WORLD BANK GROUP
Finance, Competitiveness & Innovation

Developing Insurance Markets

The Insurance Sector's Contribution to the Sustainable Development Goals (SDGs)

June 2021

Susan Holliday, Inna Remizova and Fiona Stewart

Insurance is an important part of the financial sector. It supports broader economic and general well-being in developed economies in a way that is so entrenched and accepted that it is not widely recognized. In less developed markets, insurance can remain nascent for many years and then pick up through a dynamic development phase and reach a more mature phase. As would be expected, many actors contribute to this development. This report is part of a larger effort to understand the key drivers of development in insurance sectors in a range of jurisdictions especially including the role of policy and project interventions.

This report has been prepared by Susan Holliday (Senior Adviser), Inna Remizova (Financial Sector Consultant) under the guidance of Fiona Stewart (Lead Financial Sector Specialist) in the Finance, Competitiveness, and Innovation (FCI) Global Practice at the World Bank. The authors are grateful for guidance and comments particularly from Richard Mark Davis, Samantha Cook, Swee Ee Ang, Brinda Devi Dabysing as peer reviewers at the World Bank. The authors are also thankful to other colleagues and stakeholders who were involved in the discussions and in support of the work.

This material has been funded in part by the UK aid from the UK government, however the views expressed do not necessarily reflect the UK government's official policies. The report has been prepared as part of a broader program of the Disaster Risk Financing and Insurance Program.

Contents

Tables

Figures

Boxes

Abbreviations and Acronyms

GIH	Global Infrastructure Hub
GDP	Gross Domestic Product
ECOSOC	Economic and Social Council
ESG	Environmental, Social and Governance
IAIS	International Association of Insurance Supervisors
IAEG-SDGs	Inter-Agency and Expert Group on SDGs Indicators
IOPS	International Organization of Pension Supervisors
IoT	Internet of Things
IMF	International Monetary Fund
MSMEs	Micro-, Small and Medium-sized Enterprises
PA	Personal Accident & Healthcare
P&C	Property and Casualty
PPP	Public-Private Partnership
SDG	Sustainable Development Goal
SDSN	Sustainable Development Solutions Network
WGI	Worldwide Governance Indicators
UHC	Universal Health Coverage

Developing Insurance Markets

Motivations and initiatives to grow the institutional investment role of emerging market insurers

Susan Holliday, Inna Remizova and Fiona Stewart

Summary

Insurance can play a significant role in helping countries achieve the UN SDGs in terms of economic growth, social inclusion and environmental protection. This can be achieved through the risk transfer mechanisms of households, businesses and the public sector.

The paper has a twofold purpose. First, to help regulators and insurance policymakers in emerging markets make the case for supporting insurance market development through drawing more attention to contribution the sector can make to achieving national SDGs. Secondly, to help investors, donors, international organizations focus their insurance market development efforts in countries where the sector has the maximum potential to contribute to the achievement of SDGs.

This paper considers the role of insurance companies as underwriters facilitating risk transfer, as investors and asset managers and as corporate citizens and employers. The underwriting dimension is currently the most significant but all three have a role to play in supporting the SDGs.

The paper proposes that SDGs where insurance can play the strongest role are: SDG 13 (Climate Action), SDG 11 (Safe Cities and Communities), SDG 3 (Good Health and Well Being) and SDG 10 (Reduce Inequality), followed by SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth) and SDG 2 (Zero Hunger and Food Security). Interestingly, insurance is only explicitly mentioned once in the SDGs, in SDG 8, whereas the paper argues that the sector may make a stronger contribution to some of the other goals. The paper also discusses how insurance can contribute more to these goals – including through targeted interventions in countries where conditions for right for insurance market development and SGD targets will need greater support to be met. Countries were screened for performance vs. the selected SDGs, by the potential for insurance sector development, as well as for minimum necessary enabling conditions for market growth. The paper concludes that the role of insurance has been somewhat overlooked in the context of the SDGs and that this is largely because the current indicators largely do not capture metrics relating to insurance. In order to be able to better assess the role of insurance and motivate the industry to contribute more to the SDGs, more consistent and disaggregated data collection on the following is recommended: lines of business; invested assets; gender disaggregated data. The UN, governments and the insurance industry are also encouraged to put greater emphasis on developing the sector as a means to achieving the SDGs.

