



WORKING PAPER

The Impact of COVID-19 on Emerging Markets

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Abstract

The COVID-19 pandemic is impacting global markets through unprecedented circumstances. Fears surrounding such a novel virus have led to dramatic market turbulence and massive falls in stock prices. In this paper, we explore the impact of COVID-19, in a comprehensive sample of 45 emerging countries. We track the performance of each of their markets during the outbreak, using major stock indices and we compute the volatility using a GARCH (1,1) model. Moreover, we report conventional and Islamic bond issuances and assess investors' perceptions towards credit risk by examining the premiums on sovereign credit default swaps. We then compare the results to the period of the global financial crisis. We find that, indeed, COVID-19 has struck the emerging countries harshly, driving sharp declines in stock market indices, causing an escalation in volatility levels, and widening the premiums on sovereign credit default swaps. However, such upheavals have not yet reached the levels of the global financial crisis. Finally, we examine the reactions of the IMF, local governments and central banks in response to the crisis.

JEL Classification: G01, G11, G12, G14, G15, H12

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Introduction

"WHO has been assessing this outbreak around the clock and we are deeply concerned both by the alarming levels of spread and severity, and by the alarming levels of inaction. We have therefore made the assessment that COVID-19 can be characterized as a pandemic." - World Health Organization (WHO) Director General (March 11, 2020).

The COVID-19 pandemic has caused an unprecedented public health crisis across the globe. It is the most serious global health crisis since the 1918 Spanish flu (Boissay and Rungcharoenkitkul, 2020). As of June 16, 2020, there are more than 7.9 million confirmed cases with 434,796 deaths in 213 countries and territories around the world (WHO, 2020). Regions hit hardest by the outbreak include the Americas (48%) and Europe (30%). A profound impact on the global economy is expected, amidst strict mitigation measures enforced to contain the virus. Severe lockdown measures, travel restrictions, border closures and economic shutdowns could lead to economic depression around the world (Barro et al., 2020). The COVID-19 pandemic is set to become one of the most economically costly pandemics in recent history (Boissay and Rungcharoenkitkul, 2020). In its world economic outlook, the International Monetary Fund (IMF) projected a decline in world output by 3% in 2020, due to the economic hardships caused by COVID-19 which has severely impacted growth across all regions (April, 2020).

Such economic turmoil could advance to the financial markets (Ramelli and Wagner, 2020) potentially leading to worse financial contagion than in the past (Gunay, 2020). Indeed, global financial market risks have elevated extensively in response to the pandemic (Zhang et al., 2020). "The spread of the virus in Europe and potentially in the U.S. is creating really difficult financial conditions in markets," said Sergi Lanau, deputy chief economist at the Institute of International Finance (IIF). Despite the fact that COVID-19 has severely impacted developed markets, emerging markets cannot tolerate a much smaller shock. Such contraction in global financial markets can significantly impact financial and macroeconomic conditions in emerging markets and place them under severe distress (Bergant et al., 2020). In fact, emerging markets have experienced the sharpest portfolio reversal on record - about \$100 billion or 0.4 % of their GDP (IMF, 2020). Some of the most vulnerable economies, which have been relentlessly hit, include the Middle East and Central Asia region. The growth rate in those regions is estimated to fall from 1.2 % in 2019 to -2.8% in 2020, a sharp decline worse than the hit from the 2008 global financial crisis or the 2015 oil price shock (IMF, 2020).

In this paper, our research objective is to examine the impact of COVID-19 on the emerging economies. Our sample consists of 45 countries that are included in the MSCI Emerging Markets and MSCI Emerging Frontier Markets Indices. Recent growing literature on the financial effect of COVID-19 concentrates on certain countries, mainly

with developed markets, however, until now, there is no comprehensive study investigating the impact on all emerging countries.

"The emergence of COVID-19 is perhaps proving to be the most significant 'Black Swan' event facing investors since the collapse of Lehman Brothers in 2008," *Banerji, 2020*. Reactions in developed markets to the high levels of uncertainty surrounding the pandemic were dramatic. They included massive historic drops in stock prices and huge spikes in volatility. For instance, The Dow Jones Industrial Average witnessed two of the largest single day drops in March 2020. Furthermore, the S&P 500 index fell by around 41% between February 19th, 2020 and March 23rd, 2020. Concurrently, volatility has reached unprecedented levels. The Chicago Board of Exchange Volatility Index (VIX) has been rising steadily since the middle of February. The United States of America has seen volatility levels that it has never seen since the early 1930s (Baker, 2020).

To highlight the impact of COVID-19 on investors in emerging economies, we study three dimensions in particular: stock market performance, stock market volatility, and sovereign default risk. We begin our empirical analysis by comparing the performance of the 45 countries' stock indices (as reported by Bloomberg) during the COVID-19 period (spanning January to May 2020) to the period of the global financial crisis (September to November 2008). We find that with, to no surprise, the month of March 2020 witnessed the largest drop in stock market indices of the emerging markets for 96% of our sample, due to the WHO announcement of COVID-19 as a pandemic. Amongst the emerging financial markets hit most severely by this pandemic are Vietnam (VNINDEX index) in the Asian region, Greece (ASE index) in the Eastern Europe region, Argentina (MERVAL index) in Latin America, and The United Arab Emirates (DFMGI index) in the Middle East/Africa region, with a sharp drop in their stock market indices of -24.9%, -22.5%, -30.28%, and -31.61% respectively, as of end of March 2020. Despite the remarkable decline in stock markets witnessed by the majority of countries in our sample, only 35% of countries had a larger drop in March 2020 compared to October 2008 (the month with the highest dip in emerging stock market indices in our study time frame), suggesting that the descent in the emerging stock markets has not yet reached the low levels experienced during the 2008 global financial crisis.

Next, to further study the reaction of stock market investors, we analyse the relationship between stock market risks and the effects of the COVID-19 outbreak, by examining the trend in volatility levels across our emerging countries during the pandemic and we investigate whether such volatility levels during the COVID-19 pandemic resemble or exceed those recorded during previous crises and recessions. First, we first employ a Generalised Autoregressive Conditional Heteroskedasticity (GARCH (1,1) model to estimate the volatility present in our sample of 45 countries during the first five months of 2020. Then, we compare such volatility with the period of the global financial crisis and

the 2015 oil price shock. We find that surges in volatility levels occur steadily during the first five months of 2020 for the majority of the sample, with at least doubled volatility levels for 59% of the sample by the end of April, 2020. Amongst the countries experiencing the greatest turbulence in stock market volatility are Vietnam (VNINDEX index) in the Asian region, Estonia (TALSE index) in the Eastern Europe region, Argentina (MERVAL index) in Latin America, and Mauritius (SEMDEX index) in the Middle East/Africa region, as of April 30, 2020, with volatility rocketing to 16.34% , 12.67%, 22.91%, and 30.77% respectively. Those spikes in volatility levels exceeded those experienced during the 2015 oil price shock for the majority of the emerging stock markets, however, they did not surpass those witnessed during the global financial crisis, except for Brazil which had a record high level of volatility (19.67% by the end of April, 2020) compared to its previously recorded level of about 17% in November 2008.

Furthermore, to gauge the level of credit risk premium demanded by emerging market investors, we examine the premiums associated with sovereign credit default swaps (CDS). Fender et al. (2012) document that sovereign CDS spreads for emerging markets are more strongly influenced by spillover effects during the global financial crisis and are more related to global and regional risk premiums than to country specific risk factors. Cayon et al. (2018) and Martinez et al. (2013) also document evidence of contagion transmission during the global financial crisis by analysing sovereign spreads. Investors are continuously monitoring the ability of emerging countries to meet their financial obligations, hence, we expect that, due to COVID-19 fears, credit risk levels are likely to soar and such fears should be reflected in increased sovereign CDS premiums. Indeed, we find that for all 45 countries in our sample, the sovereign CDS premium has dramatically increased during March 2020, compared to the end of December 2019. In many instances, percentage growth in CDS premiums skyrocketed to more than 200% percent, such as in India, Indonesia, Malaysia in the Asian region (with the highest increases in the region amounting to 240%, 237%, and 231%, respectively), Russia in Eastern Europe (235% increase), Argentina, Colombia, and Chile in Latin America (299%, 222%, and 210% , respectively), and Lebanon, Nigeria, and Qatar in the Middle East/Africa region (509%, 256%, and 256%, respectively). Consistent with the pattern that we found while comparing stock market indices and volatility, those remarkable increases in sovereign CDS premiums did not yet reach the maximum levels that occurred during the global financial crisis, except for Greece, Argentina, and Tunisia whose sovereign CDS premium levels peaked at 409.81, 28,012.10, and 797.58 basis points, respectively, during the COVID-19 period.

After documenting the significant impact of COVID-19 on emerging stock markets, next we explore the response of one of the major worldwide organisations responsible for ensuring the stability of the international monetary system - the IMF. We expect that, amidst such huge economic losses borne by emerging countries, the IMF should aim to

protect the most vulnerable countries and support economically troubled economies in restoring confidence. We find that the IMF has approved US\$12,174 million in financial aid to those emerging countries, in the form of Rapid Credit Facilities and Rapid Financing Instruments. 74% of the overall amount was granted to the Middle East/Africa region, with the greatest contribution being awarded to Nigeria (US\$ 3,400 million).

In addition to international organisational financial support, together, fiscal and monetary responses by local governments and central banks across the globe should be the first line of defence to act as a buffer to mitigate the economic hardships created by COVID-19 shocks, in attempts to ensure a sustained recovery and a stable financial system. "The size and persistence of the economic damage will depend on how governments handle this sudden close encounter with nature and with fear," explains Baldwin and Weder di Mauro (2020). Coordination and consistency from all policymakers in common response to the crisis is also key for preserving the stability of the global financial system and boosting economies. Hence, in our final analysis, we take a close look at the major fiscal and monetary responses enacted by emerging market governments and central banks and we identify whether common responses occur across those countries. We hand collect data on monetary and fiscal responses from the IMF website for our 45 countries in the sample. We find that a plethora of fiscal and monetary responses have been put in place to promote economic growth, enhance liquidity, and sustain businesses and jobs most affected by the pandemic.

Our paper contributes to the literature in three distinct ways. First, we contribute to the literature which studies stock market reactions surrounding general catastrophes, severe weather, and flu outbreaks (see, for example:McTier et al., 2013; Fleming et al., 2006; Lamb, 1998; amongst others). Second, we delve into the recent and growing line of literature which analyses the consequences of the COVID-19 pandemic on financial markets (see for example: Alfaro et al., 2020; Yilmazkuday, 2020; Baker et al., 2020; amongst others). Finally, we add to the literature on the responses of emerging markets to crisis and recessions (see, for example: Dooley and Hutchison, 2009; Dimitriou et al., 2013; Neaime, 2012; Sugimoto et al., 2014; amongst others). The remainder of this paper proceeds as follows. Section 2 discusses the growing literature on the impact of COVID-19 on financial markets. Section 3 presents our data and explains our empirical analysis. Section 4 reviews the responses enforced by the IMF, local governments and central banks towards mitigating the adverse economic effect of COVID-19. Section 5 provides the conclusion.

2. Literature review

Research on the financial effects of COVID-19 is still in its infancy, with most studies focussing on the impact of COVID-19 on the US and those countries majorly affected by the outbreak in terms of number of fatalities. Alfaro et al. (2020) note that values in the US stock market dropped in response to the pandemic. Yilmazkuday (2020) investigates the impact of the number of confirmed COVID-19 confirmed cases and deaths in the US on the performance of the S&P 500 market index and reports that having a 1% increase in the cumulative daily confirmed number of COVID-19 US cases is associated with a markdown of 0.01% in the S&P 500 index the following day, and a 0.03% decrease the next month. Mamaysky (2020) also affirms this lead-lag relationship between news released and the impact on financial markets. However, Onali (2002) also explores how the number of confirmed COVID-19 cases and deaths affects the US stock market and argues that there hasn't been a significant effect on US stock market returns but there has been a remarkable impact on the volatility of the US stock market, even when cases were reported in countries other than the US.

