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Central Bank Policies of Fragile Five Countries in the Covid-19 Process

Covid-19 Sürecinde Kırılgan Beşli Ülkelerin Merkez Bankası Politikaları

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Abstract: The Covid-19 pandemic has been a trouble and deeply affected the economic conditions of countries. Economy administrators and particularly central banks have been tested seriously in this period. In this period, one of the essential tasks of central banks is to provide the need of liquidity of markets. However, the main objective of Central Banks is price stability. Monetary policies should be applied sensitively by central banks, especially in crisis periods. While liquidity needs of markets taking place, central banks intervene and effort to support declining liquidity. This study examined central banks' monetary policies in the fragile five countries (Turkey, Brasil, India, Indonesia, and South Africa). We investigated these countries' central bank policies, including interest rate, inflation, central bank reserve, exchange rate, and fragile states index in the pandemic period. We determined that the most fragile country among the five countries is Turkey according to the fragile states index, inflation, interest rate, and central bank reserve in the pandemic period.

Keywords: Central Bank, Monetary Policy, COVID-19, Fragile Five Countries, Inflation

JEL Classification: E31, E43, E52, E58

Öz: Covid-19 salgını oldukça sıkıntı yarattı ve ülkelerin ekonomik koşullarını derinden etkiledi. Ekonomi yöneticileri ve özellikle merkez bankaları bu dönemde ciddi anlamda sınandı. Böyle dönemlerde merkez bankalarının asli görevlerinden biri piyasaların likidite ihtiyacını sağlamaktır. Ancak Merkez Bankalarının temel amacı fiyat istikrarıdır. Para politikalarının özellikle kriz dönemlerinde merkez bankaları tarafından hassas bir şekilde uygulanması gerekmektedir. Kriz dönemlerinde, piyasalarda likidite ihtiyacı ortaya çıkar ve merkez bankaları devreye girerek azalan likiditeyi destekleme çabası içerisine girerler. Bu çalışmada kırılgan beşli ülkelerdeki (Türkiye, Brezilya, Hindistan, Endonezya ve Güney Afrika) merkez bankalarının para politikaları incelenmiştir. Pandemi döneminde biz bu ülkelerin faiz oranı, enflasyon, merkez bankası rezervi, döviz kuru ve kırılgan devletler endeksi gibi merkez bankası politikalarını araştırdık. Pandemi döneminde kırılgan devletler endeksi, enflasyon, faiz oranı ve merkez bankası rezervine göre beş ülke arasında en kırılgan ülkenin Türkiye olduğunu belirledik.

Anahtar Sözcükler: Merkez Bankası, Para Politikası, COVID-19, Kırılgan Beşli Ülkeler, Enflasyon

JEL Sınıflandırması: E31, E43, E52, E58

1. Introduction

Novel coronavirus came into our lives in 2020. The first case has seen in mid-December 2019 in China. Afterwards, it spread to the whole World very rapidly and named pandemic by WHO. There have been 127.906.826 confirmed cases, and 2.788.809 deaths stand on 31 March 2021 worldwide (World Health Organization - WHO, 2021). Although the fatality rate of COVID-19 was %2,18 at the end of March 2021, it was %4,96 a year before.

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While the novel coronavirus (COVID-19) outbreak occurs a vital health emergency to the entire world, it also significantly affects economic conditions. Measures are taken into account to avoid negative effects of the outspread of the epidemic in individual consumption habits, production processes and employment. Policymakers are implementing various policies to overcome against possible consequences of the epidemic in the entire world. On the one hand, central banks have been taking steps to provide liquidity; on the other hand, they have been taking measures to support households and companies that most affected by the epidemic by fiscal policies (Central Bank of the Republic of Turkey - CBRT, 2021).

The monetary policy statements of the central bank play a crucial role in disseminating information to financial markets in the future of the economy. Erstwhile, the monetary policy decisions were made in secret regardless where it was made. However, transparency in monetary policies decisions has become very important in todays World (Rai, Rojer & Susanna, 2021).

United States Dollar (USD) is the indicative currency that dominates as the currency of foreign deposits over the World (Akalin & Prater, 2015). For this reason, even the American stock market might become a reference for the policymakers in settling monetary policies in some countries. Furthermore, having an indicative currency makes the USA the main reference for policymakers in the world. The interest policy of the FED becomes a reference to the policymakers of the countries (Mukhlis, Hidayah & Retnasih, 2020).

Morgan Stanley published a report that some emerging market countries's (Turkey, Brasil, Indonesia, India, and South Africa) currencies are considerably affected from FED (the US Central Bank) policy and participated a fragile structure in August 2013. James Lord, who was a Morgan Stanley analyst defined these country group as “Fragile Five”. Thus, these countries have been called out as "Fragile Five" since then. These five countries were highly dependent to FED policies due to the problems in current account deficit and inflation, moreover low economic growth potential. National currencies of these five countries lost their value against dollar, due to the need to foreign investment on account of finance the persistance of economic growth. (Lord, 2013; Ünver & Doğru, 2015; Bayat, Kayhan & Taşar, 2018; Chadwick, 2019; Kırca & Canbay, 2020). Fragile five countries experienced continuing problems because of the change in the direction of the capital flows in 2015; the direction of the capital flows turned to developed countries from emerging markets. These continuing problems also affected other emerging markets, such as Chile, Colombia, Taiwan, Singapore, etc. As a result of this, the “Troubled Ten” term was created by Morgan Stanley analysts in mid-2015 which was a kind of expansion of the “Fragile Five” term. These countries are Brasil, Chile, Colombia, Peru, Russia, Singapore, South Africa, South Korea, Taiwan, and Thailand (Chadwick, 2019).

Although the effects of COVID-19 decreasing with the restrictions and vaccination, it was quite hard for the whole world at the beginning of the pandemic. The aim of this study is to find out where Turkey stands, especially in the pandemic period among the fragile five countries. To do so, we compared the Central Bank of the Republic of Turkey and the other fragile countries' central banks in terms of inflation, interest, exchange rate and reserve between 2019M1-2021M2, including the pandemic period.