Introduction

It has long been believed that insurance has an important role to play in the achievement of the UN Sustainable Development Goals (SDGs). There has been some research on this topic, but it has typically been either at a very high level *(e.g. GIZ, 2017[1]; Swiss Re, 2017[2])*, or alternatively very specific, based on analysis of discrete insurers' contributions to SDG *(CISL, 2019; Allianz, 2019).* Research to date has mostly focused on the broad understanding of SDG goals, rather than on their actual components. Given the worldwide relevance of SDGs and the commitment of countries to track progress annually by 2030, insurance supervisors, regulators and investors recognize the need for clear links between insurance and development goals. This note aims to help reinforce these links and further explore the role of insurance in achieving the SDGs.

The role of insurance is multifaceted and includes strengthening household and business resilience and facilitating the flow of capital. Looked at from different angles, it is clear that insurance contributes to SDGs. However, for the most part, insurance is not well recognized as a tool in achieving these goals. The aim of this note is to show which SDGs insurance can most contribute to and how that would come about, and to explore how the insurance industry can support governments to achieve progress towards the SDGs. This note considers the role of insurance[3] in the SDGs from three angles.

- First, the view from the transmission mechanism of the impact of insurance ***through households, businesses and the public sectors*** is considered;
- Then, the impact on SDGs is considered ***through the dimensions of economic growth, social inclusion and environmental protection***;
- Finally, the point of view of an insurance company is taken with an examination of how insurers can support the SDGs ***through underwriting and risk transfer, as an investor and as a corporate*** **citizen /employer** is considered.

I. Insurance and SDGs: Transmission Mechanisms

1. Insurance & SDGs

The 17 SDGs[4] are broken down into 169 targets and 231 unique indicators, which are incorporated into the SDG Indicators Database. Targets specify the goals and indicators represent the metrics by which the countries aim to track whether these targets are achieved. Each target has one or more indicators. The indicators were developed by UN agency expert group on SDG indicators called the Inter-Agency and Expert Group on SDGs Indicators (IAEG-SDGs). They were agreed by UN statistical commission and adopted by Economic and Social Council (ECOSOC) on General Assembly. The global SDG Indicators database[5] is accessible to investors, regulators and supervisors. The development of the SDG database is an ongoing process, currently representing 208 geographical areas over the 2000-2019 timeframe. Data is updated annually or once in two or three years and sometimes there is a delay in

[1] GIZ (2017) identified that insurance will be critical to the achievement of six of 17 SDGs, and important to the completion of five other SDGs. It distinguishes between those SDGs where insurance can make a direct contribution at a primary level, and those where it indirectly yet substantially contributes at a secondary level.

[2] According to Swiss Re (2017), the insurance industry's contributions to seven of the 17 SDGs is "high", "medium" to five and "low" to the remaining five SDGs.

[3] "Insurance" means insurance provided by (private) insurance companies, so "insurance industry" and "insurance sector" exclude social security unless otherwise stated.

[4] Sustainable Development Goals as part of 2030 Agenda for sustainable development were adopted by the world leaders in September 2015 and came into force in January 2016. Governments, businesses, civil society and the UN are mobilizing efforts to achieve the 2030 Agenda.

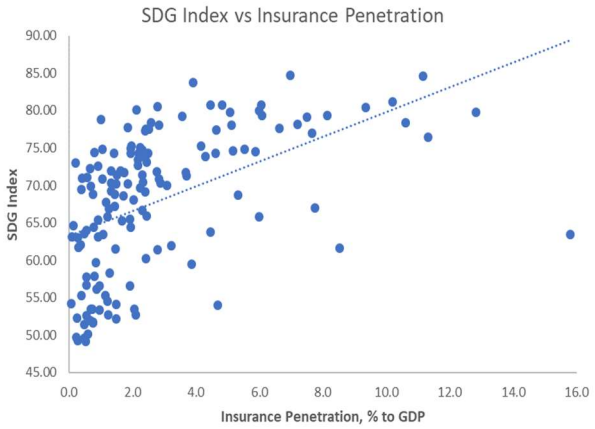
[5] https://unstats.un.org/sdgs/indicators/database/

reporting, so that countries have outdated statistics. Governments can develop their own national indicators to assist in monitoring progress.

