-19 Pandemic

Stock markets around the world came under heavy pressure when the World Health Organization (WHO) announced Covid-19 as a global pandemic in March 2020. During this period, governments of various countries have strictly imposed restrictions on activities to reduce the rate of transmission of Covid-19 (Ashraf, 2020; Baker, et al., 2020; Sharma, et al., 2021). This unusual policy hampered global operations due to the dependence on financial markets in various countries affected by Covid-19. Demand and supply in the economy also experienced disruption, which depressed the performance of the stock market and was exacerbated by the fall in world oil prices to one-third of normal levels (Liu, et al., 2020; Richardson, 2020).

The impact was tremendous, significant market volatility occurred worldwide due to investor panic. In the United States, the level of volatility in mid-March 2020 even rivals that last seen in October 1987 (Black Monday event) and December 2008 (global financial crisis) (Figure 2). In fact, America has the largest and most liquid stock market in the world and contributes

around 50% of the global market capitalization. Coverage related to COVID-19 became the dominant driver of the daily movements of the United States stock market in the February-April 2020 period, where the frequency of transactions was recorded extraordinary (Baker, et al., 2020).

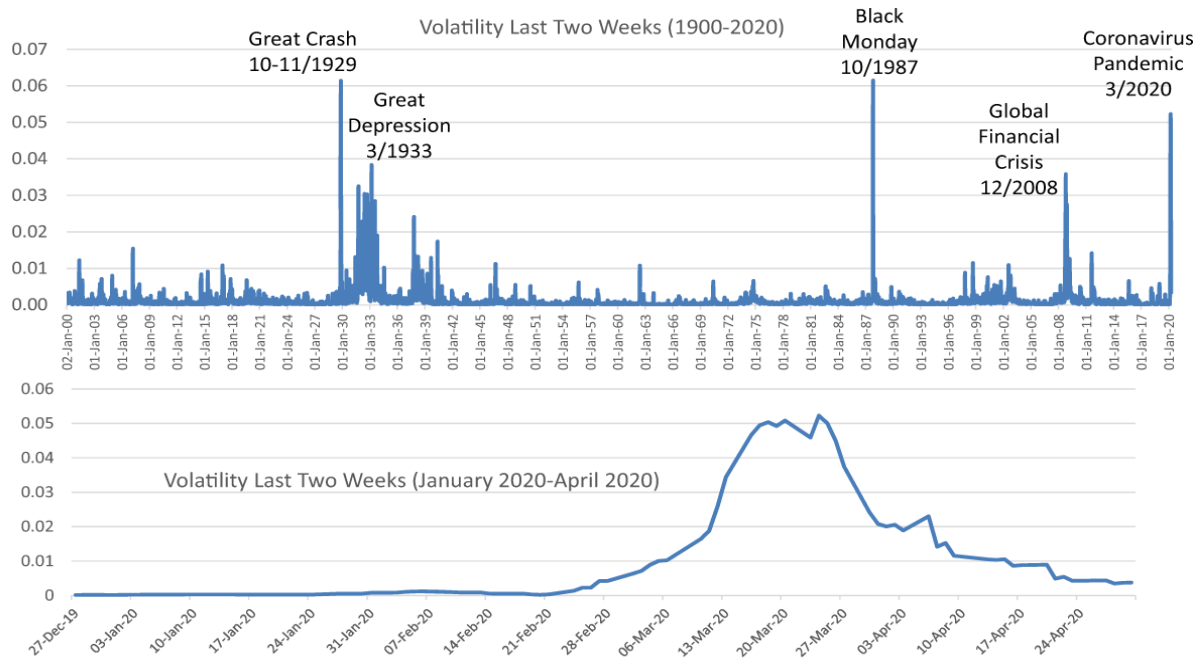


Figure 2. The movement of the United States stock market which was full of volatility for the period January 1900 - April 2020

Source: (Baker, et al., 2020)

The data sampling period is from January 2, 1900, to April 30, 2020. The data is processed using a computational system from Yahoo Finance and Global Financial Data which is part of the Dow Jones Index. Realized volatility is measured by the sum of the squared returns over the last 10 trading days.

