

Debt Forgiveness and Debt Relief for Covid-19 Economic Recovery Financed through GDP-Linked Sukuk

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Abstract— This paper proposes alternatives for governments to deal with the current pandemic crisis today. It suggests ways to deal with the increasing debt levels as a result of the fiscal stimulus issued to cushion the effects of a tremendous shock to the economy.

Firstly, the paper proposes to protect the vulnerable group (based on debt-to-income ratio or its debt-servicing ability) through debt forgiveness and help SMEs through debt relief via debt restructuring for their outstanding loans. To finance this, we propose to convert the increased public debt from these initiatives into equity through a GDP-linked sukuk to stabilise a sovereign's debt to GDP ratio. The repayment on these sukuk will be in proportion to the country's GDP whereby the repayment automatically declines when growth is weak and increases when GDP is strong. In doing so, an anticipated deep recession caused by the global pandemic slowdown will make it less likely to trigger a sovereign debt crisis.

Secondly, such a strategy would provide the issuing government with economic reprieve when growth weakens and tax receipts decline. At the same time, investors can view these sukuk as an alternative asset class through exposure to the real economy, given the low interest rate environment. Both sides are incentivized by the debt-stabilising effects of issuance that would make sovereign defaults less likely and balance risk-taking.

Keywords - debt limits, fiscal space, growth-linked sukuk, sovereign debt management.

I. INTRODUCTION

Combating the COVID-19 pandemic has elicited radical responses from governments and world health officials, which has resulted in some of the most drastic strategies that we have seen in our recent history. The consequential lock-down of the suspected originating city in China, have quickly expanded extreme measures to the quarantine of entire provinces and entire countries, slowing down economic activities substantially.

To ensure that all countries can do what is necessary to fight the economic fallout of the pandemic, the fiscal costs of this global crisis for each nation has been great. Many governments have already pledged billions in grants to support health care, liquidity to the private sector (credit lines to SMEs), short-time work schemes and stimulus packages. In order to do so, governments have to dig deep into their reserves and for others, resort to debt. The need for stable capital flows to help moderate the path to economic recovery requires support for the real economy and dealing with potential sovereign defaults, if capital runs out before the economy recovers adequately. It is therefore important to develop and utilize market instruments that can boost the recovery curve. This paper investigates the stimulus alternatives that are being implemented at the moment and suggests ways to deal with the increasing debt levels as a result of the fiscal stimulus issued to cushion the effects of a tremendous shock to the economy. It proposes the conversion of public debt into equity through GDP-linked sukuk to “stabilise a sovereign's debt to GDP ratio and makes it less likely that a deep recession will trigger a debt crisis and cause a default” [3] based on the findings of various research on GDP-linked bonds.

A. Objectives of Research

In this pandemic, our current lack of knowledge about the virus is our greatest weakness in combating it. Not knowing who has been infected, or who is a carrier without symptoms, contributes to higher infection rates. Not knowing enough about the virus delays our ability to treat those infected, or release those from quarantine with absolute confidence. It hinders our judgement to restart the economy and leaves us little choice but to take a measured approach in getting people back to work and to allow businesses to return to operations. Containment measures to “flatten the curve” are still enforced and loosened in phases in order to prevent a second wave,

which historically had been more deadly than the first¹. Adjustments to work-from-home (WFH) orders and social-distancing has transformed business-as-usual to such an extent that shifts in the economy will be inevitable. Also, within the next few months, there will be companies, both big and small, that will file for bankruptcy and there will be sovereign defaults as countries face drying liquidity.

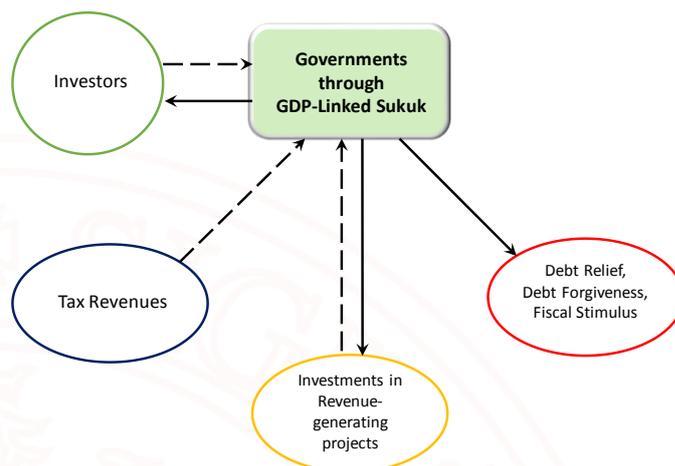
In order to prevent undesired outcomes, we propose that governments can do two things, on top of what have already been implemented. (1) Identify the ‘most vulnerable group’ within their communities and assess their household and personal debt levels for consideration of debt forgiveness. (2) Allow micro, small and medium enterprises (SMEs) to restructure their corporate debts or renegotiate for new terms as a form of debt relief. These two initiatives will be funded through a GDP-linked sukuk issued by the country. The financial burdens lifted by these initiatives will have positive effects on the economy as capital which would have been used to pay down the debts will instead be utilized as spending or consumption for the vulnerable groups and necessary expenditure for the SMEs. This cycle of spending will in turn contribute towards GDP growth and, directly and indirectly, save jobs and limit unemployment.