SDG indicators do not capture insurance metrics – and global insurance data overall is lacking. Insurance was mentioned only once in *Target 8.10. Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all*. However, the indicators under this target do not measure the expansion of access to insurance services (by way of contrast, the number of commercial bank branches, number of automated teller machines, the proportion of adults with an account at a bank or other financial institution or with a mobile-money-service provider are all measured). Global insurance data is also lacking. Only broadly aggregated life and non-life data are available pro bono on a global basis. Apart from allowing for the establishment of links through each SDG, the lack of disaggregated data is a challenge for supervisors and regulators in measuring and tracking the insurance impact on sustainable development goals overall. Analysis in this report underscores the need for global insurance disaggregated statistics and open access.

Countries with high levels of insurance penetration have made the most progress in meeting their SDG commitments – as measured by the SDG index[6]. As a starting point for the analysis in this paper, countries' progress towards the SDGs was compared with their level of insurance market development – as measured by the insurance penetration rate.[7] The SDG index score can be interpreted as the percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved. *Figure* 1 shows that countries with higher insurance penetration have achieved greater progress in SDG implementation, while countries with lower insurance penetration have achieved less. This is to be expected as, not only is insurance market penetration closely correlated with GDP and income levels[8], but the SDGs have also been criticized as having a strong GDP or income bias**.**

Figure 1: SDG Index[9] and Insurance Penetration, by Country, 2018



Source: AXCO, SDG index database 2018 *(Sustainable Development Solutions Network (SDSN) and the Bertelsmann Stiftung for the 2018 SDG Index).*

[6] The SDG Index measures a country's total progress towards achieving all 17 SDGs[6]. SDG Index and Dashboards that assess progress are published annually by the Sustainable Development Solutions Network and the Bertelsmann Stiftung as part of the Sustainable Development Report. This is not an official SDG monitoring tool, but instead complements the efforts of national statistical offices and international organizations to collect data on and standardize SDG indicators.

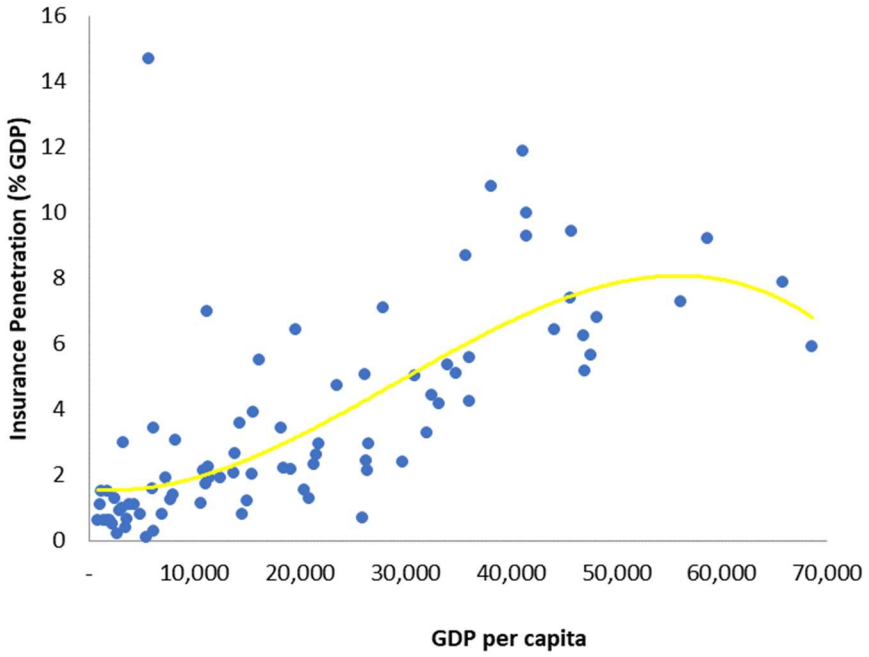
[7] The insurance penetration rate is the ratio of insurance premiums underwritten compared with a country's GDP.

[8] There is ample evidence of a general correlation between insurance penetration and GDP growth, although the range of impact differs depending on the methodologies and scope of different surveys. For example, empirical evidence from (Lee et al. 2013) suggests that for OECD countries, a 1 percent increase in life insurance premiums raises real GDP by 0.06 percent per year. Covering a larger set of 77 advanced and emerging economies for the period 1994–2005, (Han et al., 2010) find that a 1 percent increase in total insurance penetration led to a 4.8 percent increase in economic growth per year (versus a 1.7 percent increase in economic growth per year when only considering life insurance).