2. Studies About Fragile Five Countries in the Recent Years

Considering the studies conducted for the fragile five countries in recent years, Önder, Taş & Hepsen (2015) evaluated these countries’ economic performance by applying Analytic Network Process and TOPSIS approach during the 2001-2013 periods. They found Turkey had the most fragile economy in the global financial crisis (2008-2009). However, the Turkish economy improved quickly after 2008-2009; India also had a stable economy. Ünver & Doğru (2015) found a statistically meaningful relationship between fiscal sustainability and gross domestic product (GDP), exchange rate, total reserves, external debt, energy imports, credit to the private sector, current account balance applying the Fully Modified Ordinary Least Square (FMOLS) estimator. Ümit (2016), presenting significant findings of the independent policy applicability of central banks, applying unit root tests with multiple structural breaks, determined that central banks of South Africa and India where real exchange rates were stationary were not influenced to establish exchange rate stability could perform an independent monetary policy. However, the central banks of Turkey, Brasil, and Indonesia could not achieve an independent policy in reducing the risks that real exchange rate volatilities would produce in this study. Simdi & Seker (2017) examined structural breaks of these countries’ currencies between 2010- June 2013 and July 2013- 2016 against the USD dollar. While the Turkish Lira had four structural breaks, the other fragile five countries only had one break in the first study period. Besides, in the second period of the study, all countries had only one structural break.

The studies examining long-term association and causality, Bayraktar, Taha & Yildiz (2016) found a statistically significant relationship in oil prices with both current account deficit and the GDP using Panel Unit root tests, Kao residual cointegration test, and Panel Pairwise Granger Causality Test. There was a long-term association between oil prices and current account deficit as determined, and this causality was one-way from oil price to current account deficit. Bayat et al. (2018) examined the Fisher effect using panel cointegration and panel causality test. The bi-directional causal association between interest rate and inflation rate found only in Brasil and Indonesia. Conversely, there is no causation linkage in India. Furthermore, one-way causality found interest rate to consumer price index in South Africa and Turkey. The findings indicate that the Fisher effect exists only in Indonesia and Brasil. Akbaş (2020) revealed that the impact of the exchange rate on the inflation rate was more substantial than the impact of the interest rate on the inflation rate.

3. Central Banks in the COVID-19 Crisis

Financial stability generally occurs when there is not financial market fluctuations nor banking crises in the economy (Fabris, 2018). Central banks use different tools to achieve the objectives of price and financial stability. These tools are divided into two groups; direct and indirect monetary policy instruments. Whereas direct instruments involve intervention to regulate prices or quantities, indirect instruments are market-based instruments that are affecting money markets. Direct monetary policy instruments determine prices or quantities using regulations. For example, credit ceilings which is a direct monetary policy instrument, commonly used to impact balance sheets of commercial banks. Moreover, interest rate controls and the direct lendings by central banks could be counted in the most common types of direct monetary policy instruments. Indirect monetary policy instruments commonly made to effect the central bank money within country. For example, having an impact on the supply - demand conditions in the market is a indirect monetary policy instruments. Moreover, reserve requirements and discount operations could be counted in the most common types of indirect monetary policy instruments (Alexander, Baliño, & Enoch, 1995, p. 2-6; Mercan & Şenbay, 2020).

Price stability, financial stability, stabilization of exchange rate, interest rate stability, employment, and economic growth are the main concerns of the central banks. In addition, the central banks use major monetary policy tools to achieve substantial monetary policy goals. While using the instruments, the central banks generally use them in the most appropriate way (Mercan & Şenbay, 2020).

One of the most important thing is effective governance for the transperant central banks that eager to reach their targets. This suits to central banks that purely paying attention to stabilizing the price and for the central banks that have additional authorization in financial stability. The governance of central banks is mainly related to independece, internal governance and accountability/transparency. Independence and accountability/transparency pillars are the most populer ones to tackled, accross economists who eager to preserve negative political impacts on the monetary decision making. Nowadays, it is common to have crisis, especially in banking industry. Thus, central banks are the ones that struggling to save the economies. For instance, they could come to deal with liquidity and solvency issues of the commercial banks due to the crisis. Because of that, central banks have started to got far better attention than before (Khan, 2016).

The framework of internal governance in central banks is demonstrated in Figure 1.

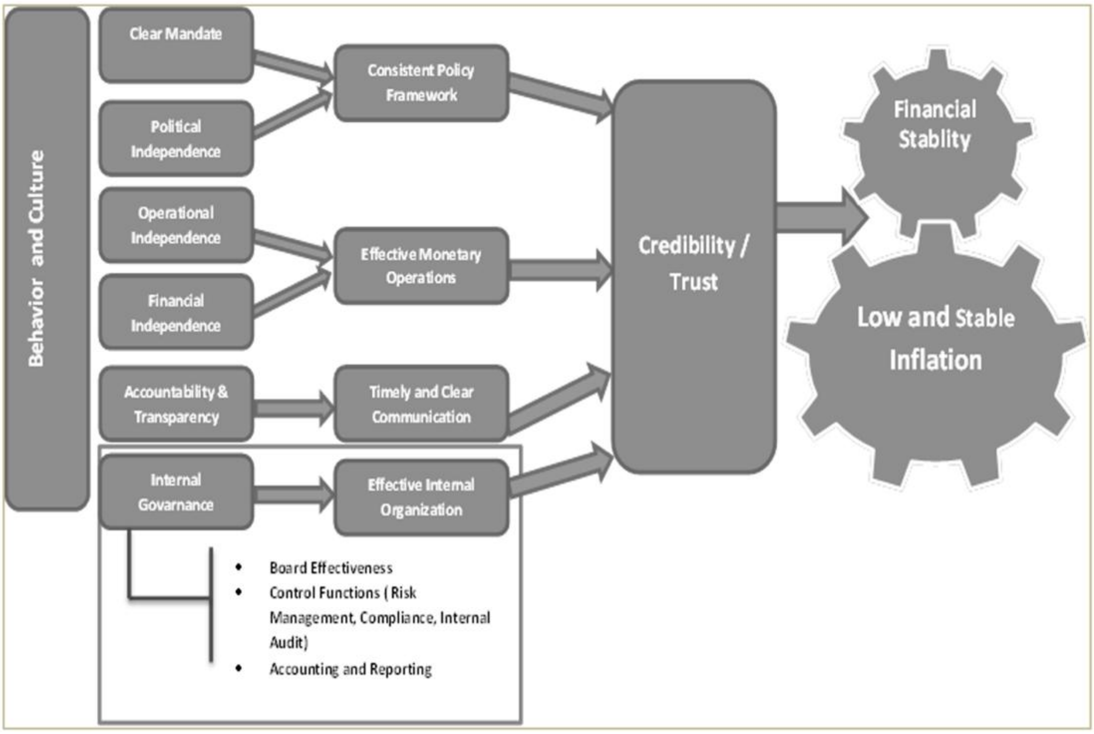

Figure 1. Framework of Internal Governance in Central Banks[1]

Source: Khan, 2016.