II. REVIEW ON GDP-LINKED BONDS AND SUKUK

A. Creating Sustainable Sovereign Instruments

In order to finance the proposed debt forgiveness for households and debt relief for SMEs, governments can issue public debt instruments such as sovereign sukuk [13; 7]. However, doing so creates more fiscal indebtedness. GDP-linked sukuk is one way to convert those debts into equity repayments based on GDP performance of the country. Such growth-linked financial instruments are a type of security akin to a “stock on a country” in the sense that it has “equity-like” features. Similarly, it pays more ‘dividends’ when the performance is better and pays less when it is worse than expected.

Figure 1: Simplified Structure of GDP-linked Sukuk
(Source: Author’s own)



Taking into consideration experiences from other financial instruments, especially the Argentina's successes with inflation-linked sukuk as well as their failings with "GDP warrants", we recommend a GDP-linked sukuk that will incorporate the following principles in its design: (i) simplicity — keeping conditional payment triggers simple to avoid failures of trading out of the money for long periods as well as hindering fair-value pricing; (ii) recognizability — maintaining the industry-standard terms present in inflation-linked sukuk contracts and adapting them where necessary; (iii) pliability — with a flexible term sheet template designed to accommodate the range of emerging and advanced economies with slight adjustments; (iv) balanced risk-sharing — with the investor sharing the rewards of the upside as well as the risks of the downside, which reinforces the debt-stabilising physiognomies of this structure for the issuer as well as incentives for return and repayment.

B. Debt Limit and Fiscal Space

We discuss the work done on GDP-linked bonds by IMF researchers [10; 22] where they show “how the structure of sovereign debt can alter the payment capacity of a government, which delivers a calculation of the maximum level of debt that a sovereign is likely to be able to sustain before it risks facing a crisis”. The concept of the debt limit captures the understanding of fiscal fatigue where “an improvement in a country’s structural characteristics or economic growth rate raises its debt limit, while the occurrence (or recognition of the possibility) of a negative shock could push an otherwise sustainable debt level to the unsustainable territory”. They found evidence of fiscal reactions where “governments face debt limits beyond which debt cannot be rolled-over”. They used these findings to compute “fiscal space” which is “defined as the difference between projected debt ratios and debt limits”, allowing for further increases in public debt without undermining sustainability.

The mechanism through which GDP-linked bonds (and similarly, sukuk) help to increase fiscal space arises because

¹ There were three waves in the Spanish Flu pandemic of 1918: the first occurred in the Spring, the second in the Autumn/Fall and the third in Winter. It is unclear what triggered the second wave.
<https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/three-waves.htm>
<https://fullfact.org/online/spanish-flu-second-wave-quarantine/>