Other studies examining the impact of COVID-19 related news on stock market volatility include Baker et al. (2020) and Albuлесcu (2020). Baker et al. (2020) use a textual analysis approach to quantify the impact of news related to COVID-19 on stock market volatility and show that COVID-19 has had a much more severe impact on stock market volatility compared to other similar outbreaks, such as during the Ebola disease, and even when comparing stock market volatility levels with the Spanish Flu of 1918. Similarly, Albuлесcu (2020) mentions that news about confirmed cases and deaths, as announced by the WHO, caused a substantial impact on the volatility index (VIX). In addition, Zhang et al. (2020) document that COVID-19 contributed to the overall increase in global financial market risk levels.

A handful of other studies review other economic impacts of this particular outbreak, highlighting its contagion effects. Goodell (2020) compares the economic damage created by COVID-19 to other natural disasters, such as nuclear wars and environmental concerns, and suggests that COVID-19 has caused unprecedented detrimental global economic disturbance. Moreover, Ozili (2020) examines the impact of social distancing measures on economic activities and shows that the COVID-19 outbreak led to spillovers into major sectors of the global economy. Okorie and Lin (2020) provide empirical evidence on the short-lived contagion effects of the COVID-19 on stock markets, and Ashraf (2020) also confirms that financial markets quickly responded to COVID-19 related news with this response varying over time and depending on the stage of the pandemic. However, Gunay (2020) studied the responses of six different foreign exchange

rates and debates that the disturbance caused by the COVID-19 pandemic in the exchange markets was not as harsh as during the global financial crisis.

3. Empirical analysis

3.1. Sample and data sources

Our sample of emerging markets includes the countries which constitute the MSCI Emerging Markets Index (EM) and MSCI Emerging Frontier Markets Index (EFM) who each operate their own local stock exchanges⁴. We collect data for the number of confirmed cases and deaths due to COVID-19 from the WHO website⁵. Data on stock market indices and sovereign credit default swaps is obtained from Bloomberg and Thomson Reuters. We also compile information about IMF support to emerging countries and the fiscal and monetary support offered by local governments and central banks from the IMF website⁶.

[Insert Table 1 about here]

In Table 1, we list the countries represented in our study along with the number of confirmed COVID-19 cases and fatalities, as of June 14, 2020⁷. We classify the sample into four regions: Asia, Eastern Europe, Latin America, and the Middle East/Africa. In our sample, the region with the highest confirmed cases and fatalities is Latin America with 1,431,732 cases and 70,032 deaths (representing 43% and 63% of total cases and fatalities reported in the emerging markets, respectively). On the other hand, the region with the lowest confirmed cases and fatalities is the Middle East/Africa with 459,356 cases and 5,435 deaths (representing 14% and 5% of total cases and fatalities reported in the emerging

⁴ EM countries include: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

EFM countries include: Argentina, Bahrain, Bangladesh, Burkina Faso, Benin, Colombia, Croatia, Estonia, Egypt, Guinea-Bissau, Ivory Coast, Jordan, Kenya, Kuwait, Kazakhstan, Lebanon, Lithuania, Mauritius, Mali, Morocco, Niger, Nigeria, Oman, Peru, Philippines, Pakistan, Romania, Serbia, Senegal, Slovenia, Sri Lanka, Togo, Tunisia and Vietnam.

Burkina Faso, Benin, Guinea-Bissau, Ivory Coast, Mali, Niger, Senegal, and Togo do not have their own local stock exchanges so they are not represented in our sample.

⁵ <https://covid19.who.int/>

⁶ <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

⁷ Taiwan discloses its number of COVID-19 cases separately, so we include it in this list.

markets, respectively). The three top countries, as of the total number of confirmed cases in each region, are: India, Pakistan and China in Asia; Russia, Turkey and Poland in Eastern Europe; Brazil, Peru and Chile in Latin America; and Saudi Arabia, Qatar, and Egypt in the Middle East/ Africa.

3.2. Stock market performance

To examine stock market movement during the COVID-19 pandemic, we first identify the major stock market index for each of the emerging countries, as reported by Bloomberg/s. We then compute the percentage change in the index value at the end of each month for the first 5 months of 2020.

[Insert Table 2 about here]

From Table 2 Panel A, we can see large negative movements for the majority of stock indices during the first three months of 2020, with the sharpest drops being witnessed in the month of March, coinciding with the announcement of COVID-19 as a global pandemic. This decline in emerging stock markets was consistent with the negative sentiments expressed in the developed markets. The stock index that took the most notable hit during this period was the DFMGI Index of the UAE in the Middle East/Africa region, which plummeted by 31.61% by the close of business on March 31, 2020. Next, was the Merval Index of Argentina in Latin America, which fell by 30.28% by the close of business on March 31, 2020. Furthermore, the country with the largest decline in stock market index value by the end of March 31, 2020 in the Asian region was Vietnam (-24.90%), and in the Eastern Europe region it was Greece (-22.5%). Taking a closer look at the stock market performance of the top 3 countries ranked with respect to total number of COVID-19 cases in each region, we find that they also all had significant drops in the values of their stock market indices as of the end of March, 2020. In Asia, the SENSEX index of India, KSE 100 index of Pakistan, and SHCOMP index of China, decreased by 23.05%, 23.04%, and 4.51%, respectively. In Eastern Europe, The IMOEX index of Russia, XU100 index of Turkey, and WIG index of Poland, declined by 9.92%, 15.43%, and 15.53%, respectively. Moreover, in Latin America, the region with the largest stock index declines by the end of March, the IBOV index of Brazil, SPBLPGPT index of Peru, and IPSA index of Chile plunged 29.9%, 20.81%, and 15.41%, respectively. Finally, in the Middle East/Africa region, the SASEIDX index of Saudi

^s Please note that the United Arab Emirates (UAE) has 2 major stock exchanges (Abu Dhabi Stock Exchange ADX and Dubai Financial Market DFM) and hence we report the 2 major indices for this country.

Arabia, DSM index of Qatar, and EGX30 index of Egypt descended by 14.72%, 13.52%, and 26.25%, respectively. However, we can also see that the emerging stock markets staged a positive comeback during the month of April, superseding the sluggish performance that was reported during the month of March. Countries that took the biggest hits at the end of March, such as Vietnam, India and Pakistan in Asia; Greece and Estonia in Eastern Europe; Argentina and Brazil in Latin America; and the UAE (both Abu Dhabi and Dubai Indices) and Egypt in the Middle East/Africa region, all saw their stock market indices rebound by more than 10%. Some positive sentiments continued in emerging stock markets by the end of May 2020, with 10 indices reporting steady growth (i.e., 22% of the countries) and 12 indices exhibiting positive but less increases than at the end of March (i.e., 26% of the countries). Yet 14 indices (i.e., 30% of the countries) continued to show a negative stock market performance.

Next, to ascertain whether investors' response to COVID-19 was more (or less) significant than the response to the global financial crisis, we report in Panel B of Table 2, the stock market index movements as of the end of September, October, and November 2008. We chose this period specifically because of the important events that exacerbated the crisis and led to massive stock plunges all over the globe, such as the collapse of Lehman Brothers (September 15, 2008) which occurred during this period. Indeed, as highlighted in Panel B of Table 2, emerging stock markets were hit intensively, as shown by the extremely negative movements reported at the end of October, 2008. Comparing the declines in stock market indices at the end of March 2020, with those which occurred at the end of October 2008, we find that only 30% of the indices had a larger drop during the COVID-19 pandemic, with the majority of them represented in the Middle Eastern and African Markets (Bahrain, Mauritius, Morocco, South Africa, Tunisia, U.A.E - Abu Dhabi and U.A.E - Dubai), followed by the Asian markets (Bangladesh, Pakistan, Sri Lanka and Vietnam), and finally the Latin American markets (Brazil, Chile and Colombia).

3.3. Stock market volatility

In this section, we assess the level of upheaval experienced in the emerging stock markets, by gauging the impact of COVID-19 on the fluctuations in stock returns. To estimate stock market volatility, we employ the following GARCH (1,1) model:

$$r_t = \mu + \sigma_t \varepsilon_t \quad (1)$$

$$\sigma_{2t} = \alpha_0 + \alpha_1 r_{2t-1}^2 + \beta_1 \sigma_{2t-1} \quad (2)$$

Where: r_t denotes the monthly stock returns, σ_{2t} is the variance of monthly stock returns, and ε_t is normally distributed.

The GARCH (1,1) model, developed by Bollerslev (1986), is commonly used by many researchers and often preferred by financial modelling professionals for its simplicity and its predictive power of volatility (e.g., Brooks, 2014).

[Insert Table 3 about here]

End of month volatility, as predicted by the GARCH (1,1) model, is displayed in Table 3 for the period spanning December 2019 up to the end of May 2020. Volatility levels reached their highest at the end of April for most of the emerging countries compared to other months surrounding the pandemic. As a matter of fact, 59% of those countries' volatility at least doubled in April compared to December 2019. Those spikes in volatility were recorded across multiple regions, such as Latin America (IBOV index-Brazil, where volatility peaked at 19.67% reflecting a 236% increase from December 2019) and the Middle East/Africa region (SEMDEX index - Mauritius and ADSMI index- U.A.E/Abu Dhabi) where volatility soared to 30.77% and 18.79% representing a 1213% and 259% increase from December 2019, respectively). Similarly, in Asia (VNINDEX index- Vietnam) witnessed a surge in volatility of 200% reaching 16.34%, whilst in Eastern Europe, Estonia (TALSE index) recorded the highest volatility of 12.67%, an increase of 368% from December 2019. The uncertainties in stock markets gradually diminished by the end of May 2020 for most of the countries, with 24% of countries still reporting similar or higher volatility percentages than the month of April. 64% of those countries with continued increases in volatility were in the Asian region.

[Insert Figure 1 about here]

To compare the severity of such current turbulence occurring in the emerging stock markets with prior periods of record high volatility, we extend our computations back to the year 2000 and graphically display our results in Figure 1. Figures 1.1, 1.2, 1.3, and 1.4 show the graphs for the top ranked countries with respect to total COVID-19 cases in Asia, Eastern Europe, Latin America and the Middle East/Africa regions, respectively. Despite the remarkable peaks in volatility surrounding the novel virus, only 2 out of 16 selected highly infected countries (Brazil and Chile) exceeded the highest levels experienced during the global financial crisis. Yet, the volatility levels recorded in 2020 were steep enough for 12 out of 16 countries to outpace the increases witnessed during the 2015 oil price shock.

3.4. Bond issuance

Many governments across the world turned to the debt markets or made large withdrawals from their savings to cope with the economic hardships caused by COVID-19. To check whether emerging bond markets observed a sizable increase in volume of new issuances surrounding the outbreak, we retrieved data from Thomson Reuters on the total proceeds of new issues for both conventional and Islamic (sukuk)⁹ bonds in the first five months of 2020, and compared those totals to the amounts issued during the same period (January to May) of 2019.