Central banks had seemed pretty much excellent in conducting a monetary policy before the 2007/08 economic crisis. According to the elected government's inflation target, it was expected that Central banks had operational independence to conduct monetary policy by varying short-term interest rate. However, it is commonly admitted that this method does not bring %100 acquisition of financial stability nowadays (Goodhart, 2011).

[1] We tried to stick to its source within the framework of our skills.

Another crisis that hit hard to the world is the novel coranavirus which have effects on health systems and economies as well. The financial conditions tightened with the COVID-19 outbreak and many central banks have had provided substantial amount of liquidity to ease the economic struggles. COVID-19 pandemic triggered extraordinary volatility in security and FX markets with the tigtening liquidity structure. COVID-19 pandemic is the second crisis that have an impact thorugh worldwide in the last 15 years. Moreover it is a crisis that which is not easy to compare the previous ones. For instance, unheard-of economic upheaval, uncertainty in health conditions and extreme leverage of the non-financial corporate sector in AEs are the main differences between 2007/08 crisis with COVID-19 pandemic crisis (International Monetary Fund - IMF, 2020; International Monetary Fund - IMF, 2021).

The information of Central Banks of fragile five countries is given in Table 1.

Table 1. The Information of Central Banks

	Turkey	Brasil	India	Indonesia	South Africa
Central Bank	Central Bank of the Republic of Turkey	Banco Central Do Brasil	Central Bank of India	Bank Indonesia	South African Reserve Bank
Established date	1931	1964	1935	1951	1921
Purpose	Price stability	Purchasing power stability of the currency and soundness of the financial system	Price stability and ensuring credit flows to productive economic sectors	Price stability	Price stability and sustainable economic growth
Inflation-targeting monetary policy framework	2002	1999	2015	1999	2000
Inflation Target for 2020	5.00% +/-2%	4.00% +/-1.5%	4.00% +/-2.0%	3.50% +/-1.0%	3.00% - 6.0%
Inflation Target for 2021	5.00% +/-2%	3.75% +/-1.5%	4.00% +/-2.0%	3.00% +/-1.0%	3.00% - 6.0%
Currency Unit	Lira/ ₺ /TRY	Real/ R$ /BRL	Rupee/ ₹ / INR	Rupiah/Rp/IDR	Rand/R/ZAR
First Confirmed COVID-19 Case	11.03.2020	26.02.2020	30.01.2020	2.03.2020	5.03.2020
First COVID-19 Related Death	19.03.2020	18.03.2020	13.03.2020	11.03.2020	28.03.2020

Source: The authors designed the table with information obtained from the central banks of the fragile five countries, the World Bank and WHO website.

Central banks that have inflation-targeting regime should consider the exchange rate. If they can manage the exchange rate decently, they could get rid of inflationary pressure. For this reason, central banks have to conduct policies suitable to market's circumstances. However, political authorities' targets prevent to conduct of policies suitable to market's circumstances. Thus, the credibility of the central banks is being questionable and ending up with an unsuccessful exchange rate management. To sum up, then, central banks have to be independent enough to have a decent exchange rate management and weaken inflationary pressures (Akbaş, 2020).

It can be seen from Table 1 that price stability is the common purpose of central banks. According to the table, Turkey has the highest inflation target both for 2020 and 2021. Furthermore, the first confirmed COVID-19 case was reported in India at the end of January. A little while later, the virus spread to the other fragile countries between late February and the beginning of March.

3.1.Turkey

The Central Bank of the Republic of Turkey was taken measures under four major in the pandemic period; 1) providing flexibility to banks in in liquidity management such as Turkish lira and foreign currency, 2) securing the continuance of credit flows to the real sector and supporting exporting companies, 3) Backing up exporting companies cash flows with rediscount loan arrangements, 4) making reinforcement in the monetary transmission mechanism by supporting the government securities market liquidity. To do so, the central bank reduced interest rates from 100bp to 9.75% as a first precaution in March. Moreover, the reserve ratio of foreign currency deposits decreased 500bp, and corporate debt maturity extended 90 days, the maximum limit ratio of the Open market operation limit is doubled (10%), interest rates reduced two more times, 100bp and 50 bp respectively, the tax on foreign currency purchase raised to 1% (Central Bank of the Republic of Turkey - CBRT, 2021).

Turkey's monthly inflation, interest and exchange rate between 2019M1-2021M2 are presented in Figure 2.

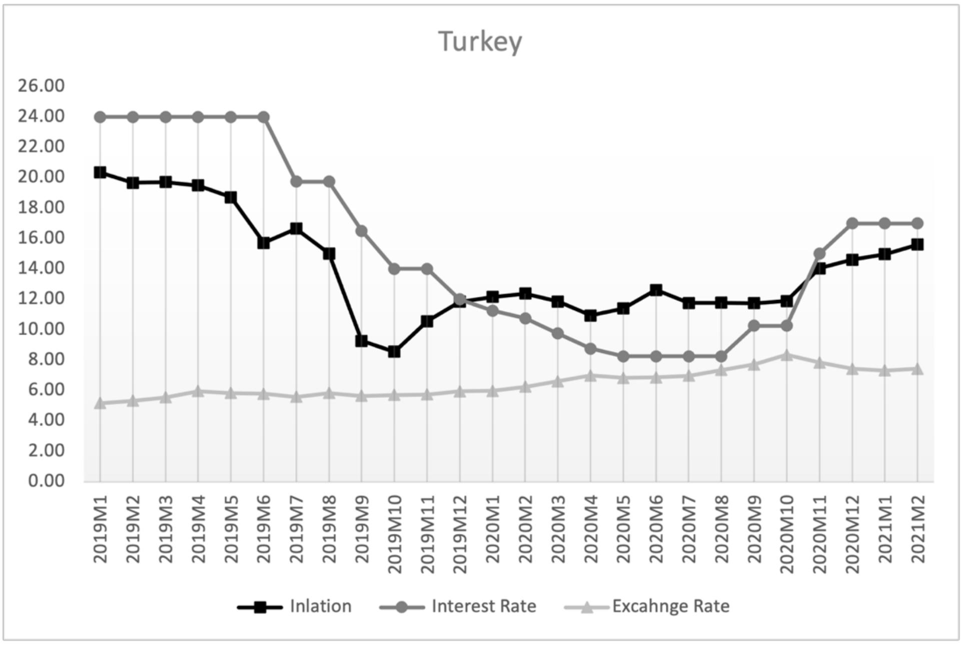

Figure 2. Inflation, Interest Rate and Exchange Rate in Turkey

It can be seen from figure 2 that the exchange rate of Turkey was rising between 2019-2021, which is depreciated more than %50 in this period. The interest rate and inflation of Turkey were too high at the beginning of 2019, and both of them started to decrease through at the end of 2019. Inflation was fluctuated around 12% a little while but raised at the end of 2020. However, the interest rate continued its decrease as a response to the COVID-19 pandemic until September 2020. Afterwards, it has increased sharply and has more than doubled in 2021 compared to August 2020. This rise also affected inflation, and it has fluctuated around the interest rate.