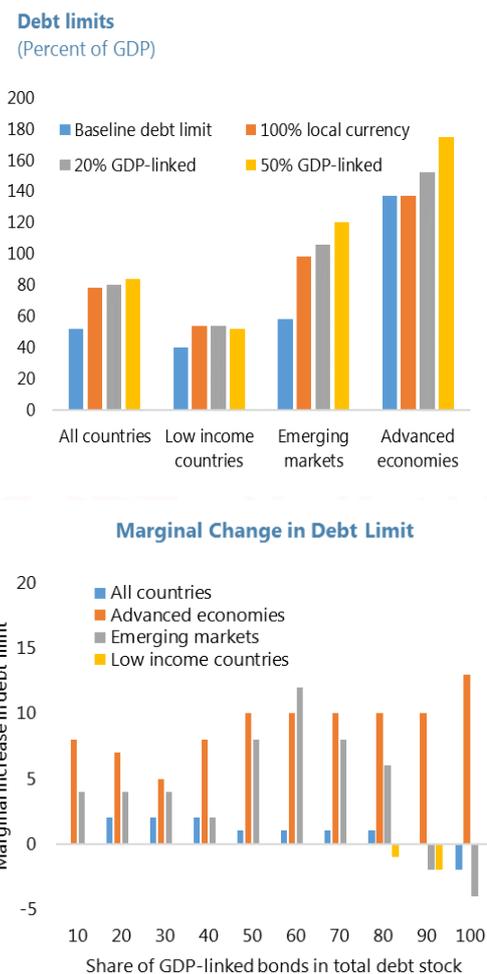
the evolution of sovereign debt ratios is affected by stochastic variation in GDP. During lower-than-expected growth, the creditworthiness of sovereigns fall because the poor ratings due to higher-than-expected debt ratio raises default risk. If the debt contract could be varied to modulate the debt service during bad times (e.g. economic shocks such as the COVID-19 pandemic), default risk would decline. Such flexibility in exchange for an increased rate of return during good times, would allow the debt contract to be written with a lower average interest rate.

Kim and Ostry [18] ran simulations that suggest fiscal space gains in the order of 10-60% of GDP for a representative advanced economy, assuming investor risk neutrality. Simulated gains in fiscal space are larger for counter-cyclical fiscal policy because, holding constant the extent of growth uncertainty, more countercyclicality in policy amplifies stochastic variation in the debt ratios by more for nominal bond than for GDP-linked bond.

In their research, Bank of England researchers [3] focused on the “amount GDP-linked bond that can potentially increase debt limits, rather than the absolute value of the debt limits themselves”. Even with the simplest model set-up used, they found that “GDP-linked bonds have a substantial impact on a sovereign’s debt limit – raising it by around 100% of GDP”.

Pienkowski [23] found that “even issuing relatively modest amounts – say 20% GDP-linked bond of the total debt stock — can have a significant impact on the debt limit”. From Figure 2, it is observed that for advanced economies (AEs), “the debt limit would rise by around 15% points of GDP, which would be enough to accommodate the median fiscal costs of a systemic banking crisis²”. Emerging markets (EMs) have a maximum debt limit when GDP-linked bonds make up around 80% of the debt stock. Beyond this, the cost of issuing these instruments outweighs the benefits, and the debt limit begins to fall. “For AEs, the debt level continues to increase with the share of GDP-linked bond” [24]. For low-income countries (LICs), however, there is no change in the debt limit (relative to the case where 100 percent of debt is local currency denominated).

Figure 2: Change in Debt Limits with Variation of GDP-linked Bond to the Total Debt Stock for LICs, EMs and AEs (Source: Pienkowski, 2017)



The results of the various GDP-linked bond composition research suggest that “there is no one-size-fits-all debt structure that all countries should target”. For LICs, with the lowest ‘baseline’ debt limit, results seem to suggest that “focus may be best directed at reducing exchange rate risk through local currency debt issuance and building institutions that can raise the maximum sustainable primary balance” [23]. For EMs, when they have adequately diminished exchange rate risk, the benefits from GDP-linked sukuk become obvious. But Pienkowski’s results show that AEs benefitted the most, “with debt limits rising by 15% points when GDP-linked sukuk make up one-fifth of the debt stock”.

From a cost-benefit approach, government issuers may consider starting at lower levels of the debt stock, since the ‘marginal benefit’ (in terms of the change in the debt limit) reduces across the board for all countries. It should be noted that the “results presented are sensitive to the parameter assumptions, perhaps the largest uncertainty involves the risk premium required by investors to hold local currency and GDP-linked bond” [23]. Also, a useful consideration is to

² Amaglobeli et al. [1] estimate that the “direct fiscal cost of a systemic banking crisis recapitalisation and asset purchases) has a median of 6% of GDP; while the median increase in public debt associated with these events is around 14% of GDP”. “An 8%-point increase in the debt limit for EMs is also substantial, enough to accommodate additional borrowing through a typical recession” [16].

incorporate a long maturity debt into the tenure of the model, or even to contemplate perpetuity. Other valuable considerations would include capturing the various policy frameworks in different countries such as currency union. Such countries have considerably less latitude to control nominal GDP through monetary and fiscal policy, and hence the perceived benefits of GDP-linked sukuk based on the study may be impaired.