[9] https://sdgindex.org/reports/sustainable-development-report-2020/

However, on closer examination, the relationship between SDG progress and insurance penetration is not only explained by a country's level of income. The Sustainable Development Report *(2020)* reveals that high income countries are not on track to achieving environmental goals (SDGs 12-15) and, by contrast, the bottom countries of the SDG Index ranking perform better on many environmental SDGs (due to very low levels of consumption and production), but they are quite low on SDG (1-9), that represent poor access to basic health services, water, sanitation, and other infrastructure. Classic 'S-curve' analysis also shows a more nuanced relationship between insurance market development and GDP – rising particularly sharp at certain levels of average income, see *Figure 2 (Enz, 2000)*. The 'sweet spot' between insurance market potential and SDG achievement gaps is examined later in the paper.

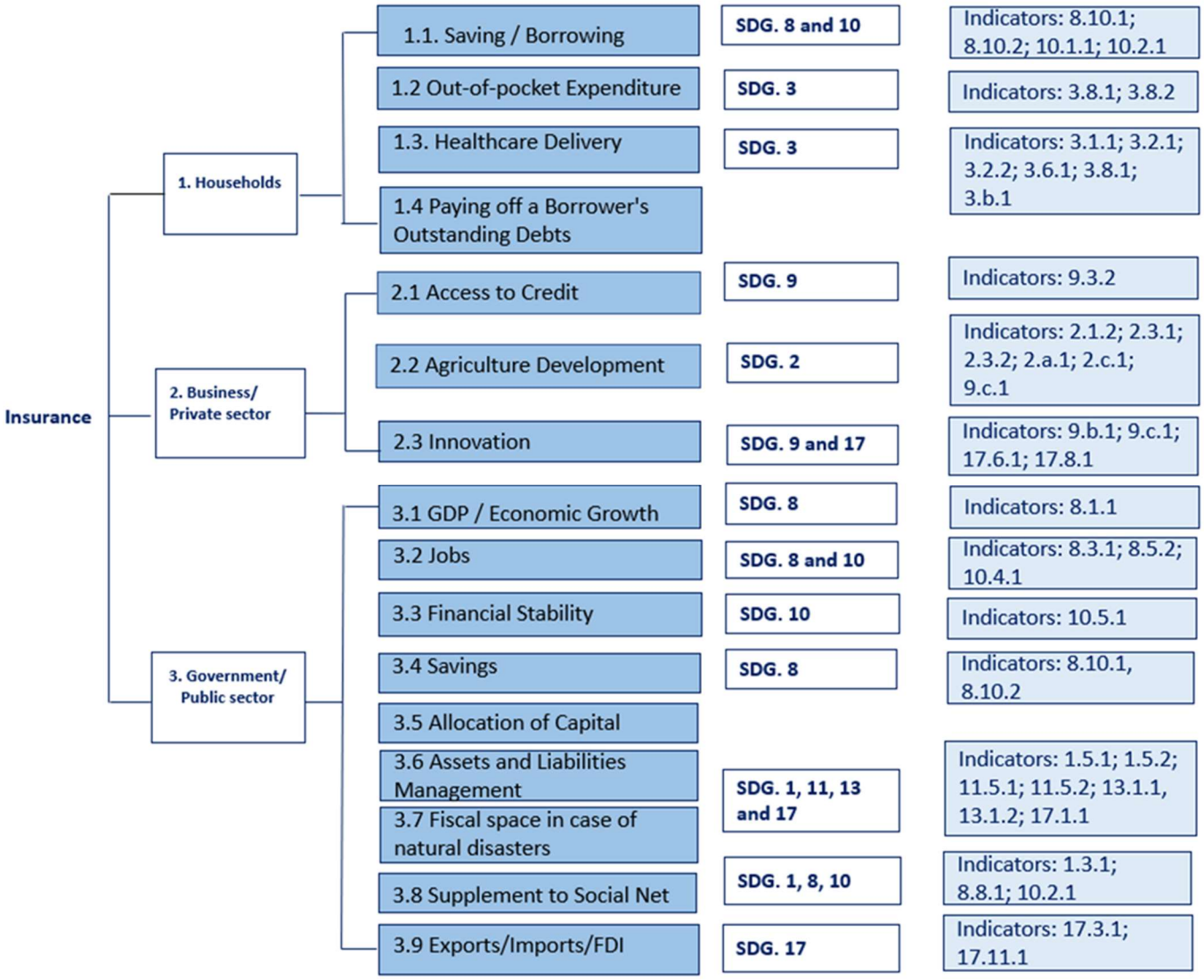
Figure 2: Insurance Market Development – "S-Curve"