3.2. Brasil

Banco Central do Brasil (BCB) was taken measures under three major in the pandemic period; 1) supporting banks with liquidity, 2) securing the funding to the financial institutions that who are meeting the market's liquidity needs, 3) ensuring confidence in financial institutions for maintaining or expanding credit provision plans. These precautions make a possible expansion in the system liquidity of BRL 1,217 bn, amounting to about 16.7% of GDP. The National Financial System (SFN) in Brasil was adjusted to mitigate the effects of the crisis with the regulations on capital requirements to assure financial institutions better conditions to sustain credit flow.

These precautions potentially increase the credit supply by BRL 1,197 billion, approximately 16.4% of GDP (Banco Central do Brasil - BCB, 2020).

The monthly inflation, interest and exchange rate of Brasil between 2019M1-2021M2 are given in Figure 3.

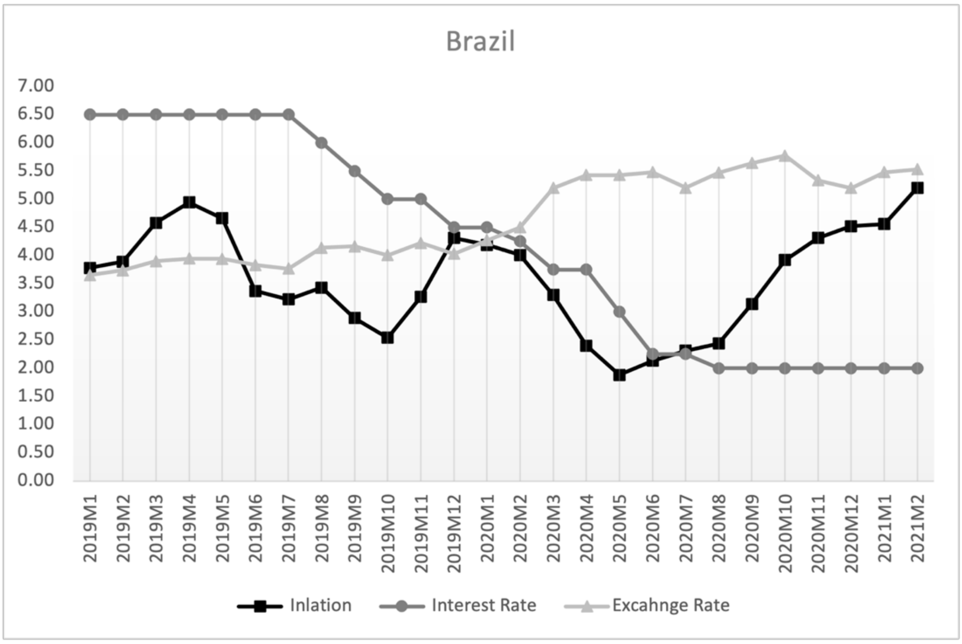

Figure 3. Inflation, Interest Rate and Exchange Rate in Brasil

It can be seen from figure 3 that, while the exchange rate is rising slightly more than %50, the interest rate is declining nearly %70. The sharp decline in the interest rate and sharp rise in the exchange rate is happening in the first half of 2020, pandemic. Inflaton of Brasil fluctuated in 2019. The inflation rate decreased in the first five months of 2020 and got the lowest point with %1.88. However, it started increase afterwards and got the highest point on Febr 2021.

3.3. India

One of the first precautions of The Reserve Bank of India (RBI) was cutting interest rates. On March 27, the reserve bank announced aggressive interest rate reductions against COVID-19 outbreak. Another precaution was taken for the international trade firms. Usually, the exporters' goods or software exports must be realised fully and repatriated to the country within nine months from the date of exports. However, the realisation period of export proceeds is extended due to the pandemic. Realisation and repatriation of export proceeds were changed from nine months from export date to fifteen months from export date. This measure allows the exporters to realise their receipts, particularly from COVID-19 affected countries, within the extended period and ensure significant flexibility to the exporters to negotiate in future export contracts with buyers abroad (Strategic Investment Research Unit - SIRU, 2020; Reserve Bank of India - RBI, 2020a; Reserve Bank of India - RBI, 2020b).

Figure 4 provides monthly inflation, interest and exchange rate for India over the sample period: 2019M1-2021M2.

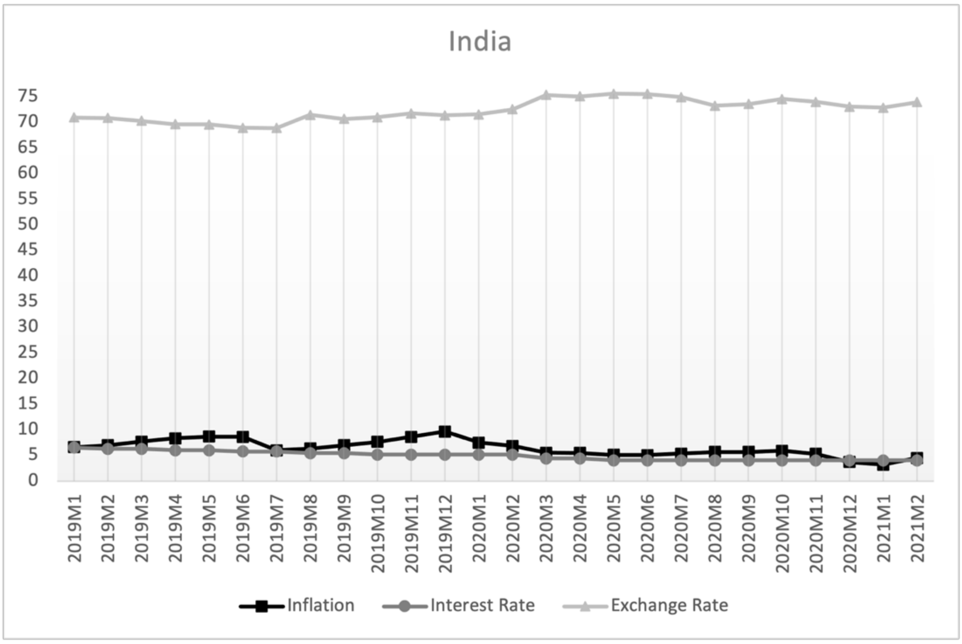

Figure 4. Inflation, Interest Rate and Exchange Rate in India

During the period covered by figure 4, the exchange rate remained almost steady. On the other hand, the inflation rate experienced strong fluctuations. The interest rate is decreased very slightly until Febr 2020. Afterwards, especially in March-April 2020, it is declined as a response to the global pandemic and got levelled.