III. COPING WITH THE ECONOMIC REPERCUSSION OF THE PANDEMIC AND INCREASING LEVELS OF SOVEREIGN DEBT

As mention in the earlier section of this research, we propose that governments do two things, on top of what have already been implemented so far in terms of austerity measures to save lives. In the subsequent phase of this pandemic, the next order of business is to save the economy. In order to prevent further undesired outcomes, (1) Identify the ‘most vulnerable group’ within their communities and assess their household and personal debt levels for consideration of debt forgiveness. (2) Allow micro, small and medium enterprises (SMEs) to restructure their corporate debts or renegotiate for new terms as a form of debt relief. These two initiatives will be funded through a GDP-linked sukuk issued by the country. The financial burdens lifted by these initiatives will have positive effects on the economy as capital which would have been used to pay down the debts will instead be utilized as spending or consumption for the vulnerable groups and necessary expenditure for the SMEs. This cycle of spending will in turn contribute towards GDP growth and, directly and indirectly, save jobs and limit unemployment, on the road to economic recovery.

A. Debt Forgiveness

Consumer debt is a concern today because it has reached record levels [2] and because its rise comes as powerful trends³ shape how debt is incurred and the consequences it has for financial security. We see the issue of consumer debt as a necessary challenge, different in many ways than the more widely understood mortgage debt (borrowing to buy a home) that precipitated the Great Recession of 2008. Our definition includes all forms of non-mortgage debt such as student and auto loans, credit cards, and non-loan obligations including medical debt and money owed to local governments that have come to use such fines and fees as a key revenue source. The scope of this mounting crisis is troubling: for example, debt in collections now appears on one-third of consumer credit reports.

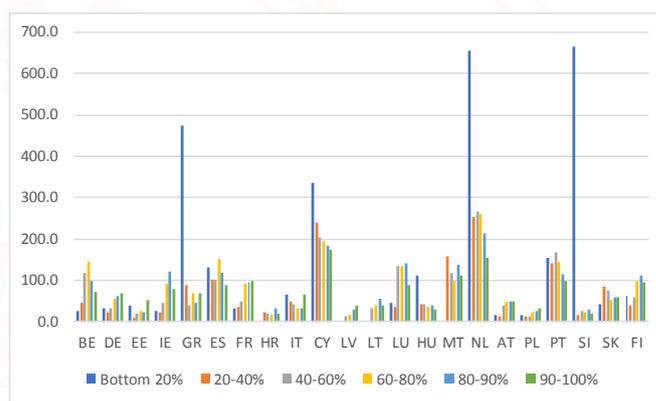
The approach to these can be worked out through a framework that is built on the analyses of historical patterns, contemporary drivers, and differences among demographic groups. The vulnerable group can be defined via its debt-to-income (DTI) indicator — the higher the number, the more vulnerable the group is. Based on this information, the classification of the outstanding debts and its volume, the debt

³ Trends such as stagnating incomes, new forms of credit availability, and structural changes in medical and education markets.

forgiveness can be applied to the group below a certain DTI value. Targeted forgiveness of household debt held by borrowers whose loans are most likely to undermine their financial security (i.e. the low-income debtors determined through the DTI value).

For illustration purposes, we have taken the debt-to-income ratio (DTI) and debt service ratio (DSI) for European countries for the year 2017⁴ only. From Figure 3, we can see that the bottom 20% of Greece (GR), Cyprus (CY), Netherlands (NL) and Slovenia (SI) are 3 times in debt against their income. Overall, indebtedness is highest across all sections of income levels for Cyprus and Netherlands, with most of them owing about 200% (and exceeding) of their income. But before we determine the most vulnerable group and apply a cut-off, we need to understand the debt-to-service ratio of these groups.

Figure 3: DTI and Household Debt Outstanding



Note: The debt to income (DTI) ratio is the ratio of total debt⁵ to gross household income⁶.

* For full country abbreviation list, refer to Appendix A.

Source: Household Finance and Consumption Survey (Year 2017).

From Figure 4, we can observe that although Netherlands is one of the two countries that is considered to have high debt to income overall, its debt-to-service ratio is typical of other European countries, except for its bottom 20% which far exceeds all others. From here, we can determine the most

⁴ For a better cross-sectional study, the investigation can be extended to 5 years or more. Debt tenure typically exceed 5 years, so the debt outstanding does not change very much in shorter time spans.