Meanwhile, the Indian stock market contracted and experienced a bearish trend in March 2020. Bhattacharjee and Das (2020) noted that this pressure was related to an increase in the fear index - which measures investors' expectations of future stock price movements amid concerns over the development of cases and death records due to Covid-19. As a result, there was a massive sell-off of foreign institutional investors because of concerns over high media coverage, which is inseparable from the reports of confirmed cases and deaths due to Covid-19. This pressure in turn had an impact on India's IPO market, which was suffering from the outbreak.

From domestic stock exchanges in Indonesia, the Composite Stock Price Index (JCI) fell by almost 30% from a level close to 6,400 in January to around 3,900 in mid-March 2020. This is the biggest decline in the JCI due to the Covid-19 pandemic - following the first report of confirmed cases entering Indonesia in early March. The JCI started to touch the psychological position of 5,000 points again in June, but still, this condition was almost 30% lower than the previous 6 months (Olivia, Gibson, and Nasrudin, 2020).

In general, Salisu, et al. (2020) noted that the performance of stock exchanges in 24 developing countries received a greater negative impact during the Covid-19 pandemic than the performance of stock exchanges in 21 developed countries (country classification based on Morgan Stanley Capital International / MSCI). The decline in investor confidence during the

pandemic has prompted investors to avoid the risks that exist in developing countries. Bonardi, et al. (2020) show that developing countries experience difficulties in implementing high-effectiveness social restriction policies during pandemics so that it can affect the transmission of disease in these countries.

Vaccine Development, "Game Changer" the Global Awaited

Vaccine development is awaiting hope during a pandemic to become a "game-changer" for the recovery of social and economic conditions. This is a strategy in many countries of controlling the outbreak so that it can be handled by the health care system, while important economic activity can be restored early. This is done by slowing the spread of the virus (flattening the curve of the addition of confirmed cases / flattening the curve), reducing infection due to transmission, and reviving the world economy (Czerny, et al. 2021).

Unfortunately, vaccine development is not an easy matter for even the leading pharmaceutical industry. Vaccines to treat diseases caused by a virus cannot be presented in the blink of an eye. According to Scheppeler (2021), vaccine development takes a long time of about 10 to 15 years, full of uncertainty to enter into mass-scale production intended for community vaccination programs. In another study from the Biotechnology Innovation Organization, Biomedtracker and Amplion noted, of the vaccine candidates undergoing clinical trials in humans during 2006-2015, only one-sixth of them had the final approval or permit for large-scale production (Chan, et al., 2021).

The echo of the development of the Covid-19 vaccine has been widespread since the second quarter of 2020. In July 2020, more than 20 public and private agencies in the world competed to produce the Covid-19 vaccine (WHO, 2020 in Brem, et al., 2021). Moderna, a pharmaceutical giant from the United States, was the first to announce the development of this antiviral - the vaccine is said to be capable of clinical trials in humans only 42 days after identification. However, it takes longer between 12-18 months to be able to produce for the needs of the wider community (Kucher, et al., 2020) which is influenced by clinical studies involving more volunteers in order to ensure the effectiveness of the vaccine.

The Covid-19 vaccine with high effectiveness is indeed a top development priority in the world. However, some countries are ready to grant emergency use permits or conditional consent on public health grounds. This means that the vaccine can be used for the public before it is licensed - not even completing the ongoing clinical trials. At the end of 2021, Pfizer / BioNTech's Covid-19 vaccine will be the first COVID-19 vaccine approved by the United States Food and Drug Administration (FDA) followed by a vaccine from Moderna for vaccination in the US. Meanwhile, Britain, Bahrain, Canada, and Mexico have also agreed to the emergency use of the Pfizer / BioNTech vaccine to tackle COVID-19. On the other hand, China and Russia have each approved and administered the CoronaVac and Sputnik V vaccines, without waiting for the final clinical trial results (Chilamakuri and Agarwal, 2021).