[Insert Figure 2 about here]

Figures 2.1 to 2.6 graphically illustrate those comparisons, with Figure 2.1 displaying totals raised in both conventional and Islamic (sukuk) bond markets, whilst Figure 2.2 only exhibits the proceeds raised in Islamic (sukuk) bond markets. From Figure 2.1, when classifying the emerging markets into regions, we do not observe any increase in the overall amount raised in both conventional and Islamic bond markets during the COVID-19 period, compared to the same corresponding period of 2019. The total proceeds were about the same in Eastern Europe and the Middle East/Africa, whilst totals were less in Asia and Latin America. However, when looking only at proceeds raised through sukuk in Figure 2.2, we can see significant decreases in amounts raised in the sukuk markets in both Asia and the Middle East/Africa¹⁰ regions, which are regions that include core Islamic finance markets, such as Malaysia, Indonesia, Bahrain, Saudi Arabia and the United Arab Emirates. To further understand the reasons behind such plummets in Sukuk issues, we classify those proceeds based on the type of bonds and present totals raised in corporate bonds (both conventional and Islamic) in Figure 2.3, whilst we report amounts raised only through Islamic corporate bonds in Figure 2.4. Finally, we show amounts raised in government bonds (both conventional and Islamic) in Figure 2.5 and amounts only issued through Islamic government bonds (sukuk) in Figure 2.6. We notice from Figure 2.4 that corporate sukuk issuances significantly dropped in Asian and Eastern Europe regions. Such declines could be due to the liquidity enhancement measures implemented in the banking sector of such countries amidst the economic downturn caused by COVID-19 and this led corporations to view sukuk as a secondary funding option. From Figure 2.6, we can also see that government sukuk issuances had a sharp drop in the Asian and Middle/East African markets. This suggests that governments in those regions were turning to conventional

⁹ Sukuk are financial instruments equivalent to conventional bonds but they comply with the principles of Islamic law. For a full explanation about Sukuk, please see Godlewski et al., 2013; Azmet et al., 2014; Naifar et al., 2017; Nagano, 2017.

¹⁰ There is no chart for Latin America in Figures 2.2, 2.4, and 2.6 because there were no amounts raised in either 2019 or 2020 in Islamic bond markets for this region.

rather than Islamic bonds whilst confronting the impact of the weaker economic environment on their budgets. This could be due to the complexity embedded in sukuk issuances in addition to the risk aversion of investors (S&P Global Ratings, 2020). To further look at which governments were increasing their bond issuances through either conventional or Islamic bonds, we present bond proceeds, classified by country in Table 4.

[Insert Table 4 about here]

From Table 4, we can note that if we look at the aggregate amount of debt raised through emerging conventional bond markets, we will find a decrease in both corporate and government bond markets of 10.56% and 29%, respectively. Moreover, there was a sharp decline in the Islamic bond market of 53%. However, on an individual country level, we can see that the majority of countries in Eastern Europe (54%) significantly increased both their corporate and government bond issuances, doubling and tripling their amounts issued in the first five months of 2019. In addition, 67% of the countries in Latin America and 45% of the countries in Asia had massive increases specifically in conventional corporate bond proceeds. The different borrowing patterns, viewed across different countries, suggest that policy measures enacted by the governments and central banks of those countries surrounded by the pandemic had a crucial effect on the resulting size of the bond markets.

3.5. Sovereign default risk

Government actions exacerbated investors' concerns regarding countries' credit risk, leading them to demand greater protection against such risks. To explore whether such concerns were substantial during the COVID-19 crisis, we study the premiums associated with sovereign credit default swaps (CDS). Sovereign CDS are financial contracts offering insurance against losses from credit events on outstanding debt issued by sovereign entities (Fender et al., 2012). Hence, studying CDS premiums will provide us with a reasonable estimate of investors' perceptions towards sovereign default risk, with higher premiums reflecting the higher cost of buying credit protection for the country's sovereign default.

[Insert Table 5 about here]

In Table 5, we report the premiums (in basis points) demanded by investors on sovereign CDS. Our sample of sovereign CDS is limited to include those which are denominated in US dollars and which mature within 5 years. First in Panel A, we present the amount of CDS premiums, as of the end of each month covering the period of the COVID-19 crisis (December 2019 up to May 2020), and then we indicate the maximum amount demanded during the year 2020 along with the maximum date. When comparing the maximum premium asked for during 2020 to the end of December 2019 (just before the spread of COVID-19) we can clearly see the huge increases in CDS prices for all the emerging countries with available CDS data. The largest CDS premium recorded during 2020 was on May 4th for Argentina's CDS (28,012.10 basis points). This translates to a 280% cost of buying credit insurance for the country's sovereign default risk! Other countries with sizable increases in CDS premiums include: India, Indonesia and Malaysia in Asia; Russia and Kazakhstan in Eastern Europe; Colombia and Chile in Latin America; and Lebanon, Nigeria and Qatar in the Middle East/Africa, with jumps of more than 200% in many of those CDS premiums and even 509% (for Lebanon's CDS) when compared to the end of December 2019. Over the last few months, Lebanon has been thrust into its worst economic crisis in decades, with its currency collapsing and prices for basic goods skyrocketing. Those massive rises in insurance rates against sovereign credit risk affirm huge fears amongst investors amidst the outbreak.

Next, to compare the magnitude of COVID-19 CDS premium increases to previous record highs, in Panel B we include the maximum premiums required on the sovereign CDS during the global financial crisis years (2008 to 2009) along with the maximum date. Except for Greece, Argentina and Tunisia, all other emerging countries reported much more expensive costs of credit protection during the global financial crisis compared to the COVID-19 crisis, suggesting that despite the tremendous elevation in investor perception towards sovereign default risk, it still remains lower than the fears experienced during the global financial crisis period.

4. Financial assistance to emerging countries

Finally, in this section, we monitor how international organisations such as the IMF and local governments and central banks across emerging countries handled the COVID-19 crisis by exploring their emergency policy responses and actions.

4.1. IMF financial support

To measure the IMF's response towards supporting the emerging markets, in Table 6 we disclose the amount of financial assistance committed to emerging countries during the COVID-19 pandemic.

[Insert Table 6 about here]

The IMF has granted US\$ 12,174 million to emerging countries in the form of Rapid Credit Facility and Rapid Financing Instruments. This assistance commenced on April 10, 2020 with approval for Tunisia amounting to US\$ 745 million. 74% of the total amount approved was directed towards the Middle East and Africa, with emergency financial assistance support given to Egypt, Ghana, Jordan, Kenya, Nigeria and Tunisia.

4.2. Fiscal and monetary policy responses

In this section, we review the policy response measures dictated by the governments and central banks of emerging countries in order to revitalize the economy and combat the slump in consumer and business demand resulting from the preventative measures which were implemented to contain the virus.

[Insert Table 7 about here]

We hand collect the data on fiscal and monetary responses for 45 emerging countries from the IMF website¹¹, and we carefully codify the text to classify those policy reactions under distinct categories. The summary of fiscal (Panel A) and monetary (Panel B) responses are presented in Table 7. From Panel A, we document that 44 of the emerging countries had announced financial and credit policy reactions, as of June 15, 2020. Countries which allocated a large amount of their fiscal budget towards combating COVID -19 included: Czech Republic, Greece, Slovenia, and Qatar, which allocated 14.25%, 14%, 13.4%, and 13 % of their GDP, respectively. The remaining countries' allocations ranged from 0.28% to 10% with an average of 3.8% of GDP. Moreover, 82% of the countries announced tax

¹¹ There was no separate disclosure on the IMF website for measures announced by Taiwan.

policies with 46% of them granting stimulus packages for corporate taxes, whilst only 31% gave income tax relief. Finally, 71% of governments announced policies to preserve employment, while only 49% announced stimulus packages dedicated specifically to supporting the health sector. When analysing the monetary responses of emerging countries, in Panel B we report that 44 countries also announced monetary and liquidity easing measures. The monetary policy rate was reduced by an average cut of 1.46% in 25 countries, ranging from 0.25% (Morocco) to 4% (Nigeria). Only 8 countries announced bond repurchasing programmes, of which 5 were in Asia, 2 in Eastern Europe, and 1 in Latin America. However, 96% of emerging countries announced monetary measures to facilitate SMEs, private businesses, and individual funding.

5. Conclusion

Almost 6 months have elapsed since the discovery of the novel Coronavirus and yet heightened uncertainties regarding health, the economy and employment continue to prevail. Those uncertainties have been translated into widespread investor fears across global markets. Most financial researchers and economists directed their attention towards understanding the impact of COVID-19 on developed markets, however, to our knowledge, no studies until now have explored the impact of COVID-19 on emerging markets. In this study, we provide a comprehensive analysis of investors' reactions towards the impact of COVID-19 on emerging markets. We study 45 emerging countries and measure investors' reactions surrounding the pandemic, by measuring the stock performance and volatility present in each of the major stock markets of those countries, and we assess investors' perceptions towards credit risk by analysing the premiums on sovereign credit default swaps. We also record the volume of new bond issues in both conventional and Islamic bond markets, and we document responses conducted by the IMF and local governments and central banks towards supporting the most vulnerable economies.

We found significant decreases in stock market performances accompanied by substantial spikes in volatility and increases in CDS premiums, however, those conditions did not reach the extreme levels observed during the global financial crisis. The IMF has provided some financial assistance, and more importantly, the vast majority of emerging countries' governments and central banks announced a combination of fiscal and monetary policy measures in their attempts to stimulate the economy, however, much more is expected given the prolonged and devastating effects of this pandemic.

The major limitation that we faced during our research was the time constraint. There is a crucial and urgent need to identify the impact of COVID-19 on emerging markets, hence

this research was conducted to primarily shed light on this area and to fill the gap in the literature, however, future research needs to focus on comparing the effects of different fiscal versus monetary policy reactions on mitigating economic losses, rebuilding investor confidence and improving stock market performance. Moreover, during our research we discovered some interesting venues for future research. These include studying factors behind the choice of accessing bonds markets in such times of liquidity constraints, when other liquidity easing measures are put in place by governments, and investigating the factors behind the choice of corporations and governments between conventional and Islamic bonds in such times of crisis.

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Table 1: List of Emerging Countries

This table includes the list of countries represented in our sample, as explained in section 3.1. Confirmed COVID-19 cases and deaths are reported, as of June 14, 2020 (source: WHO website).

Region	Country	Confirmed Cases	Confirmed Deaths
Asia	Bangladesh	84,379	1,139
Asia	China	84,729	4,645
Asia	India	320,922	9,195
Asia	Indonesia	37,420	2,134
Asia	Malaysia	8,445	120
Asia	Pakistan	139,230	2,632
Asia	Philippines	25,392	1,074
Asia	South Korea	12,085	277
Asia	Sri Lanka	1,884	11
Asia	Thailand	3,135	58
Asia	Taiwan	445	7
Asia	Vietnam	334	0
Eastern Europe	Croatia	2,251	107
Eastern Europe	Czech Republic	9,991	329
Eastern Europe	Estonia	1,973	69
Eastern Europe	Greece	3,112	183
Eastern Europe	Hungary	4,064	559
Eastern Europe	Kazakhstan	14,496	73
Eastern Europe	Lithuania	1,763	75
Eastern Europe	Poland	29,017	1,273
Eastern Europe	Romania	21,679	1,391
Eastern Europe	Russia	528,964	6,948
Eastern Europe	Serbia	12,251	253

Eastern Europe	Slovenia	1,492	109
Eastern Europe	Turkey	176,677	4,792
Latin America	Argentina	28,764	802
Latin America	Brazil	828,810	41,828
Latin America	Chile	167,355	3,101
Latin America	Colombia	46,858	1,545
Latin America	Mexico	139,196	16,448
Latin America	Peru	220,749	6,308
Mid East/Africa	Bahrain	18,227	39
Mid East/Africa	Egypt	42,980	1,484
Mid East/Africa	Jordan	953	9
Mid East/Africa	Kenya	3,457	100
Mid East/Africa	Kuwait	35,466	289
Mid East/Africa	Lebanon	1,442	32
Mid East/Africa	Mauritius	337	10
Mid East/Africa	Morocco	8,692	212
Mid East/Africa	Nigeria	15,181	399
Mid East/Africa	Oman	22,077	99
Mid East/Africa	Qatar	78,416	70
Mid East/Africa	Saudi Arabia	123,308	932
Mid East/Africa	South Africa	65,736	1,423
Mid East/Africa	Tunisia	1,094	49
Mid East/Africa	United Arab Emirates	41,990	288

Table 2: Stock Market Performance

This table presents movements in the major stock market index for each of the emerging countries, as of the end of the reported month surrounding the COVID-19 crisis period (Panel A), and the global financial crisis period (Panel B).