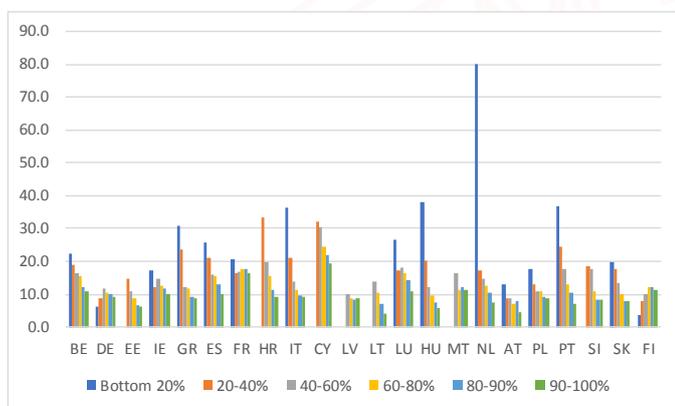
⁵ Total debt includes mortgages collateralised on household's main residence, mortgages collateralised on other real estate property owned by the household, non-mortgage loans (consumer credit loans, private loans and other loans not collateralised on household's real estate property), credit lines/bank overdrafts debt and credit card debt (outstanding amount on which interest is paid at the end of the billing period) - unless otherwise specified for a given country (see country notes below for more detail).

⁶ Total gross household income is calculated as the sum of the employee income, self-employment income, income from public pensions, income from private and occupational pensions and income from unemployment benefits (items collected for households members aged 16+) and income from social transfers other than unemployment benefits, regular private transfers (such as alimonies), rental income from real estate property, income from financial investments, income from private business or partnership and regular income from other sources (items collected at the household level).

vulnerable group by setting the cut-off as 25% or 30% of DSI, i.e. about a quarter of their monthly incomes goes to repayment of debts.

The next approach for this Debt Forgiveness for Most Vulnerable Households policy is to assess if (1) dissolution of household debt capped at a certain value per borrower (e.g. \$50,000–\$100,000), or (2) full termination of all household debt for the extremely vulnerable group, where we can set as those with 25% or 30% of DSI.

Figure 4: DSI and Household Debt Outstanding



Note: The debt service to income ratio is calculated as the ratio between total monthly debt payments and household gross monthly income⁷, among households with debt payments.

Source: Household Finance and Consumption Survey (Year 2017).

B. Debt Relief or Debt Restructuring

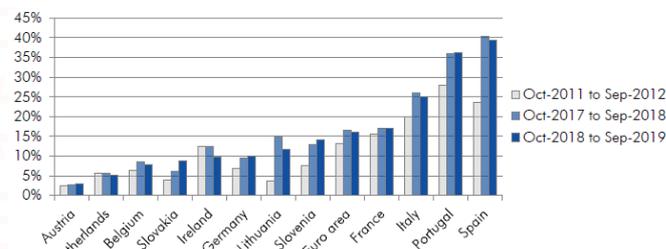
Governments and nations have good reason to fear economic distress in SMEs, because economic and health crises can produce massive unemployment and stunt economic recovery. SMEs are the backbone of most economies in the world — in Asia alone, they account for more than 70% of all businesses and between 32 and 87% of total share of employment outside the agricultural or farm-based workforce in Asia⁸ [15]. An analysis of individual countries in Europe reveals that the “support SMEs receive from financial institutions to help finance their businesses does not reflect their contributions to their country’s GDP and employment, despite being the critical drivers for growth” [9]. In general, SME loan volumes in the EURO region are less than 40% of their contribution to GDP,

⁷ Total gross household income is calculated as the sum of the employee income, self-employment income, income from public pensions, income from private and occupational pensions and income from unemployment benefits (items collected for households members aged 16+) and income from social transfers other than unemployment benefits, regular private transfers (such as alimonies), rental income from real estate property, income from financial investments, income from private business or partnership and regular income from other sources (items collected at the household level).

⁸ Asia-Pacific Employment and Social Outlook 2018: Advancing decent work for sustainable development by International Labour Organization, 2018. https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-bangkok/documents/publication/wcms_649885.pdf

and constitute less than 20% of total loans, according to IMF data.

Figure 5: Small loans (<€250k) with respect to total NFC lending (NBV*), by percentage and country



* NBV: New business volume, 12 months backward moving average.

Source: EIF (2019) based on ECB Data Warehouse

Huerta et al. [14] show that “small loans are a good proxy for the SME lending market”. In the EIF report [9], it was observed that “small loans are relatively more important in the credit market of vulnerable countries”. From Figure 3, in Spain and Portugal, for example, “small loans make up 40% and 35%, respectively, of new loans granted to non-financial corporations (NFCs). For September 2019, both shares stayed roughly constant compared to the same month in 2018. Also, in Italy this share is relatively high at 25%. In Austria, the Netherlands, Slovakia, Belgium and Germany, the proportion of small loans in total new business volume is much smaller and does not exceed 10%”.