As of January 31, 2021, a total of 59 countries have started vaccination. The United States is the country with the highest total number of Covid-19 vaccine doses given to the public, followed by China, the European Union, Britain, and India until early March 2021. Meanwhile, Indonesia has recorded a vaccine dose of 3.02 million per March 2, 2021, not far different from Bangladesh (Our World in Data, 2021) (Figure 3). In the short term, this strategy for the emergency use of vaccines could overcome the unprecedented pressure of global regulators on public health, economics, and politics to provide a vaccine. But over time it could obscure actual trial results and diminish confidence in vaccines. Therefore, a report with good transparency is needed during emergency use (Singh and Upshur, 2020).

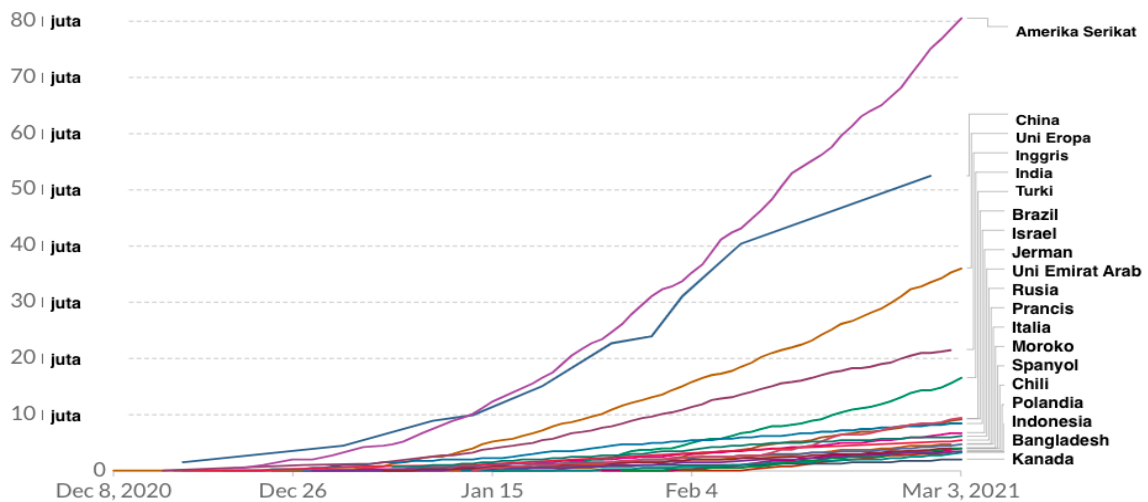


Figure 3. Doses of Covid-19 vaccine given to the public

Source: (Our World in Data, 2021)

Covid-19 Vaccine, Strong Sentiment of Stock Market Investors

Vaccines are medical products that have gone through strict procedures before being released to the public. Starting from pre-clinical evaluation, three phases of clinical trials in humans to the administration process, it is not easy to get distribution approval from the authorities. Any potential breakthroughs documented during this phase of vaccine development could affect general economic projections. The World Bank (2021) projects the world economy to appreciate by 4% in 2021, after experiencing a significant contraction of -4.3% in 2020 due to Covid-19 (Figure 4). The global economy has started this body with the assumption that vaccines are increasingly available and that Covid-19 vaccinations have been intensively given in many countries during this year.

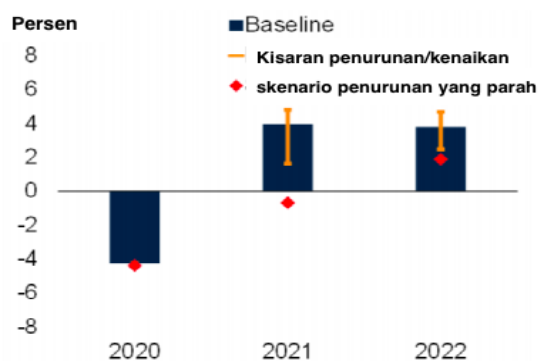


Figure 4. Scenarios for global economic growth

Source: (World Bank, 2021)

Not only the global macroeconomy, but the presence of vaccines also supports investor confidence which in turn boosts stock market performance and returns. Acharya, et al. (2021) noted that the US stock market, which had depreciated 40% –50% during the outbreak of the Covid-19 pandemic since February and March 2020, has recovered strongly within six months. One convincing narrative for market recovery is progress in vaccine development. These results are derived from research linking vaccine development transitions and stock market returns (Figure 5).