Panel A: COVID-19 Pandemic								Panel B: Global Financial Crisis			
Region	Country	Bloomberg Index	Jan. 2020	Feb. 2020	Mar. 2020	Apr. 2020	May 2020	Bloomberg Index	Sep. 2008	Oct. 2008	Nov. 2008
Asia	Bangladesh	DSEX Index	0.38%	0.24%	-10.53%	0.00%	1.30%	DHAKA Index	6.29%	-7.36%	-10.18%
Asia	China	SHCOMP Index	-2.41%	-3.23%	-4.51%	3.99%	-0.27%	SHCOMP Index	-4.32%	-24.63%	8.24%
Asia	India	SENSEX Index	-1.29%	-5.96%	-23.05%	14.42%	-3.84%	SENSEX Index	-11.70%	-23.89%	-7.10%
Asia	Indonesia	JCI Index	-5.71%	-8.20%	-16.76%	3.91%	0.79%	JCI Index	-15.39%	-31.42%	-1.21%
Asia	Malaysia	FBMKLCI Index	-3.63%	-3.16%	-8.89%	4.21%	4.65%	FBMKLCI Index	-7.43%	-15.22%	0.29%
Asia	Pakistan	KSE100 Index	2.20%	-8.76%	-23.04%	16.69%	-0.53%	KSE100 Index	-0.31%	0.03%	0.05%
Asia	Philippines	PCOMP Index	-7.86%	-5.73%	-21.61%	7.13%	2.42%	PCOMP Index	-4.41%	-24.07%	1.05%
Asia	South Korea	KOSPI Index	-3.58%	-6.23%	-11.69%	10.99%	4.21%	KOSPI Index	-1.78%	-23.13%	-3.32%

Asia	Sri Lanka	CSEALL Index	-3.25%	-5.68%	-	0.00%	6.02%		CSEALL Index	-11.06%	-	-9.97%
					18.26%						14.97%	
Asia	Taiwan	TWSE Index	-4.18%	-1.77%	-	13.23%	-0.45%		TWSE Index	-18.83%	-	-8.42%
					14.03%						14.84%	
Asia	Thailand	SET Index	-4.16%	-11.47%	-	15.61%	3.16%		SET Index	-12.84%	-	-3.53%
					16.01%						30.18%	
Asia	Vietnam	VNINDEX Index	-2.54%	-5.81%	-	16.09%	12.40%		VNINDEX Index	-15.28%	-	-9.31%
					24.90%						24.01%	
Eastern Europe	Croatia	CRO Index	1.19%	-8.72%	-	4.31%	5.90%		CRO Index	-14.42%	-	-26.67%
					20.55%						26.72%	
Eastern Europe	Czech Republic	PX Index	-3.87%	-8.89%	-	10.54%	2.56%		PX Index	-18.50%	-	-1.67%
					19.16%						27.13%	
Eastern Europe	Estonia	TALSE Index	4.64%	-5.34%	-	11.11%	5.74%		TALSE Index	-14.74%	-	-17.66%
					20.04%						30.14%	
Eastern Europe	Greece	ASE Index	-0.63%	-	-	12.53%	3.87%		ASE Index	-13.25%	-	-7.12%
				20.92%	22.50%						27.87%	
Eastern Europe	Hungary	BUX Index	-6.53%	-6.60%	-	6.17%	1.97%		BUX Index	-10.18%	-	-6.00%
					17.64%						28.42%	
Eastern Europe	Kazakhstan	KZKAK Index	-2.73%	-3.33%	0.07%	2.28%	2.20%		KZKAK Index	-	-	-1.21%
									28.56%		31.86%	
Eastern Europe	Lithuania	VILSE Index	3.13%	-6.31%	-12.13%	14.97%	3.81%		VILSE Index	-	-	-16.98%
									24.40%		29.60%	
Eastern Europe	Poland	WIG Index	-1.99%	-	-	10.79%	4.36%		WIG Index	-7.69%	-	-4.46%
				13.06%	15.53%						24.01%	
Eastern Europe	Romania	BET Index	0.51%	-9.04%	-	4.63%	9.06%		BET Index	-21.45%	-	3.98%
					16.40%						32.68%	
Eastern Europe	Russia	IMOEX Index	1.01%	-9.48%	-9.92%	5.65%	3.18%		IMOEX Index	-	-	-16.48%
									23.82%		28.77%	

Eastern Europe	Serbia	BELEX15 Index	0.81%	-1.13%	-20.34%	2.97%	2.71%	BELEX15 Index	-26.62%	-34.26%	-16.55%
Eastern Europe	Slovenia	SBITOP Index	4.90%	-6.64%	-19.17%	9.37%	4.00%	SBITOP Index	-16.81%	-16.79%	-14.41%
Eastern Europe	Turkey	XU100 Index	4.12%	-11.03%	-15.43%	12.79%	4.36%	XU100 Index	-9.52%	-22.80%	-7.61%

Table 2: Stock Market Performance (continued)

Panel A: COVID-19 Pandemic								Panel B: Global Financial Crisis			
Region	Country	Bloomberg Index	Jan. 2020	Feb. 2020	Mar. 2020	Apr. 2020	May 2020	Bloomberg Index	Sep. 2008	Oct. 2008	Nov. 2008
Latin America	Argentina	MERVAL Index	-3.76%	-12.80%	-30.28%	34.28%	15.52%	MERVAL Index	-10.07%	-36.75%	-1.66%
Latin America	Brazil	IBOV Index	-1.63%	-8.43%	-29.90%	10.25%	8.57%	IBOV Index	-11.03%	-24.80%	-1.77%
Latin America	Chile	IPSA Index	-2.09%	-9.83%	-15.41%	14.05%	-8.30%	IPSA Index	-4.90%	-9.58%	-3.35%
Latin America	Colombia	COLCAP Index	-2.32%	-4.57%	-27.48%	1.62%	-4.05%	IGBC Index	-1.35%	-21.87%	1.23%
Latin America	Mexico	MEXBOL Index	1.30%	-6.31%	-16.38%	5.54%	-0.95%	MEXBOL Index	-5.33%	-17.85%	0.44%

Latin America	Peru	SPBLPGPT Index	-3.37%	-7.92%	- 20.81%	2.18%	5.42%	SPBLPGPT Index	- 15.35%	- 37.28%	4.97%
Mid East/Africa	Bahrain	BHSEASI Index	2.95%	0.17%	- 18.66%	-2.95%	-3.14%	BHSEASI Index	-8.45%	-9.85%	- 12.20%
Mid East/Africa	Egypt	EGX30 Index	-0.31%	-6.54%	- 26.25%	10.01%	-3.16%	EGX30 Index	- 16.46%	- 33.19%	- 10.82%
Mid East/Africa	Jordan	JOSMGNFF Index	2.90%	-1.71%	-9.14%	0.00%	-1.49%	JOSMGNFF Index	-6.94%	- 22.01%	- 12.78%
Mid East/Africa	Kenya	KNSMIDX Index	-2.03%	-10.13%	- 15.87%	-0.41%	-0.51%	KNSMIDX Index	- 10.08%	- 18.99%	0.00%
Mid East/Africa	Kuwait	KWSEPM Index	0.82%	-4.31%	- 22.76%	3.03%	1.27%	KWSEIDX Index	-11.13%	- 23.76%	-9.34%
Mid East/Africa	Lebanon	BLOM Index	- 10.35%	- 10.60%	-5.12%	5.36%	- 8.59%	BLOM Index	-3.45%	- 17.53%	- 15.39%
Mid East/Africa	Mauritius	SEMDEX Index	1.63%	-1.60%	- 27.84%	0.11%	3.14%	SEMDEX Index	-5.45%	-15.17%	- 11.82%
Mid East/Africa	Morocco	MOSEMDX Index	3.11%	-2.19%	- 21.26%	-3.23%	4.92%	MOSEMDX Index	- 11.10%	-4.10%	-7.05%
Mid East/Africa	Nigeria	NGSEINDX Index	7.46%	-9.11%	- 18.75%	8.08%	9.76%	NGSEINDX Index	-3.29%	- 21.40%	-9.08%
Mid East/Africa	Oman	MSM30 Index	2.46%	1.27%	- 16.52%	2.64%	0.14%	MSM30 Index	- 10.54%	- 26.89%	0.87%

Mid East/Africa	Qatar	DSM Index	0.16%	-9.12%	-	6.78%	0.92%	DSM Index	-	-	-
					13.52%				10.81%	25.62%	12.36%
Mid East/Africa	Saudi Arabia	SASEIDX Index	-1.70%	-7.50%	-	9.34%	1.41%	SASEIDX Index	-	-	-
					14.72%				14.83%	25.75%	14.44%
Mid East/Africa	South Africa	JALSH Index	-1.76%	-8.99%	-	13.14%	0.29%	JALSH Index	-	-	1.04%
					12.83%				13.96%	11.93%	
Mid East/Africa	Tunisia	TUSISE Index	-0.59%	1.29%	-9.59%	-4.16%	4.42%	TUSISE Index	1.13%	-9.24%	-3.05%
Mid East/Africa	U.A.E. - Abu Dhabi	ADSMI Index	1.58%	-4.94%	-	13.27%	-2.10%	ADSMI Index	-	-	-
					23.80%				10.35%	15.94%	16.54%
Mid East/Africa	U.A.E. - Dubai	DFMGI Index	0.92%	-7.18%	-31.61%	14.41%	-	DFMGI Index	-	-	-
							4.02%		13.34%	28.72%	33.22%

Table 3: Stock Market Volatility during the COVID- 19 Outbreak

This table presents the estimates of volatility for the major stock market index of each of the emerging countries, as of the end of each reported month. The volatility is predicted using the GARCH (1,1) model, as explained in section 3.3.

Region	Country	Bloomberg Index	Dec. 2019	Jan. 2020	Feb. 2020	Mar. 2020	Apr. 2020	May 2020
Asia	Bangladesh	DSEX Index	3.29%	5.06%	3.30%	5.06%	3.29%	5.09%
Asia	China	SHCOMP Index	4.38%	5.06%	4.85%	4.80%	5.00%	5.00%
Asia	India	SENSEX Index	4.54%	4.41%	4.38%	4.95%	9.87%	10.29%
Asia	Indonesia	JCI Index	3.70%	3.87%	4.61%	5.78%	9.24%	8.42%
Asia	Malaysia	FBMKLIC Index	2.69%	2.63%	2.87%	3.00%	4.27%	4.21%
Asia	Pakistan	KSE100 Index	7.62%	7.33%	7.04%	7.43%	10.13%	10.56%
Asia	Philippines	PCOMP Index	4.25%	4.10%	5.21%	5.53%	10.04%	9.34%
Asia	South Korea	KOSPI Index	4.47%	4.56%	4.53%	4.88%	6.32%	7.02%
Asia	Sri Lanka	CSEALL Index	4.71%	4.62%	4.64%	4.87%	7.17%	6.87%
Asia	Taiwan	TWSE Index	3.57%	3.73%	4.01%	3.87%	6.99%	8.21%
Asia	Thailand	SET Index	3.71%	3.49%	4.00%	6.92%	10.14%	11.47%
Asia	Vietnam	VNINDEX Index	5.43%	5.31%	5.50%	6.55%	16.34%	15.57%
Eastern Europe	Croatia	CRO Index	3.24%	3.09%	2.99%	5.33%	11.50%	10.29%
Eastern Europe	Czech Republic	PX Index	5.29%	5.34%	5.51%	7.23%	12.17%	7.00%
Eastern Europe	Estonia	TALSE Index	2.71%	2.55%	3.16%	4.66%	12.67%	12.19%
Eastern Europe	Greece	ASE Index	8.11%	8.09%	8.06%	10.84%	10.84%	8.82%