The next approach for this SME Debt Restructuring policy is to calculate the cost of delaying the monthly payments for their SME loans. This can be easily calculated through the banks’ data. Options are (1) to retain the same monthly payments by offering moratoriums, or (2) renegotiate monthly payment premiums based on longer tenures or reduced monthly borrowing rates.

IV. BENEFITS AND ADVANTAGES OF GDP-LINKED SUKUK

The idea of issuing GDP-linked sukuk is similar to having some kind of insurance against unprecedented economic shocks in very uncertain times. Past debt crises that involved countries like Portugal, Ireland, Greece and Spain over a decade ago would have been less severe if their debt had been coupled to their GDP. Investment in GDP-linked instruments allow for risks to be more acceptable, given the unlimited upside to investing in entire economies. In addition, global investors can achieve the benefits of diversification by holding GDP-linked sukuk of nations tied to their growth and survival. Embracing GDP-linked sukuk puts pressure on delivering performance for sovereign debt managers but rising public debt burdens should incentivise many of them to consider new forms of borrowing that appeal to a wide range of investors. This includes ones with limited exposure to conventional sovereign sukuk. Outreach by the GDP-linked sukuk working group suggests there is potential demand for the new

instruments from pension funds, sovereign wealth funds, insurance companies, equity funds and hedge funds [4; 17].

There are important advantages to issuing GDP-linked sukuk for both the issuing countries and the investors, as discussed in this research (see also [11]). The system-wide benefits afforded by growth-linked instruments far exceed those that can be achieved by individual investors or countries. GDP-indexed securities can be viewed as desirable vehicles for international risk sharing and for avoiding the disruptions arising from formal default. The dead-weight costs of long debt restructuring at times of crises would be avoided, as debt was automatically modified. GDP-linked sukuk have characteristics of a public good as they generate systemic benefits above those accruing to individual investors and countries. If GDP-linked sukuk lowered risk of default, they would make remaining conventional sukuk safer, in the same country [11]. By reducing likelihood of defaults, they would also benefit a broader range of investors than just those directly affected, along with economies not issuing them, but which would reduce their chance of contagion from other countries, as well as economies and multilateral institutions.

The reality is that, despite its demonstrated benefits, GDP-indexed debt has not been widely issued, beyond countries having difficulties in servicing their debts. The inertia caused by financial innovation coupled with the complexity of implementing new financial inventions may be the impediments. But like most things worth accomplishing, it takes time and effort to pursue an innovation until its successful implementation. Perhaps, the current economic dire straits caused by the pandemic may provide the impetus and motivation to do so.

V. CONCLUSION

With the increasing levels of sovereign debt levels and diminishing reserves, “GDP-linked debt is an attractive instrument for this purpose because it can ensure that debt stays in step with the growth of the economy in the long run and can create fiscal space for countercyclical policies during recessions” [18]. Thus, GDP-linked debt would give governments more room to maneuver in its fiscal policy space, which would be especially valuable at a time like the present when fiscal space is scarce, and immediate solutions are urgently needed.

While such sukuk market development is still not widespread, the debt capital markets have come a long way since the Brady bonds of the late 1980s and early 1990s. The ability to protect the vulnerable group and SMEs at this crucial time where most countries are restarting their stalled economies, such instruments also help investors manage country risks and further raises its desirability. GDP-linked sukuk could also allow risk to be shared across borders more efficiently and safely, while potentially reducing the need for international bailouts of sovereigns and so reduce morally hazardous behaviors and agency risks.

ACKNOWLEDGMENT

We acknowledge the idea from Prof. Dr. Abbas Mirakhor who initially proposed it as a solution to protect the most vulnerable households and SMEs.

APPENDIX

COUNTRY	CODE
Belgium	BE
Germany	DE
Estonia	EE
Ireland	IE
Greece	GR
Spain	ES
France	FR
Croatia	HR
Italy	IT
Cyprus	CY
Latvia	LV
Lithuania	LT
Luxembourg	LU
Hungary	HU
Malta	MT
Netherlands	NL
Austria	AT
Poland	PL
Portugal	PT
Slovenia	SI
Slovakia	SK
Finland	FL

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