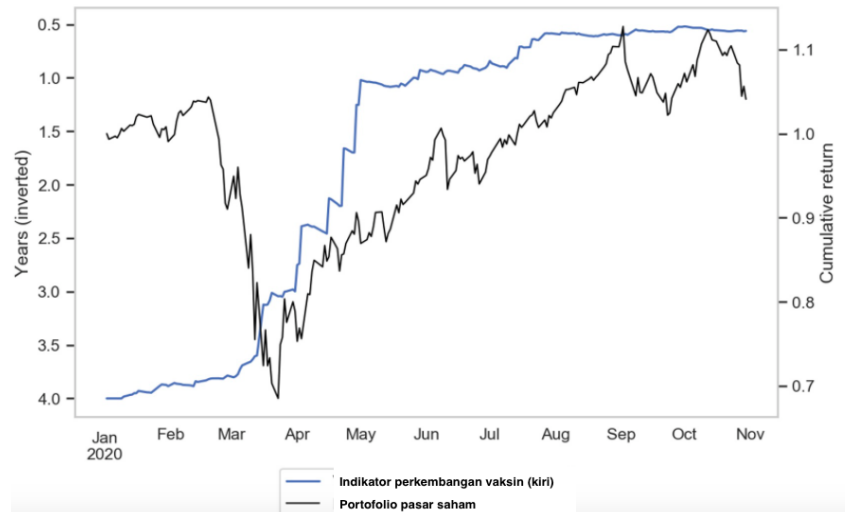


Figure 5. Trends in US stock portfolio yields and indicators of the progress of new vaccines

Source: (Acharya et al., 2021)

However, it turned out that the stock market recovery did not go hand in hand. Chan, et al. (2021) saw the S&P 500 return to pre-pandemic levels ahead of the British FTSE 100 stock index, the German DAX stock index, the Japanese stock index Nikkei 225, and the Hong Kong Hang Seng Index. However, the improvement in the stock index of developed countries is still better because it responds faster to vaccine development compared to stock markets in developing countries. This is related to the ability of developed countries to buy the Covid-19 vaccine than developing countries (Chan, et al., 2021). Indeed, the presence (and delivery) of an effective vaccine is considered a surefire event that will end the pandemic and result in a strong economic recovery. But stock prices - which reflect future expectations - will continue to move voting in line with economic development conditions resulting from credible progress in vaccine development (Acharya et al., 2021).

In particular, global investors are paying significant attention to the medical industry because of its important role in containing the spread of the Covid-19 pandemic and improving public health - which can spur economic recovery and social conditions (Lazonick and Tulum, 2011). When there is no deemed sure way to curb the rate of cases caused by the Coronavirus, investors also allocate their funds to shares of medical companies to avoid risks. However, the medical company in question is a company that is able to increase cash flow in the midst of vaccine development during a pandemic, is able anticipate the demand for medical devices, chemical drugs, and intensify future research (Sun, et al., 2021). With the ability to obtain information and analyze it, institutional investors will be more confident about the future of medical stocks than individual investors, which may be significantly driven by fear (Sun, et al., 2021). A careful calculation needs to be improved by investors in choosing stocks because the cost of wrong investment decisions during an outbreak is higher than the normal period (Donadelli, et al. 2017).

On the other hand, news of vaccine development has pushed technology stocks whose prices continue to climb amid the adoption of new habits of society during the pandemic (remote activity) - the price is slowly falling. Investors take advantage and choose to invest in sectors that are considered to be experiencing recovery after being hit hard by the pandemic (Oxford Analytica, 2020).