Eastern Europe	Hungary	BUX Index	4.94%	5.10%	5.62%	6.00%	8.65%	8.08%
Eastern Europe	Kazakhstan	KZKAK Index	5.29%	5.10%	5.70%	6.17%	5.69%	5.33%
Eastern Europe	Lithuania	VILSE Index	2.62%	2.45%	2.53%	4.25%	7.45%	9.58%
Eastern Europe	Poland	WIG Index	4.10%	3.96%	4.10%	7.91%	10.48%	9.97%
Eastern Europe	Romania	BET Index	5.11%	4.91%	4.77%	6.79%	10.51%	9.26%
Eastern Europe	Russia	IMOEX Index	4.01%	4.06%	3.86%	6.51%	7.98%	7.26%
Eastern Europe	Serbia	BELEX15 Index	3.76%	4.00%	3.85%	3.77%	9.66%	8.75%
Eastern Europe	Slovenia	SBITOP Index	3.98%	4.00%	4.27%	5.05%	9.61%	9.18%
Eastern Europe	Turkey	XU100 Index	7.48%	7.36%	7.04%	7.95%	9.52%	9.81%

Table 3: Stock Market Volatility during the COVID-19 Outbreak (continued)

Region	Country	Bloomberg Index	Dec. 2019	Jan. 2020	Feb. 2020	Mar. 2020	Apr. 2020	May 2020
Latin America	Argentina	MERVAL Index	16.99%	17.20%	14.30%	14.84%	22.91%	25.81%
Latin America	Brazil	IBOV Index	5.85%	6.77%	6.15%	8.24%	19.67%	9.34%
Latin America	Chile	IPSA Index	4.64%	4.18%	4.32%	6.76%	9.00%	7.43%
Latin America	Colombia	COLCAP Index	4.97%	4.93%	4.91%	4.99%	8.11%	7.84%
Latin America	Mexico	MEXBOL Index	3.79%	3.59%	3.40%	4.30%	7.94%	7.45%
Latin America	Peru	SPBPLPGPT Index	4.41%	4.24%	4.62%	6.14%	11.83%	10.39%
Mid East/Africa	Bahrain	BHSEASI Index	3.11%	3.82%	3.56%	3.26%	8.40%	5.63%
Mid East/Africa	Egypt	EGX30 Index	9.05%	8.35%	8.56%	9.36%	16.31%	6.66%
Mid East/Africa	Jordan	JOSMGNFF Index	2.67%	2.56%	2.72%	2.64%	4.59%	4.17%
Mid East/Africa	Kenya	KNSMIDX Index	5.26%	4.88%	4.64%	6.18%	8.81%	7.57%
Mid East/Africa	Kuwait	KWSEPM Index	4.91%	4.83%	4.97%	4.90%	2.57%	4.95%
Mid East/Africa	Lebanon	BLOM Index	3.46%	3.52%	5.81%	7.19%	6.81%	6.64%
Mid East/Africa	Mauritius	SEMDEX Index	2.34%	2.88%	2.57%	3.34%	30.77%	14.17%
Mid East/Africa	Morocco	MOSEMDX Index	4.02%	4.02%	4.03%	4.03%	5.53%	5.44%

Mid East/Africa	Nigeria	NGSEINDEX Index	5.74%	5.54%	5.85%	6.92%	10.16%	9.34%
Mid East/Africa	Oman	MSM30 Index	3.97%	3.95%	3.93%	3.86%	6.36%	5.97%
Mid East/Africa	Qatar	DSM Index	3.96%	4.00%	3.86%	6.71%	9.87%	8.78%
Mid East/Africa	Saudi Arabia	SASEIDX Index	5.42%	5.60%	5.32%	6.21%	8.96%	8.78%
Mid East/Africa	South Africa	JALSH Index	3.61%	3.45%	3.47%	5.82%	8.42%	9.28%
Mid East/Africa	Tunisia	TUSISE Index	3.31%	3.29%	3.27%	3.24%	4.32%	4.20%
Mid East/Africa	U.A.E. - Abu Dhabi	ADSMI Index	5.24%	5.04%	5.10%	6.45%	18.79%	10.58%
Mid East/Africa	U.A.E. - Dubai	DFMGI Index	6.91%	6.79%	6.58%	7.50%	17.35%	15.80%

Table 4: Proceeds from New Issues in Conventional and Islamic Bond Markets

This table provides a summary of total proceeds from new issues in conventional and Islamic (sukuk) bond markets during COVID-19 and the corresponding period of 2019. All amounts are reported in \$Billion.

Type of Issue:		Corporate Bonds		Government Bonds		All Sukuk	
Region	Country	Jan-May 2019	Jan-May 2020	Jan-May 2019	Jan-May 2020	Jan-May 2019	Jan-May 2020
Asia	Bangladesh	0.00	0.00	1.79	3.64	0.75	0.61
Asia	China (Mainland)	472.10	572.09	191.53	182.13	0.00	0.00
Asia	India	271.71	179.66	86.72	23.51	0.00	0.00
Asia	Indonesia	5.91	16.21	14.08	12.48	18.33	2.93
Asia	Malaysia	21.37	24.08	28.48	5.42	37.17	16.15
Asia	Pakistan	0.00	0.00	0.00	0.00	0.00	0.00
Asia	Philippines	3.94	2.88	15.70	6.37	0.00	0.00
Asia	South Korea	353.49	180.98	88.27	80.59	0.00	0.00
Asia	Sri Lanka	0.15	0.00	6.30	1.67	0.00	0.00
Asia	Taiwan	5.50	11.93	6.08	7.10	0.00	0.00
Asia	Thailand	13.62	7.98	110.74	94.44	0.00	0.00
Asia	Vietnam	1.66	3.74	5.57	2.85	0.00	0.00
Eastern Europe	Croatia	0.13	0.00	0.56	3.26	0.00	0.00
Eastern Europe	Czech Republic	1.18	1.19	1.12	9.54	0.00	0.00
Eastern Europe	Estonia	0.06	0.59	0.00	0.00	0.00	0.00
Eastern Europe	Greece	0.22	1.12	10.98	8.75	0.00	0.00
Eastern Europe	Hungary	1.67	0.05	5.01	4.04	0.00	0.00
Eastern Europe	Kazakhstan	2.08	0.29	68.00	12.84	0.00	0.00

Eastern Europe	Lithuania	0.00	0.34	0.82	2.79	0.00	0.00
Eastern Europe	Poland	2.10	5.37	24.73	8.14	0.00	0.00
Eastern Europe	Romania	0.23	1.90	13.03	16.24	0.00	0.00
Eastern Europe	Russia	10.05	13.71	61.10	51.67	0.00	0.00
Eastern Europe	Serbia	0.00	0.00	3.18	6.56	0.00	0.00
Eastern Europe	Slovenia	0.11	0.13	2.35	5.04	0.00	0.00
Eastern Europe	Turkey	19.24	8.86	19.78	23.33	8.62	7.94
Latin America	Argentina	0.88	2.71	281.73	138.89	0.00	0.00
Latin America	Brazil	15.81	14.71	5.10	7.83	0.00	0.00
Latin America	Chile	13.18	13.82	4.46	7.38	0.00	0.00
Latin America	Colombia	0.67	29.81	7.70	1.56	0.00	0.00
Latin America	Mexico	13.92	30.37	25.12	20.16	0.00	0.00
Latin America	Peru	3.12	0.76	0.00	3.00	0.00	0.00
Mid East/Africa	Bahrain	0.00	2.11	0.91	3.60	0.91	2.80
Mid East/Africa	Egypt	0.00	0.00	14.89	21.77	0.00	0.00
Mid East/Africa	Jordan	0.04	0.00	3.40	3.43	0.00	0.00
Mid East/Africa	Kenya	0.00	0.00	7.55	1.03	0.00	0.00
Mid East/Africa	Kuwait	0.00	0.00	11.67	10.40	4.38	3.87

Mid East/Africa	Lebanon		0.00	0.00		4.08	2.94		0.00	0.00
Mid East/Africa	Mauritius		0.00	1.13		0.46	0.37		0.00	0.00
Mid East/Africa	Morocco		2.44	2.41		3.54	4.57		0.00	0.00
Mid East/Africa	Nigeria		0.00	0.00		9.24	1.11		0.00	0.00
Mid East/Africa	Oman		0.38	0.00		0.26	0.91		0.12	0.00
Mid East/Africa	Qatar		0.00	0.00		26.46	20.00		1.09	0.00
Mid East/Africa	Saudi Arabia		24.13	0.50		30.19	30.84		15.32	6.84
Mid East/Africa	South Africa		7.30	6.93		0.00	0.00		0.00	0.00
Mid East/Africa	Tunisia		0.00	0.00		0.00	0.30		0.00	0.00
Mid East/Africa	United Arab Emirates		10.29	5.33		0.00	0.00		0.00	0.00
	Total		1278.70	1143.70		1202.68	852.46		86.69	41.13

Table 5: Sovereign Credit Default Swaps

This table reports the premiums on sovereign CDS (in basis points) for the COVID-19 period (Panel A) and the global financial crisis (Panel B). We first report in Panel A the amount of premium, as of the end of each month, then we disclose the maximum amount asked for during the year 2020 along with the maximum date. In Panel B, we report the maximum premium amount demanded along with the maximum date.

Panel A: COVID-19 Period								Panel B: GFC Period			
Region	Country	Dec. 2019	Jan. 2020	Feb. 2020	Mar. 2020	Apr. 2020	May 2020	Max. 2020	Max. date	Max. 2008 / 2009	Max. 2008 / 2009 date
Asia	Bangladesh	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Asia	China	35.09	42.00	51.21	51.64	45.17	50.99	87.95	3/12/2020	276.30	10/24/2008
Asia	India	62.86	63.65	62.42	214.30	192.10	138.10	265.32	3/24/2020	n.a.	n.a.
Asia	Indonesia	62.46	65.98	94.36	210.41	211.23	170.46	292.25	3/23/2020	1248.35	10/24/2008
Asia	Malaysia	34.76	41.79	59.05	115.22	105.91	89.58	193.67	3/23/2020	491.59	10/24/2008
Asia	Pakistan	347.40	352.56	362.73	694.25	597.83	609.06	694.84	3/25/2020	5105.70	10/27/2008
Asia	Philippines	33.63	41.52	54.88	104.41	80.48	74.95	170.98	3/23/2020	824.78	10/24/2008
Asia	South Korea	24.18	26.74	34.43	36.60	33.47	28.71	61.09	3/23/2020	667.96	10/24/2008
Asia	Sri Lanka	454.50	464.62	499.98	1133.61	1084.22	1342.79	1345.36	4/6/2020	n.a.	n.a.
Asia	Taiwan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Asia	Thailand	25.30	25.03	38.39	65.07	59.87	48.86	93.98	4/3/2020	489.56	10/24/2008
Asia	Vietnam	89.15	94.32	109.05	249.30	280.81	219.98	317.48	3/23/2020	982.90	10/24/2008

Eastern Europe	Croatia	63.25	46.27	47.99	75.76	78.81	75.16	90.90	3/24/2020	486.40	10/24/2008
Eastern Europe	Czech Republic	34.73	34.75	37.45	50.37	52.77	52.11	53.77	4/7/2020	305.00	2/27/2009
Eastern Europe	Estonia	53.39	50.77	53.82	60.65	56.65	58.80	81.81	3/24/2020	736.80	2/17/2009
Eastern Europe	Greece	111.92	109.38	171.54	199.40	259.90	203.90	409.81	3/18/2020	255.00	2/27/2009
Eastern Europe	Hungary	70.90	46.26	45.32	79.07	81.58	76.29	92.08	3/23/2020	638.50	3/9/2009
Eastern Europe	Kazakhstan	56.20	57.20	61.73	147.62	131.85	125.52	158.61	3/13/2020	1625.00	2/20/2009
Eastern Europe	Lithuania	59.25	54.18	53.02	63.44	65.13	67.17	68.04	5/26/2020	345.06	11/30/2009
Eastern Europe	Poland	57.95	48.45	49.43	65.66	64.56	58.07	74.45	3/23/2020	414.80	2/20/2009
Eastern Europe	Romania	73.47	67.73	75.81	108.90	174.06	155.43	175.08	5/6/2020	780.78	2/24/2009
Eastern Europe	Russia	55.13	64.09	64.60	184.66	179.35	91.74	202.45	3/13/2020	1113.38	10/27/2008
Eastern Europe	Serbia	81.16	76.45	81.37	110.51	122.95	119.40	125.12	4/8/2020	275.00	2/6/2008
Eastern Europe	Slovenia	65.25	63.40	61.58	73.20	71.42	72.80	87.53	3/23/2020	258.10	2/16/2009
Eastern Europe	Turkey	282.13	240.56	299.60	468.92	592.29	469.04	635.39	4/21/2020	831.31	10/24/2008