3.4. Indonesia

The Bank Indonesia was taken measures under three major in the pandemic period; 1)improving liquidity, 2) ensuring monetary transmission, 3) providing credit flows to the economy. To do so, the reserve bank reduced interest rates from 25bp to 4.50% on March 19. Moreover, with the help of IDR 120 trillion (0.8% of GDP), business activities supported, and corporate taxes suspended. Additionally, Rp 583.5 trillion injected by the reserve bank to stabilise the rupiah in the first half of 2020. This measure is done with decreasing foreign exchange market reserves and buying government bonds in domestic markets. The government demand from parliament to increase the budget deficit ceiling set at 3% of GDP to stimulate the economy on March 23 (Akhlas, 2020; Bank Indonesia - BI, 2020; Eco Flash, 2020; Olivia, Gibson & Nasrudin, 2020).

Figure 5 gives information about monthly inflation, interest and exchange rate of Indonesia between 2019M1-2021M2.

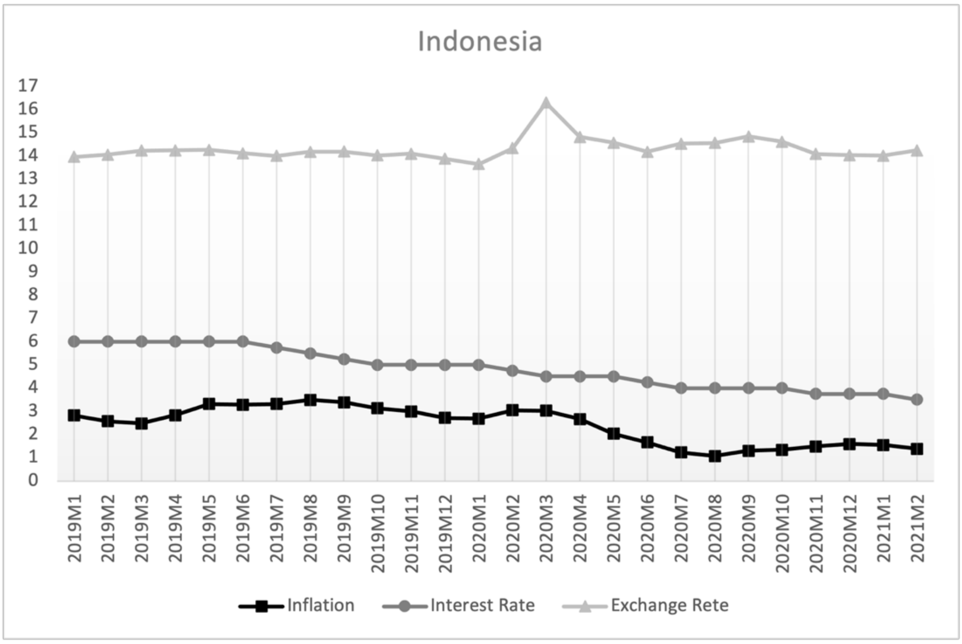

Figure 5. Inflation, Interest Rate and Exchange Rate in Indonesia

It can be seen from figure 5 that the exchange rate of Indonesia remained stable over the period, except in March 2020, when pandemic spread to Indonesia. Moreover, the interest rate was remained stable in the first half of 2019 and then started to decrease. At the end of the study period, it decreased more than %50. On the other hand, inflation fluctuated around %3 in 2019. Afterwards, it decreased with the interest rates and fluctuated around %1 in 2020.

3.5. South Africa

South African Reserve Bank (SARB) was taken measures under two major in the pandemic period; 1) stabilising the bond market, 2) providing liquidity in the financial market. To do so, the reserve bank reduced interest rates from 6.25% to 5.25% as a first precaution on March 19. The second set of precautions are; starting to hold repo auctions Daily, providing repo that has a more extended period than the familiar overnight period, Standing Facility lending and borrowing rates were reduced for better liquidity in the interbank market, and government bonds in the secondary market are bought to expand SARB'S monetary policy. The reserve bank continued to cut the interest rates by 100 bp to 4.25% on April 14. Moreover, the liquidity coverage ratio reduced to 80% from 100% avoid liquidity stress and allowing banks to increase their lending activity in theory (Bhorat, Köhler, Oosthuizen, Stanwix, Steenkamp & Thornton, 2020; Eco Flash, 2020).

Figure 6 illustrates the monthly inflation, interest and exchange rate of South Africa between 2019M1 – 2021M2.