The Role of Government Policy dsuring Vaccine Development

When vaccines are available, there are still other challenges to increase investor confidence and the stock market, namely the realization of vaccines for the wider community. There are a number of factors that must be considered by the government, ranging from logistical feasibility (need special treatment for vaccines, especially storage at low temperatures), a guarantee of a distribution, cost of vaccines, availability of supplies. Archipelago countries such as Indonesia are at greater risk of facing this challenge. In addition, there is the challenge of determining the priority targets for vaccine recipients - where the government has the responsibility to ensure protection for those at high risk such as the elderly and health workers in particular to reduce mortality rates. In addition, the public must still be asked to comply with strict health protocols until community immunity (herd immunity) is achieved through the minimum target vaccine (Ophinni, et al., 2020).

The government will also be faced with a high budget to pay for public vaccinations. This is not easy because the pandemic has affected the country's economic growth with a depth and duration that is still unpredictable. Funding for vaccination programs in the medium and long term when the economy is full of uncertainty should still be guaranteed and not considered a cost burden because it should be considered an "investment" in the future. In order to maintain this allocation of funds in the health sector, the government needs to expand fiscal space through efficiency in other public sectors. Cooperation between the central and local governments must also be increased so that vaccine delivery can be more effective when budgets are limited (Suwantika, et al., 2020).

International cooperation has also provided access for various countries in the world - especially those with financial pressure - to get access to the Covid-19 vaccine. One of them is through the global Covid-19 Vaccines Global Access (COVAX) initiative led by Gavi, the Vaccines Alliance, WHO, and the Coalition for Epidemic Preparedness Innovation (CEPI), supported by the countries they serve and with financing for the purchase of vaccines, to ensure people around the world have fair access to the COVID-19 vaccine. This access is particularly for low-income and middle-income countries (Figueroa, et al., 2021).

Not only vaccinations, but government policies with regulators through fiscal and monetary stimuli are also another key to supporting economic recovery from the Covid-19 pandemic. This recovery includes improvements to the stock market performance. However, the government may exit their stimulus policy sooner than initially thought, when the mass vaccine program begins to roll out. This is not the right step because vaccines have varied success rates in overcoming Covid-19 (Chan, et al., 2021). Even the results of the study by Acharya et al. (2020) predict an early withdrawal of monetary and fiscal stimulus during a pandemic will ultimately "reduce the capacity" of vaccines to reverse the economic impact of the labor and consumption sectors. This means that the impact of vaccine development will be negative if only relied on alone to improve the economy.

Development for Subsequent Research

Research on investor sentiment continues to develop to examine the factors that influence investors' personal confidence in the conditions of future cash flows and their investment risks (Baker and Wurgler, 2007; Sun, et al., 2021). Subsequent research can continue to further explore investor sentiment and its impact on the stock market when vaccinations have rolled out and the announcement of a new variant of the Corona SARS-CoV-2 virus mutated. The methodology used can be through a study of media coverage, a concern index, stock market performance, and interviews with experts.

Medically speaking, Covid-19 is not only about developing the vaccines that exist today, but also about understanding its origins, evolution, mutations, and, consequently, life in order to find a powerful antidote. The answers to these questions would take months if not years (Phan and Narayan, 2020). This pandemic is not expected to end until there is a global vaccine that protects the effects of severe disease and creates herd immunity (Wouters, 2021). This means that the effectiveness of the vaccine will be tested in the presence of a mutated virus whose characteristics have not been recognized and there needs to be a study of the sentiment of stock market investors to respond to this development.

Conclusion

Reports on each stage of vaccine development are needed by pharmaceutical agencies to continue the stages of vaccine production until finally, they can get permission for mass use by the relevant authorities. Advances in the stages of vaccine production conveyed through scientific journals and media coverage have received high appreciation from stock investors, especially after vaccine candidates have passed clinical trials in humans. This investor sentiment also lifted the performance of the stock market, especially stocks of medical companies. However, investor sentiment cannot rely solely on vaccine development. Government and regulatory stimulus policies also play a role in being able to restore investor confidence in the recovery of social and economic conditions, including the stock market.

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