Table 5: Sovereign Credit Default Swaps (Continued)

Panel A: COVID-19 Period								Panel B: GFC Period			
Region	Country	Dec. 2019	Jan. 2020	Feb. 2020	Mar. 2020	Apr. 2020	May 2020	Max. 2020	Max. date	Max. 2008 / 2009	Max. 2008 / 2009 date
Latin America	Argentina	3296.70	4073.05	4894.68	13165.85	20699.88	6091.37	28012.10	5/4/2020	5486.80	3/10/2009
Latin America	Brazil	99.45	102.65	131.98	275.95	308.18	283.94	382.72	3/18/2020	586.86	10/23/2008
Latin America	Chile	42.35	51.47	65.30	130.18	105.53	92.78	167.84	3/23/2020	318.33	10/24/2008
Latin America	Colombia	72.23	80.35	103.34	232.34	243.01	172.80	356.96	3/23/2020	593.67	10/24/2008
Latin America	Mexico	78.80	81.76	104.15	240.85	255.58	177.57	309.91	4/27/2020	601.21	10/23/2020
Latin America	Peru	40.85	46.56	63.42	119.01	102.90	91.09	160.07	3/23/2020	586.28	10/24/2008
Mid East/Africa	Bahrain	176.00	166.08	201.20	475.30	487.83	425.93	491.91	5/6/2020	714.50	2/18/2009
Mid East/Africa	Egypt	277.42	264.25	333.88	601.87	653.82	561.15	661.88	3/23/2020	800.00	10/29/2008
Mid East/Africa	Jordan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mid East/Africa	Kenya	298.13	328.81	380.22	742.54	814.30	677.68	814.27	4/29/2020	n.a.	n.a.

Mid East/Africa	Kuwait	36.70	38.74	41.74	102.03	105.07	87.88	126.41	3/26/2020	n.a..	n.a..
Mid East/Africa	Lebanon	2417.61	3683.84	23524.89	14716.80	n.a..	n.a..	n.a..	n.a..	591.60	11/21/2008
Mid East/Africa	Mauritius	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mid East/Africa	Morocco	91.44	91.43	96.98	202.20	191.83	151.27	221.97	3/27/2020	350.00	10/31/2008
Mid East/Africa	Nigeria	318.67	300.77	345.07	1135.87	960.78	700.67	1326.48	3/18/2020	n.a..	n.a..
Mid East/Africa	Oman	234.30	229.06	324.59	662.60	769.93	614.45	769.93	4/30/2020	n.a..	n.a..
Mid East/Africa	Qatar	36.21	46.14	48.65	128.75	124.78	95.25	186.78	3/19/2020	379.60	2/17/2009
Mid East/Africa	Saudi Arabia	55.78	68.30	76.54	175.40	169.31	139.47	236.57	3/19/2020	335.00	2/17/2009
Mid East/Africa	South Africa	163.33	186.08	178.59	418.59	423.51	347.96	497.12	4/3/2020	663.33	10/24/2008
Mid East/Africa	Tunisia	365.19	365.15	365.15	547.59	797.24	796.77	797.58	4/7/2020	154.00	3/7/2008
Mid East/Africa	U.A.E. - Abu Dhabi	36.09	41.30	44.69	116.28	126.31	95.23	162.13	3/19/2020	475.00	2/17/2009
Mid East/Africa	U.A.E. - Dubai	91.01	97.10	116.07	296.29	294.59	220.99	351.20	3/19/2020	976.90	2/17/2009

Table 6: IMF Support to Emerging Countries

This table summarises the amounts of financial support given by the IMF to emerging countries, as reported by the IMF.

Region	Country	Type of Emergency Financing	Amount Approved in SDR	Amount Approved in US\$	Date of Approval
Asia	Bangladesh	Rapid Credit Facility (RCF)	SDR 177.77 million	US\$ 244 million	29-May-20
Asia	Bangladesh	Rapid Financing Instrument (RFI)	SDR 355.53 million	US\$ 488 million	29-May-20
Asia	Pakistan	Rapid Financing Instrument (RFI)	SDR 1,015.5 million	US\$ 1,386 million	16-Apr-20
Eastern Europe	Bosnia	Rapid Financing Instrument (RFI)	SDR 265.2 million	US\$ 361 million	20-Apr-20
Latin America	Ecuador	Rapid Financing Instrument (RFI)	SDR 469.7 million	US\$ 643 million	1-May-20
Mid East/Africa	Egypt	Rapid Financing Instrument (RFI)	SDR 2,037.1 million	US\$ 2,772 million	11-May-20
Mid East/Africa	Ghana	Rapid Credit Facility (RCF)	SDR 738 million	US\$ 1,000 million	13-Apr-20
Mid East/Africa	Jordan	Rapid Financing Instrument (RFI)	SDR 291.55 million	US\$ 396 million	20-May-20
Mid East/Africa	Kenya	Rapid Credit Facility (RCF)	SDR 542.8 million	US\$ 739 million	6-May-20
Mid East/Africa	Nigeria	Rapid Financing Instrument (RFI)	SDR 2,454.5 million	US\$ 3,400 million	28-Apr-20
Mid East/Africa	Tunisia	Rapid Financing Instrument (RFI)	SDR 545.2 million	US\$ 745 million	10-Apr-20

Table 7: Fiscal and Monetary Policy Responses to COVID-19

This table summarises the key fiscal (Panel A) and monetary (Panel B) responses implemented by the local governments and central banks of our sample of emerging countries. We hand-collected the data from the IMF website and codified the text to form these distinctive classifications.

Panel A: Fiscal Responses									
Region	Country	Date of reopening economy	Financial/ Credit policy	% of allocated budget to GDP	Taxes Policy	Stimulus package for corporate tax	Stimulus package for income tax	Gov. support to preserve employment	Health stimulus package
Asia	Bangladesh	31/05/2020	Y	n.a	N	N	N	N	N
Asia	China	15/02/2020	Y	4.1	Y	N	N	Y	Y
Asia	India	20/04/2020	Y	6.2	Y	Y	Y	Y	Y
Asia	Indonesia	05/06/2020	Y	4.2	Y	Y	Y	N	Y
Asia	Malaysia	04/05/2020	Y	4.2	Y	N	N	Y	Y
Asia	Pakistan	15/04/2020	Y	n.a	N	N	N	Y	N
Asia	Philippines	01/06/2020	Y	3.1	Y	N	N	Y	Y
Asia	South Korea	n.a	Y	n.a	Y	Y	Y	Y	Y
Asia	Sri Lanka	11/05/2020	Y	0.36	Y	Y	Y	N	N
Asia	Thailand	03/05/2020	Y	9.6	Y	N	N	N	N
Asia	Vietnam	23/04/2020	Y	3.5	Y	N	N	N	N
Eastern Europe	Croatia	23/04/2020	Y	n.a	Y	Y	N	Y	Y

Eastern Europe	Czech Republic	25/05/2020	Y	14.25	Y	Y	N	Y	N
Eastern Europe	Estonia	11/05/2020	Y	7	N	N	N	Y	N
Eastern Europe	Greece	10/06/2020	Y	14	Y	Y	N	Y	N
Eastern Europe	Hungary	04/05/2020	Y	0.6	Y	Y	N	Y	Y
Eastern Europe	Kazakhstan	11/05/2020	Y	n.a	Y	Y	Y	Y	N
Eastern Europe	Lithuania	15/04/2020	Y	5	Y	N	N	Y	N
Eastern Europe	Poland	20/04/2020	Y	4.6	Y	Y	Y	Y	Y
Eastern Europe	Romania	15/05/2020	Y	2	Y	Y	Y	Y	Y
Eastern Europe	Russia	10/06/2020	Y	5	Y	Y	Y	Y	Y
Eastern Europe	Serbia	21/04/2020	Y	6.5	Y	Y	Y	Y	Y
Eastern Europe	Slovenia	15/04/2020	Y	13.4	Y	Y	Y	Y	N
Eastern Europe	Turkey	11/05/2020	Y	5	Y	Y	Y	Y	Y

Table 7: Fiscal and Monetary Policy Responses to COVID-19 (continued)

Panel A: Fiscal Responses- contd.									
Region	Country	Date of reopening economy	Financial/ Credit policy	% of allocated budget to GDP	Taxes Policy	Stimulus package for corporate tax	Stimulus package for income tax	Gov. support to preserve employment	Health stimulus package
Latin America	Argentina	28/06/2020	Y	4.9	N	N	N	Y	Y
Latin America	Brazil	n.a	Y	10	Y	Y	N	Y	N
Latin America	Chile	n.a	Y	4.7	Y	N	N	N	Y
Latin America	Colombia	27/04/2020	Y	1.5	Y	Y	N	Y	Y
Latin America	Mexico	14/05/2020	Y	0.9	Y	N	N	N	Y
Latin America	Peru	30/06/2020	Y	7	Y	Y	Y	N	N
Mid East/Africa	Bahrain	09/04/2020	Y	4.2	N	N	N	Y	N
Mid East/Africa	Egypt	27/04/2020	Y	1.8	Y	N	N	Y	Y
Mid East/Africa	Jordan	06/04/2020	Y	n.a	Y	N	N	N	Y
Mid East/Africa	Kenya	n.a	Y	0.9	Y	Y	Y	Y	N

Mid East/Africa	Kuwait	n.a	Y	1.4	N	N	N	N	N
Mid East/Africa	Lebanon	24/04/2020	Y	n.a	N	N	N	N	N
Mid East/Africa	Mauritius	15/05/2020	Y	0.28	Y	N	N	Y	N
Mid East/Africa	Morocco	10/06/2020	Y	2.7	Y	Y	Y	Y	Y
Mid East/Africa	Nigeria	21/05/2020	Y	n.a	Y	N	N	Y	N
Mid East/Africa	Oman	28/04/2020	N	5	Y	N	N	N	N
Mid East/Africa	Qatar	06/05/2020	Y	13	Y	N	N	Y	N
Mid East/Africa	Saudi Arabia	26/04/2020	Y	2.8	Y	N	N	Y	Y
Mid East/Africa	South Africa	01/05/2020	Y	n.a	Y	N	N	Y	N
Mid East/Africa	Tunisia	04/05/2020	Y	1.8	Y	N	N	Y	Y
Mid East/Africa	U.A.E.	24/04/2020	Y	2	N	N	N	N	N

Table 7: Fiscal and Monetary Policy Responses to COVID-19 (continued)

Panel B: Monetary Responses					
Region	Country	Monetary/Easing liquidity	Reduction in monetary policy rate (%)	Bond repurchasing programme	Measures to facilitate SME/private businesses/ individuals funding
Asia	Bangladesh	Y	n.a	n.a	Y
Asia	China	Y	n.a	Y	Y
Asia	India	Y	n.a	Y	Y
Asia	Indonesia	Y	n.a	Y	Y
Asia	Malaysia	Y	0.5	N	Y
Asia	Pakistan	Y	n.a	N	Y
Asia	Philippines	Y	n.a	N	Y
Asia	South Korea	Y	0.75	Y	Y
Asia	Sri Lanka	Y	n.a	N	Y
Asia	Thailand	Y	0.75	Y	Y
Asia	Vietnam	Y	n.a	N	Y
Eastern Europe	Croatia	Y	n.a	N	Y
Eastern Europe	Czech Republic	Y	n.a	N	Y
Eastern Europe	Estonia	Y	n.a	N	Y
Eastern Europe	Greece	Y	n.a	N	n.a
Eastern Europe	Hungary	Y	n.a	Y	Y