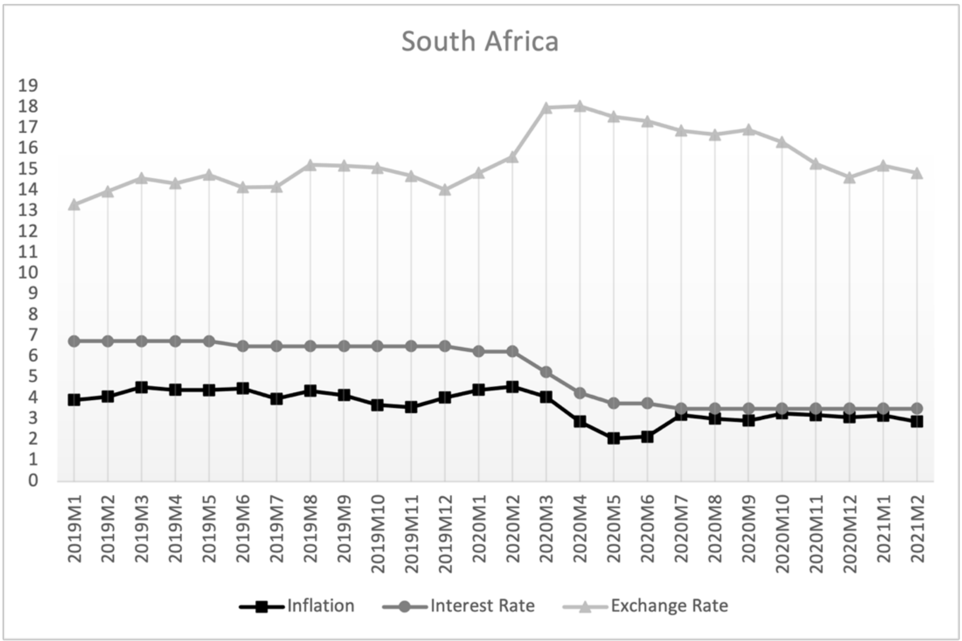

Figure 6. Inflation, Interest Rate and Exchange Rate in South Africa

According to the figure, the exchange rate of South Africa fluctuated around 14 in 2019. However, it started to increase at the beginning of 2020 with the COVID-19 pandemic and got the highest rate, as 18.06 in April. Afterwards, the exchange rate of South Africa slightly decreased. On the other hand, inflation and interest rate followed the same path. They were steady until Febr 2020. The reserve bank started to decrease the interest rates due to the global pandemic crisis in March 2020. Afterwards, both inflation and interest rates remained stable.

Table 2 provides some macroeconomic indicators: GDP, GDP per capita, unemployment, and inflation for each fragile five countries for 2019 and 2020.

Table 2. Some Macroeconomic Indicators of The Fragile Five Countries

	2019				*2020*			
	GDP (million $)	GDP Per Capita ($)	Unemployment (%)	Inflation (%)	GDP (million $)	GDP Per Capita ($)	Unemployment (%)	Inflation (%)
Turkey	761	9126	13.55	11.84	720	8548	13.02	14.60
Brasil	1839	8717	11.93	4.31	1434	6824	13.67	4.52
India	2868	2099	7.60	7.66	2709	1982	9.06	4.59
Indonesia	1119	4135	4.69	3.03	1060	3922	5.28	1.68
South Africa	351	6001	29.10	4.12	302	5067	32.50	3.10

Source: The authors designed the table with information obtained from the central bank websites of the fragile five countries and the World Bank.

From Table 2, it can be seen that all of these countries' GDP and GDP per capita decreased in 2020 because of the COVID-19 pandemic. The unemployment rate of the fragile five countries increased except Turkey in 2020. This result shows that the economic package that is implemented in Turkey reduced the possible effect of the pandemic in losing the job. While Turkey had the highest GDP per capita, it also had the highest inflation value both in 2019 and 2020. In addition, while the inflation rate increased in Turkey and Brasil, this rate decreased in other countries. Table 3 gives information about the national currencies against USD $.

Table 3. Depreciation of National Currencies in This Period

	Exchange Rate (Jan, 2019)	Exchange Rate (Jan, 2020)	Exchange Rate (Febr, 2021)	Depreciation 2019-2021(%)	Depreciation 2020-2021 (%)
Turkey	5.16	5.98	7.42	43.79	24.08
Brasil	3.65	4.27	5.53	51.50	29.50
India	70.95	71.54	73.92	4.18	3.32
Indonesia	13.97	13.65	14.24	1.93	4.32
South Africa	13.32	14.85	14.84	11.41	0.00

Source: The authors designed the table with information obtained from the central bank websites.

It can be seen from the table that Brasilian Real and Turkish Lira are the most depreciated currencies respectively, against USD $ in February 2021 compared to January 2019. While the South African Rand depreciated 11%, Indian Rupee depreciated 4%. Unlike others, the Indonesian Rupiah stayed stable against USD $. The results are similar for the highest depreciated currencies in the pandemic period as well. Brasilian Real is the most depreciated, and the Turkish Lira is the second most depreciated currency against USD $ in the pandemic period. The opposite result stood for South Africa, which has not had any depreciation within this period.

The information about central bank reserves is presented in Table 4 and Figure 7.

Table 4. Quarterly Reserves of Central Banks in Countries (billion $)

	Turkey	Brasil	India	Indonesia	South Africa
2019Q1	96.27	384.17	406.67	123.30	49.68
2019Q2	96.33	388.09	426.42	120.30	49.80
2019Q3	101.11	376.43	428.57	126.50	54.86
2019Q4	105.70	356.88	454.95	126.60	55.06
2020Q1	92.15	343.17	475.56	130.40	52.46
2020Q2	86.35	348.78	505.57	130.50	52.32
2020Q3	79.68	356.61	545.04	137.00	54.42
2020Q4	93.28	355.62	581.13	133.60	55.01
2021Q1	90.76	347.41	582.27	138.80	53.00

Source: The authors designed the table with information obtained from the central bank websites.