Source: insurance penetration data, Swiss Re, GDP per capita, World Development Indicators.

***Figure 3* represents the three main transmission mechanisms through which the insurance sector can contribute to the achievement of SGDs: through households, through the private sector, and through the public sector.** In turn, each of these routes can have impact on multiple SDGs. For example, for households, insurance can help with saving and borrowing *(SDG 8 and 10)*, healthcare delivery and decreasing out-of-pocket expenditure *(SDG 3)*; for businesses insurance can solve issues with access to credit *(SDG 9)*, agriculture development *(SDG 2)*, innovation *(SDG 9 and 17*); whilst for governments, insurance contributes to economic growth *(SDG 8),* jobs and employment *(SDG 8 and 10)*, financial stability *(SDG 10)*, savings *(SDG 8)*, as well as creating fiscal space in case of natural disasters *(SDG 1; 11; 13; 17)*, playing a role as a supplement to social nets *(SDG 1; 8; 10)*, attracting foreign direct investments and facilitate export-import operations *(SDG 17)*.

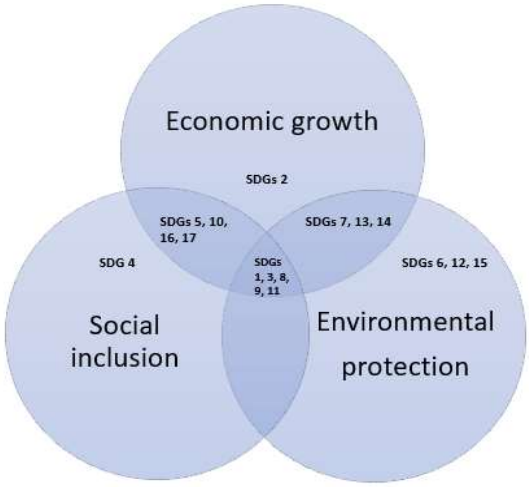
Figure 3: Transmission Mechanism of Insurance Impact and SDG Indicators



Source: developed by authors.

Sustainable development goals take a holistic approach linking economic development, social inclusion, and environmental protection – with insurance also having multiple effects on these dimensions as well. Based on a critical examination of the goals, targets or indicators, the impact which the insurance mechanism can have on the SDGs was also considered via these lenses. *Figure 4* outlines the main SDGs where insurance can have an impact via these routes. Insurance contributes to social inclusion by covering the most marginalized groups of society (including the disabled, women, unemployed youth, sexual and gender minorities, the elderly, and indigenous peoples). Environmental protection contribution was assessed considering transmission mechanisms through both the assets and liabilities of insurance companies.

Figure 4: Insurance Contribution



Finally, the insurance sector's contribution to the SDGs was considered: (1) through underwriting and risk transfer; (2) as an investor; and (3) as a corporate citizen /employer.

- *Underwriting and risk transfer*: insurance serves to finance the rebuilding of properties after a loss, pays for needed healthcare, protects the individual from financial loss in the event of accident and assures lenders that if the mortgaged property is lost or destroyed the repayment of the loan will still be made.

- *Investor and asset manager*: insurers, on the asset side of their balance sheets, can contribute to the sustainable development agenda. Insurance companies are significant institutional investors, providing financing to the real economy through investments in green, sustainable, impact bonds, clean energy assets, resilient infrastructure, integrating environment, social and governance (ESG) factors in asset allocation and stewardship activities.

- *Corporate citizen and employer*: insurance companies employ agents and company representatives throughout the world. Corporate citizenship refers to a insurers' responsibilities toward society. The goal is to produce higher standards of living and quality of life for the communities that surround them.