Eastern Europe	Kazakhstan	Y	2.5	N	Y
Eastern Europe	Lithuania	Y	n.a	N	Y
Eastern Europe	Poland	Y	1.4	N	Y
Eastern Europe	Romania	Y	0.75	N	Y
Eastern Europe	Russia	Y	0.5	N	Y
Eastern Europe	Serbia	Y	0.75	N	Y
Eastern Europe	Slovenia	N	n.a	n.a	n.a
Eastern Europe	Turkey	Y	2.5	Y	Y
Latin America	Argentina	Y	n.a	N	Y
Latin America	Brazil	Y	1.25	N	Y
Latin America	Chile	Y	1.25	Y	Y
Latin America	Colombia	Y	1.5	N	Y
Latin America	Mexico	Y	1.5	N	Y
Latin America	Peru	Y	2	N	Y
Mid East/Africa	Bahrain	Y	1.55	N	Y
Mid East/Africa	Egypt	Y	3	N	Y
Mid East/Africa	Jordan	Y	1	N	Y
Mid East/Africa	Kenya	Y	1.25	N	Y

Mid East/Africa	Kuwait	Y	1	N	Y
Mid East/Africa	Lebanon	Y	n.a	N	Y
Mid East/Africa	Mauritius	Y	n.a	N	Y
Mid East/Africa	Morocco	Y	0.25	N	Y
Mid East/Africa	Nigeria	Y	4	N	Y
Mid East/Africa	Oman	Y	n.a	N	Y
Mid East/Africa	Qatar	Y	1.75	N	Y
Mid East/Africa	Saudi Arabia	Y	n.a	N	Y
Mid East/Africa	South Africa	Y	2.5	N	Y
Mid East/Africa	Tunisia	Y	1	N	Y
Mid East/Africa	U.A.E.	Y	1.25	N	Y

Figure 1: Volatility of Stock Market Indices

This figure graphically depicts the GARCH (1,1) volatility estimates for the countries' stock market indices (as explained in section 3.3.) for an extended sample time period, starting from the year 2000. Figures 1.1, 1.2, 1.3, and 1.4 include the graphs for the top ranked countries with respect to total COVID-19 confirmed cases in Asia, Eastern Europe, Latin America and the Middle East/Africa regions, respectively.

Figure 1.1: Asia (selected countries)

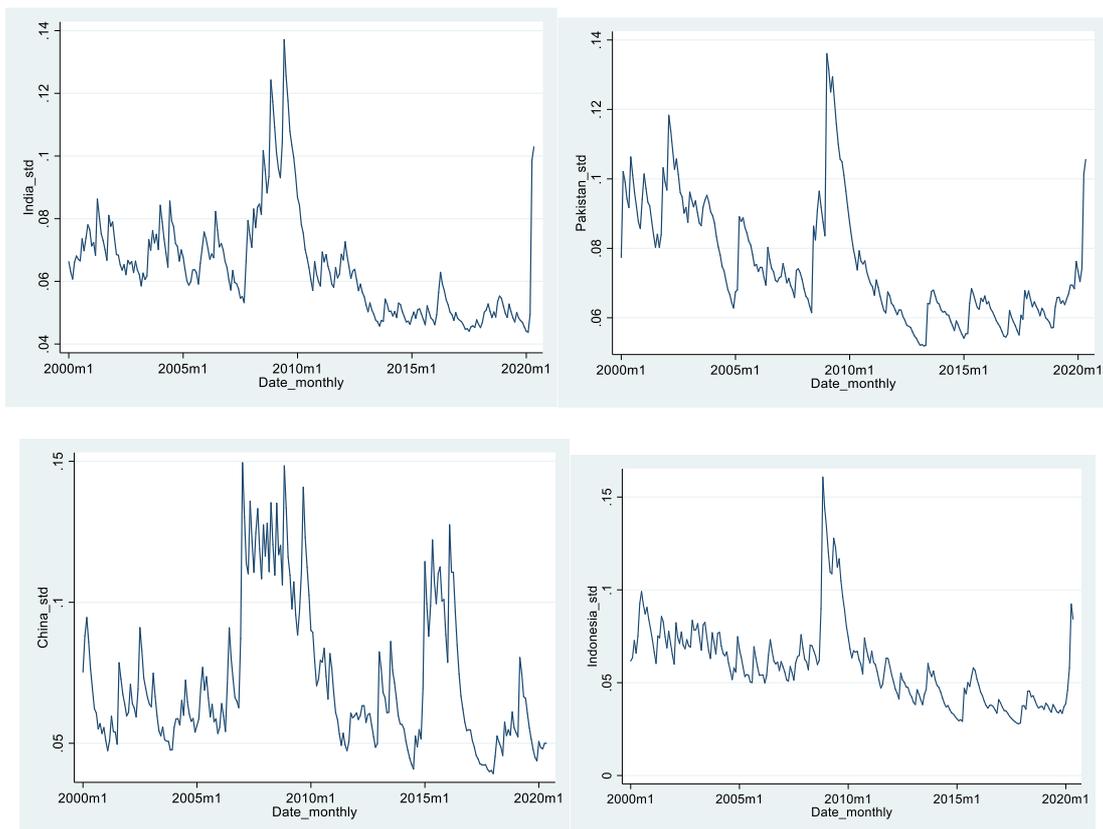


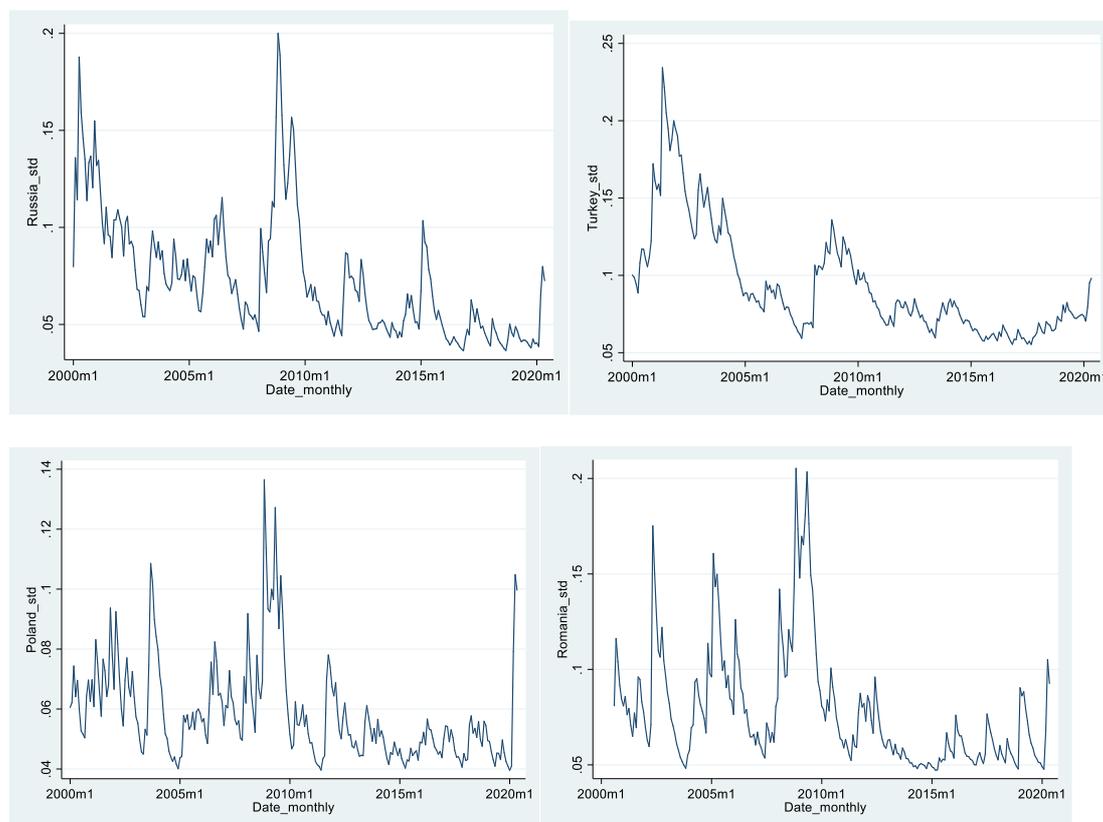
Figure 1.2: Eastern Europe (selected countries)

Figure 1.3: Latin America (selected countries)

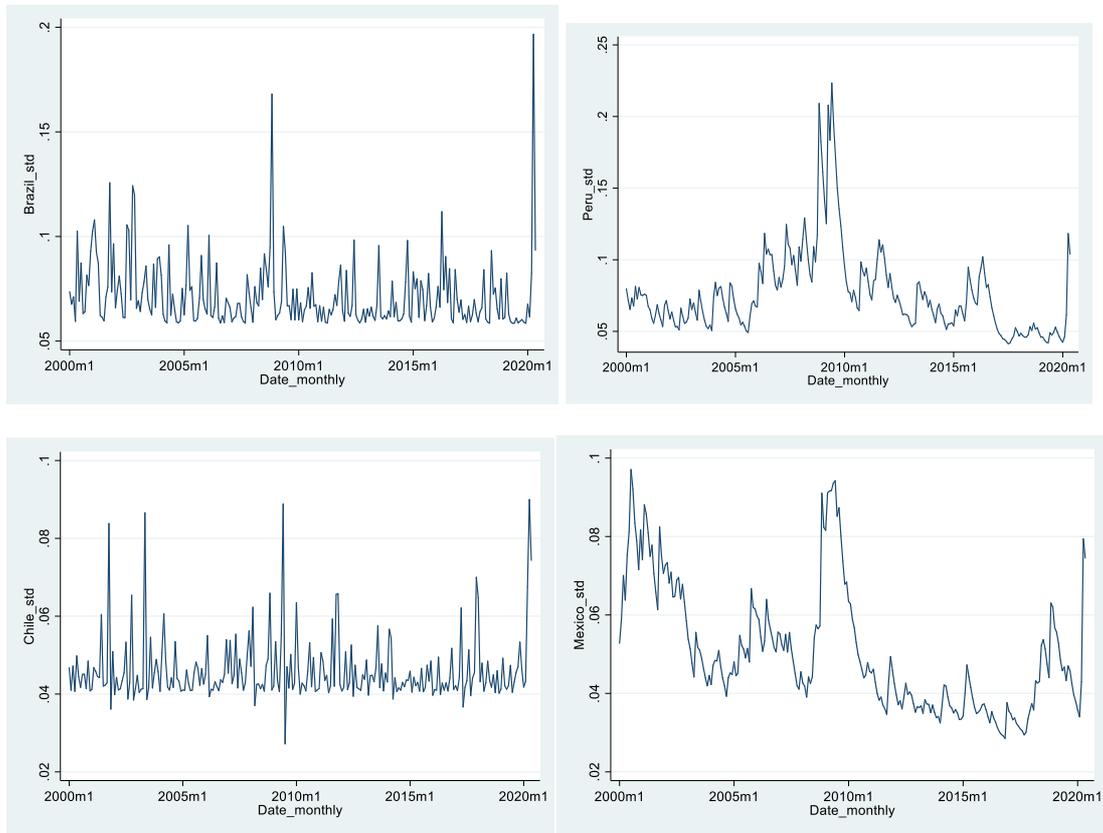


Figure 1.4: Middle East/Africa (selected countries)