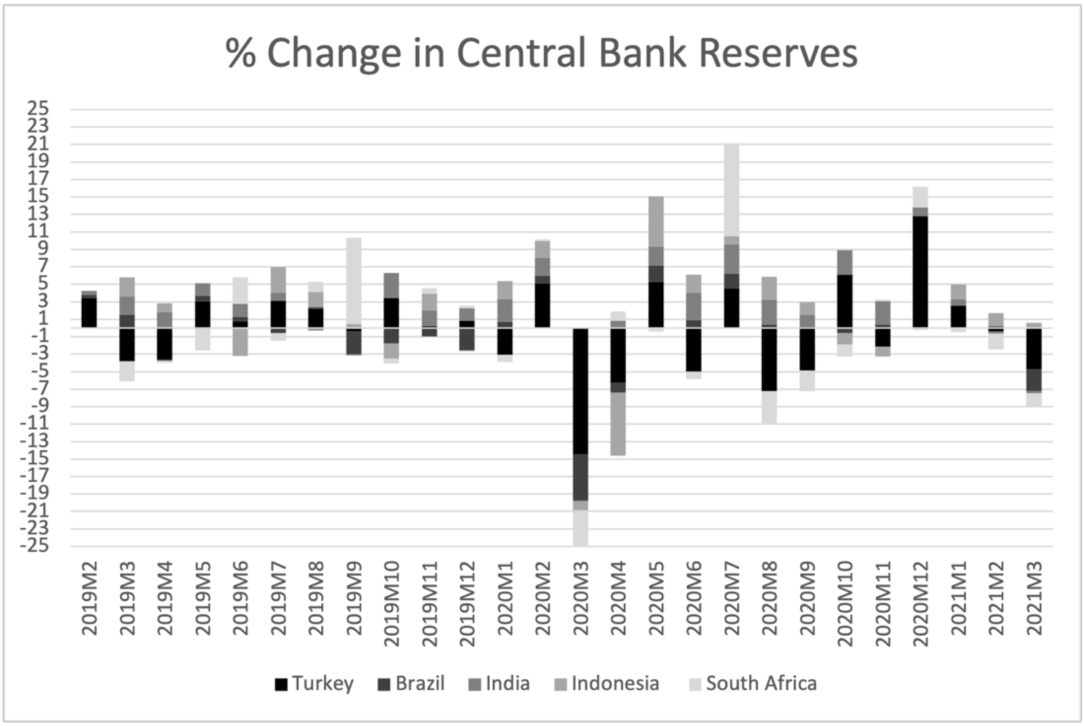

Figure 5. Monthly % Change in Central Bank Reserves

According to table 4, it can be seen that the reserves of India steadily increased from 2019 to 2021. Although the reserves of Indonesia and South Africa fluctuated, they increased like India within this period. However, there is a decrease occurred in South Africa and Turkey's reserves in the same period. Figure 7 gives a monthly change of the central bank reserves that allow us to see the reserves deeper. The main result in the figure that there is a significant decrease in March and April 2020. This sharp decrease probably occurred because of the precautions to the COVID-19 pandemic. In addition, Turkey is the leading country in losing its reserves in March and April 2020. Although Turkey had a positive reserve outlook in May, July and October, it eventually lost its reserves approximately 15% in the pandemic period and took first place in loss of reserves. South Africa and Brasil followed Turkey with a 2,6% and 3,7% decrease in the pandemic period, respectively.

The Fragile States Index (FSI) is a yearly ranking that outlines 178 countries' fragility according to the different pressures they face. This Index is derived from The Fund for Peace's proprietary Conflict Assessment System Tool (CAST) analytical approach. To reach the FSI score, millions of documents are analysing by experts and every country evaluated on twelve critical political, social and economic indicators with quantitative, qualitative, and expert validation. If the FSI score is lower, it is better. Lower score meaning lower fragility in the country (The Fund for Peace - FFP, 2021). The information about the Fragile States Index of Countries is given in Table 5.

Table 5. Fragile States Index of Countries (2019-2020)

	2019		*2020*		Fragility Rank Among Five Countries
	FSI	FSI Rank	FSI	FSI Rank	
Turkey	80.3	59	79.1	59	1
India	74.4	74	75.3	68	2
Brasil	71.8	83	73	75	3
South Africa	71.1	88	70.1	85	4
Indonesia	70.4	93	67.8	96	5

Source: The Fund for Peace - FFP, 2021. https://fragilestatesindex.org/data/

According to the Fragile States Index, Turkey was ranked 59th most fragile country in the world in 2019 and 2020. Brasil was ranked 83rd in 2019 but became more fragile in 2020 and ranked 75th. India was ranked 74th in 2019 and became more fragile in 2020 as Brasil and ranked 68th. Another country that became more fragile is South Africa, ranked 88th in 2019 and 85th in 2020. However, Indonesia was the only country that decreased its fragility in 2020, was ranked 93rd and 96th, respectively. Among these five fragile countries, only Indonesia's fragility decreased during this period, while Brasil and India's fragility increased considerably. Although Turkey is the most fragile country across these countries, the fragility of Turkey has not changed in 2020.

4. Conclusion

2020 was one of the most challenging years that everybody has ever lived. Novel coronavirus jumped into people's lives and have had many impacts on health, economics, social life, etc. The central bank is one of the main policymakers of a country that help to prevent the possible essential effect of the crisis. There are countries that developed, developing and under-developed in the world. The possible effect of the pandemic is far more powerful in developing countries due to some chronicle weaknesses.

For the reasons that have revealed in the former paragraph, we studied to evaluate the central bank's performance of fragile five countries (Turkey, Brasil, India, Indonesia and South Africa) in the pandemic period in this article. The central banks of the fragile five countries implemented expansionary monetary policies throughout 2019. In the first period of the pandemic, it continued its expansion policies as of March 2020. All central banks in this group reduced interest rates as a first precaution to boost economic growth. Another of the first implementation of the reserve banks in this group was providing liquidity to the economy.

However, Turkey started to separate from the group. Turkish Central Bank raised interest rates 200 bp in September, unlike other central banks. Since October of 2020, due to the increase in the inflation rate, Turkey's central bank began tightening its monetary policy implementation as well. High volatility of interest rates and inflation has occurred due to the policy change of central bank in 2020. Policy changes were observed more frequently in the Central Bank of Turkey among these five countries. The President of the Central Bank of the Republic of Turkey was changed twice during the COVID-19 period. There were not any presidential change that happened in other countries in this period.

When the value of national currencies is analyzed against USD, from January 2020 to February 2021, the highest depreciation happened in Brasilian currency as 29.50% loss, and the second depreciation happened in Turkish Lira with a loss of 24.08% in this pandemic period. The depreciation in Indonesia's and India's currency was 4.32% and 3.32%, respectively. South African Rand did not depreciate in the pandemic period, unlike others. Moreover, Turkey, South Africa and Brasil are found that losing their reserves in the pandemic period. However, Turkey has widened the gap and have got first place in losing its reserves.

Fragile States Index is supporting our results. It is detected that Turkey is the most fragile country in terms of inflation, interest rate and central bank reserve in the pandemic period in this article. According to the Fragile States Index, Turkey is also the most fragile country among sample countries both in 2019 and 2020. Among the five fragile countries, only Indonesia's fragility decreased during this period. While South Africa's fragility increased slightly, Brasil and India's fragility increased considerably.

There are some limitations of this research. This chapter provides evidence only the performance of central banks in terms of inflation, interest rate, exchange rate, central bank reserves and fragile states index. The findings of this study are of the fragile five countries, which are Turkey, Brasil, India, Indonesia, and South Africa. This study covers the pandemic period; this research could include a more extended period for these countries. Thus, future studies are encouraged to deal with a more extended period. Furthermore, forthcoming studies can use alternative variables to understand the economic performances of central banks. Future research should take into account the limitations of this study.

REFERENCES

Akalin, G. I., & Prater, E. L. 2015. "The global crisis of the late 2000s and currency substitution: A study of three Eastern European economies Russia, Turkey and Ukraine." *Journal of Central Banking Theory and Practice*, *4*(2), 5-22.

Akbaş, Y. E. 2020. "The effects of exchange rate pass-through and cost channel on price level: The case of fragile five countries." *Applied Economics*, 52(25), 2705-2722.