While all three are important, currently the role of insurance companies as underwriters who can transfer and mitigate risks was the most significant.

Each SDG indicator (out of 231) was assessed using these three lenses. Based on a literature review of previous studies, recent empirical evidence on the contribution of insurance to development outcomes, an analysis of case studies in selected countries, and a review of World Bank insurance market development projects, the potential impact of insurance on each SDG was estimated using a scoring scale: limited impact – 0; moderate impact – 1; strong impact – 2; significant impact – 3, with the scores averaged for each goal. The authors note that there is clearly judgment involved in these assessments (which would benefit from further econometric studies to support) – but propose that this analytical framework gives an overall picture of the potential for insurance to impact SDGs.

***Table 1* shows a summary of the SDG where it is proposed that insurance has the most impact.** The SDGs where insurance makes a strong or medium impact will be discussed in detail in the next sections of these report.

Table 1: Assessment the Impact of Insurance on SDGs

Impact	Sustainable Development Goals			
Significant Impact				
	SDG 13. Take action to combat climate change and its impact	**SDG 11.** Make cities and human settlements inclusive, safe, resilient and sustainable	**SDG 3.** Ensure healthy lives and promote well-being for all at all ages	**SDG 10.** Reduce inequality within and among countries
Strong Impact				
	SDG 1. End poverty in all its forms everywhere	**SDG 8.** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	**SDG 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
Moderate Impact					
	SDG 4. Ensure inclusive and quality education for all and promote lifelong learning	**SDG 5.** Achieve gender equality and empower all women and girls	**SDG 6.** Ensure access to water and sanitation for all	**SDG 7.** Affordable and clean energy	**SDG 9.** Build resilient infrastructure, promote sustainable industrialization and foster innovation
					
	SDG 12. Ensure sustainable consumption and production patterns	**SDG 14**. Conserve and sustainably use the oceans, seas and marine resources	**SDG 15.** Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	**SDG 16.** Piece, justice and strong institutions	**SDG 17.** Revitalize the global partnership for sustainable development

Source: based on authors' estimations.

2. SDGs where Insurance has a Significant Impact

Climate Action (SDG 13)

Financial and human losses from natural disasters have increased significantly in recent years. According to the 2020 SDG report[10], climate change continues to exacerbate the frequency and severity of natural disasters, which affected more than 39 million people in 2018, resulting in deaths, disrupted livelihoods and economic losses. Natural disasters affect almost every part of the world. In 2019, 409 natural disasters occurred in the world, including 158 floods and 114 severe weather events, 33 tropical cyclones and 32 earthquakes *(Aon, 2020)*[11]. In 2019 catastrophic events (including natural disasters and man-made) totaled USD 146bn of which USD 96 bn was insured per *Swiss Re Sigma (2/2020).* Some man-made disasters, such as fires, are also related to climate change. Increased drought, and a longer fire season are boosting wildfire risk.

Natural disasters can have a sizeable fiscal impact on the most vulnerable economies, often holding back economic growth and poverty alleviation *(WB, forthcoming).* The indictor *Direct economic loss attributed to disasters to GDP* appears in three goals *(Goal 1. No poverty, Goal 11. Sustainable cities, Goal 13. Climate action [12])*. A recent assessment by the IMF *(2018)* shows that these macroeconomic impacts can create a vicious cycle that lowers growth and increases debt. On the expenditure side, governments often bear a significant part of the costs of response and recovery. On the revenue side, impacts on the productivity of firms, household incomes and economic output can dent tax revenues. In the aftermath of a disaster, financial decision makers find it difficult to allocate limited resources among many priorities. If decision makers do not have access to sufficient resources to finance disaster response, they rely on outside assistance. In countries that are geographically or economically small and not diversified in economic activities, where key sectors are dependent on weather conditions, the effects of disaster shocks on national economic activity and production capacity can be significant. For example, countries reported disaster losses were up to 4 percent of GDP in Colombia, and up to 2.6 percent in Madagascar (14-year average), *Figure 5*. Economic loss after disasters can be up to 200 percent in small island states. For instance, Grenada suffered losses of 200 percent of GDP following Hurricane Ivan in 2004, Dominica faced losses 225 percent of GDP after Hurricane Maria in 2017.