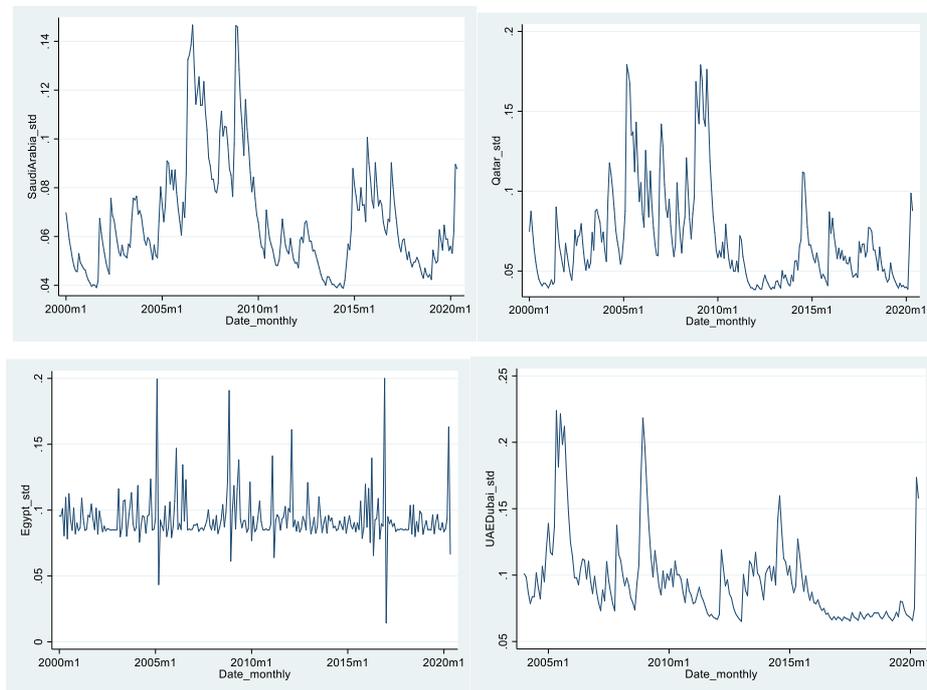


Figure 2: Conventional and Islamic Bond Issuance during COVID-19

This figure graphically illustrates the total proceeds in \$Billion raised in the conventional and Islamic bond markets during the COVID-19 period (January to May 2020) and the corresponding period (January to May) of 2019 for comparative purposes. The amounts displayed are for all kinds of issues (conventional and Islamic) in Figure 2.1, only Islamic bonds (Sukuk) in Figure 2.2, corporate conventional and Islamic bonds in Figure 2.3, only corporate Islamic bonds (sukuk) in Figure 2.4, government conventional and Islamic bonds in Figure 2.5, and only government Islamic bonds (sukuk) in Figure 2.6

Figure 2.1: All Conventional and Islamic Bonds

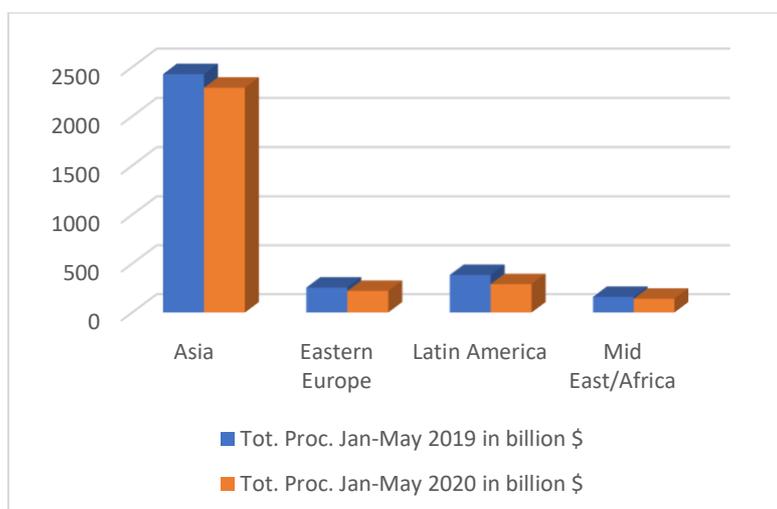


Figure 2.2: Islamic Bonds

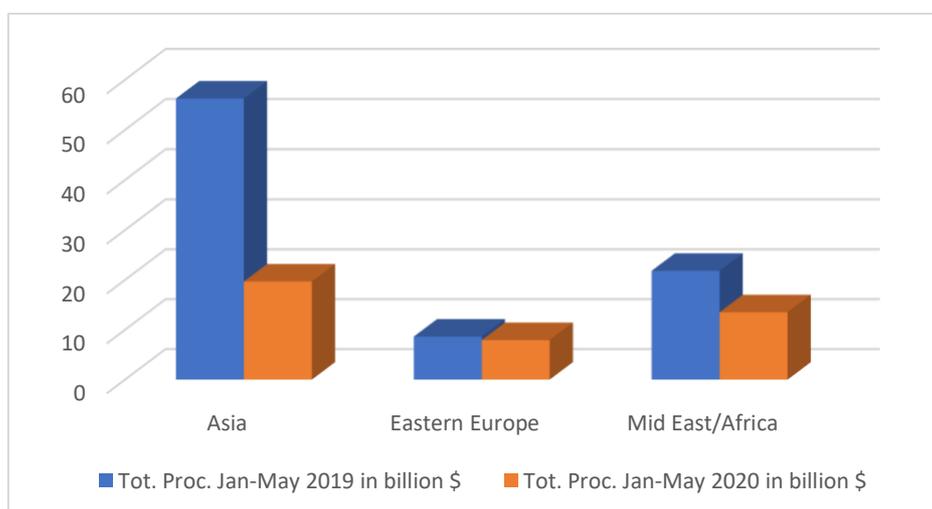


Figure 2.3: Corporate Conventional and Islamic bonds

Figure 2.4: Corporate Islamic Bonds

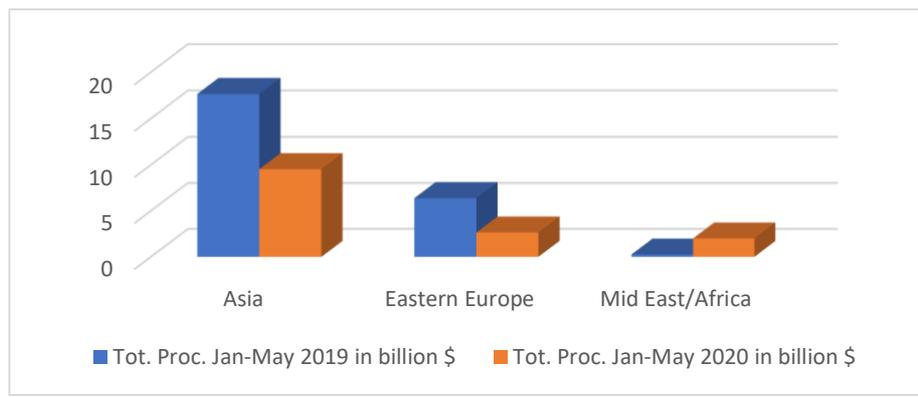
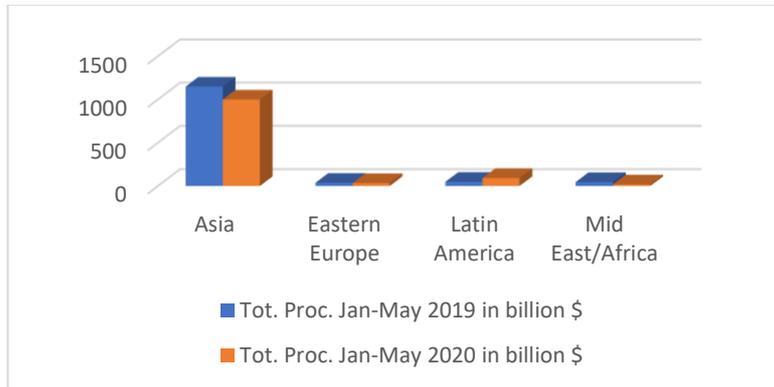


Figure 2.5: Government Conventional and Islamic Bonds

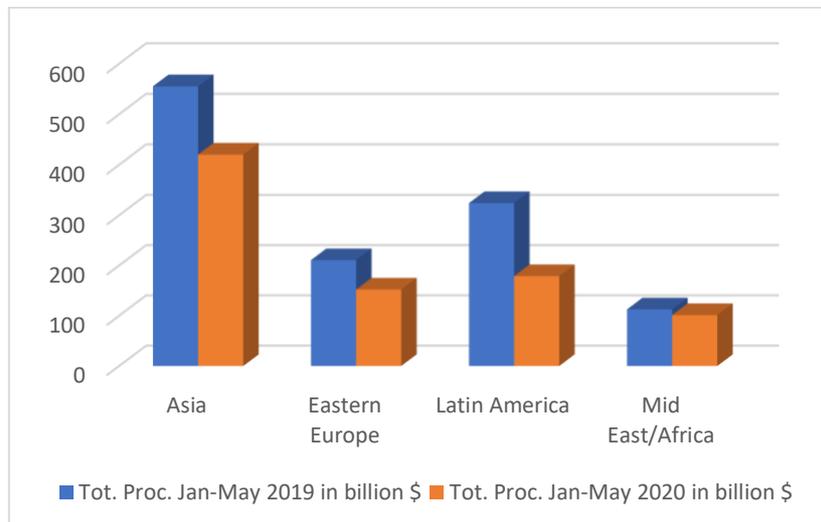
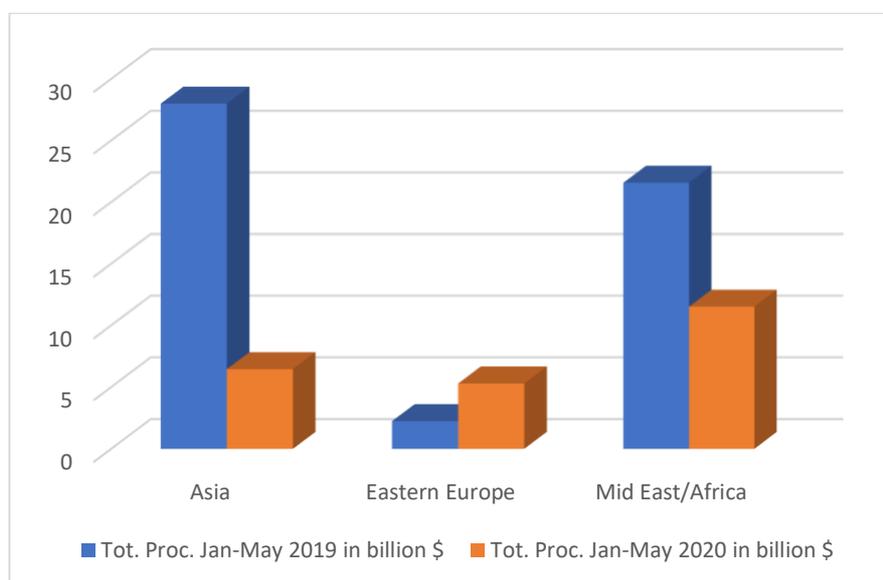


Figure 2.6: Government Islamic Bonds



About EMNES

The Euro-Mediterranean Network for Economic Studies (EMNES) is a network of research institutions and think tanks working on socio-economics policy in the Euro-Mediterranean. EMNES is coordinated by the Euro-Mediterranean Economists Association (EMEA).

The research conducted by EMNES Researchers, Associates and Fellows aims to design sound and innovative socio-economic models that are inclusive, sustainable and employment creative, to devise new models for regional integration and to provide policy recommendations towards this goal.

EMNES research agenda is organized around the following mutually reinforcing and interconnected themes led by EMNES researchers, associates and fellows:

- Governance, institutions and institutional reforms;
- Macroeconomic policies and employment creation;
- Private sector, micro, small and medium –sized enterprises development, entrepreneurship and social business;
- Digital economy;
- Healthcare policy;
- Human capital development, education, innovation, skill mismatch and migration;
- Labor markets, employment and employability;
- Finance, financial inclusion and the real economy;
- Sustainable development;
- Regional integration;
- Euro-Mediterranean economic partnership;
- Scenarios analysis and foresight.

EMNES performs **research activities**, disseminated through series of internal and external publications (studies, working papers, policy papers, policy-graphics and books) and the organization of **annual conferences**, and **policy workshop meetings and online webinars** to bring together leading researchers, policy makers and representatives of the civil society to discuss and debate optimal policies for the future of the region.

EMNES research and outputs are underpinned on the **four fundamental principles: Independence, Scientific Excellence, Policy Relevance and Deep Knowledge of Euro-Mediterranean Affairs.**

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