Akhlas, Adrian Wail. 2020. "Indonesia's Forex Reserves Drop $9.4b in March as BI Steps Up Efforts to Stabilize Rupiah." *Jakarta Post*, April 7, 2020. https://www.thejakartapost.com/news/2020/04/07/indonesias-forex-reserves-drop-9-4b-in-march-as-bi-steps-up-efforts-to-stabilize-rupiah.html (Accessed April 4, 2021).

Alexander, W. E., Baliño, M. T. J. & Enoch, M. C. 1995. "The adoption of indirect instruments of monetary policy." IMF Occasional Paper No: 126 Washington DC, 1995.

Banco Central do Brasil [BCB] 2020. "Macroeconomic Overview Update." https://www.bcb.gov.br/content/about/presentationstexts/BCB_Macroeconomic_Overview%20Update_%20XP_%20Live_%20BCB_Governor_Presentation_April_%204_%202020.pdf (Accessed April 4, 2021).

Bank Indonesia [BI] 2020. "Development of measures taken by BI in facıng COVID-19." https://www.bi.go.id/en/publikasi/ruang-media/news-release/Pages/Perkembangan-Langkah-Langkah-BI-dalam-Hadapi-COVID-19.aspx (Accessed March 3, 2021).

Bayraktar, Y., Taha, E. G. R. I., & Yildiz, F. 2016. "A causal relationship between oil prices current account deficit, and economic growth: an empirical analysis from fragile five countries." *Ecoforum Journal*, 5(3) 29-44.

Bayat, T., Kayhan, S., & Taşar, İ. 2018. "Re-visiting fisher effect for fragile five economies." *Journal of Central Banking Theory and Practice*, 7(2), 203-218.

Bhorat, H., Köhler, T., Oosthuizen, M., Stanwix, B., Steenkamp, F., & Thornton, A. 2020. "*The Economics of Covid-19 in South Africa: Early Impressions."* DPRU Working Paper, 202004.

Central Bank of the Republic of Turkey [CBRT] 2021. "Koronavirüsün Ekonomik ve Finansal Etkilerine Karşı Alınan Tedbirler." https://www.tcmb.gov.tr/wps/wcm/connect/TR/TCMB+TR/Main+Menu/Duyurular/Koronavirus (Accessed March 4, 2021).

Chadwick, M. G. 2019. "Dependence of the "Fragile Five" and "Troubled Ten" emerging market financial systems on US monetary policy and monetary policy uncertainty." *Research in International Business and Finance*, *49*, 251-268.

Eco Flash 2020. "COVID-19: Key measures taken by governments and central bank" https://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=38920 (Accessed April 3, 2021).

Fabris, N. 2018. "Challenges for modern monetary policy." *Journal of Central Banking Theory and Practice*, *7*(2), 5-24.

Goodhart, C. A. E. 2011. "The changing role of central banks." *Financial History Review*, 18(2), 135-154.

International Monetary Fund [IMF] 2020. "Central Bank Support for Spot and Derivative Foreign Exchange Markets." Special Series on COVID-19, February 19, 2021.

International Monetary Fund [IMF] 2021. "Central Bank Support to Financial Markets in the Coronavirus Pandemic." Special Series on COVID-19, May 6, 2020.

Khan, A. 2016. "Central Bank Governance and the Role of Nonfinancial Risk Management. International Monetary Fund." IMF Working Paper, WP/16/34.

Kırca, M., & Canbay, Ş. 2020. "Kırılgan Beşli Ülkeler için Phillips Eğrisi Analizi." *İktisadi İdari ve Siyasal Araştırmalar Dergisi,* 5(12), 130-140.

Lord, J. 2013. "EM Currencies: The Fragile Five (Global Outluk) (pp. 15–19)." Morgan Stanley Research. Retrieved from http://graphics8.nytimes.com/packages/pdf/business/MorganStanleyFragileFive.pdf (Accessed April 18, 2021).

Mercan, D., & Canbay, Ş. 2020. "The Operation of Credit Channel in Fragile Five Countries." *Research Journal of Politics, Economics & Management*, 8(1), 55-78.

Mukhlis, I., Hidayah, I., & Retnasih, N. R. 2020. "Interest Rate Volatility of the Federal Funds Rate: Response of the Bank Indonesia and its Impact on the Indonesian Economic Stability." *Journal of Central Banking Theory and Practice*, *9*(1), 111-133.

Olivia, S., Gibson, J., & Nasrudin, R. A. 2020. "Indonesia in the Time of Covid-19." *Bulletin of Indonesian Economic Studies*, *56*(2), 143-174.

Rai, A., Rojer Jr, G., & Susanna, E. 2021. "Central bank transparency and market reaction in Brazil, Chile, and Colombia." *Journal of Behavioral and Experimental Finance*, 30, 100475.

Reserve Bank of India [RBI] 2020a. "Monetary Policy Report, April 2020." https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/MPRAPRIL2020E3D4AD8245734F27B6C5688F22B4FA2F.PDF (Accessed April 5, 2021).

Reserve Bank of India [RBI] 2020b. "Monetary Policy Report, October 2020." https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/MPR0910200CB2848C2D8A40758A1FB7AE110E3F16.PDF (Accessed April 5, 2021).

Simdi, H., & Seker, A. 2017. "Analysis of fragility levels of fragile five in terms of exchange rates." *PressAcademia Procedia*, 3(1), 241-245.

Strategic Investment Research Unit [SIRU] 2020. "India's central bank announces more measures to fight Covid-19, April 30, 2020." https://www.investindia.gov.in/team-india-blogs/indias-central-bank-announces-more-measures-fight-covid-19 (Accessed April 3, 2021).

The Fund for Peace [FFP] 2021. "Fragile States Index." https://fragilestatesindex.org/data/ (Accessed March 27, 2021).

World Health Organization [WHO] 2021. "WHO Coranavirus (COVID-19) Dashboard." *https://covid19.who.int* (Accessed April 4, 2021).

Önder, E., Taş, N., & Hepsen, A. 2015. "Economic performance evaluation of fragile 5 countries after the great recession of 2008-2009 using analytic network process and topsis methods." *Journal of Applied Finance & Banking*, 5(1), 1-17.

Ümit, Ö. 2016. "Stationarity of real exchange rates in the "fragile five": Analysis with structural breaks." *International Journal of Economics and Finance*, 8(4), 254-270.

Ünver, M., & Doğru, B. 2015. "The Determinants Of Economic Fragility: Case of The Fragile Five Countries." *Akdeniz University Faculty of Economics & Administrative Sciences Faculty Journal*, 15(31), 1-24.