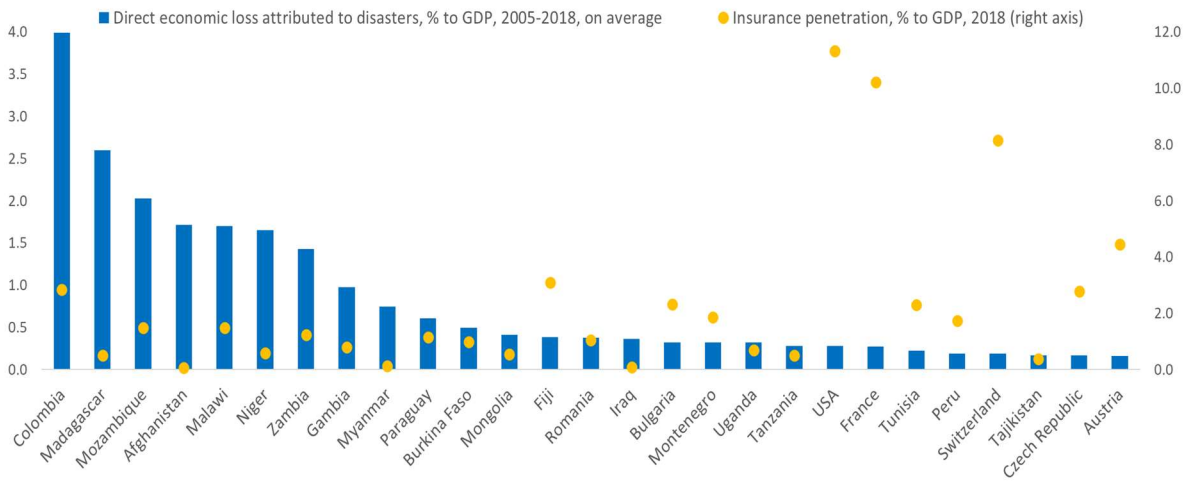
Insurance can play a role in mitigating the after-effects of natural disasters on economic growth, and even providing an economic stimulus for a few years after the event. The econometric study of Von Peter et al *(2012)* shows that small and low- to middle-income countries suffer more when uninsured but also recover faster when insured against catastrophes. Countries with developed insurance markets suffer less from disasters in terms of GDP decline *(Figure 5).* Countries with smaller insurance markets contract more. Direct economic losses of USD 23.6 billion were reported by 63 countries, of which 73 percent (USD 17.1 billion) were recorded in the agricultural sector and 16 percent (USD 3.8 billion) in the housing sector. As these countries may not have the funds or borrowing capacity to recover promptly from natural disasters, risk transfer to insurance markets can be particularly effective as insurance can provide relief to governments, companies and households in the event of natural disasters *(Brassard and Raffin, 2011)*. This may be both directly in the form of paying claims, or indirectly if the local or federal government buys insurance and can then pass on compensation to companies or individual households.

[10] https://unstats.un.org/sdgs/report/2020/goal-13/

[11] https://www.iii.org/article/spotlight-on-catastrophes-insurance-issues

[12] Direct economic loss attributed to disasters to GDP (Indicator. 1.5.2/11.5.2) indirectly belongs to SDG 13. Climate action through Indicator 13.1.2 and target C of the Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework). Sendai Framework was adopted by UN Member States in March 2015 as a global policy of disaster risk reduction. It outlines seven global targets to be achieved by 2030, five of them (Targets A-E) correspond and contribute to three SDGs (SDG 1, SDG 11, SDG 13) and strengthen economic, social, health and environmental resilience.

Figure 5: Direct Economic Loss, % to GDP, 2005-2018



Source: unstats.org; AXCO; authors' calculations.

In addition to paying claims, insurers can help promote higher standards of construction by having minimum requirements in order to be able to access insurance and /or build back better clauses. This can also encourage construction to be in less risky areas. Insurers can work also with governments or private companies on disaster risk management plans, such as evacuation procedures, which will reduce loss of life.

There are, however, some issues which can make it challenging for insurance to have impact on disaster protection. First, natural catastrophes and some other weather-related events are often excluded from property insurance policies. This means that the insured has to buy separate cover, but this may not be available or affordable. In emerging markets, natural disaster insurance coverage remains limited. According to a 2005 Munich Re study, only 1 percent of households and businesses in low-income countries, and only 3 percent in middle-income countries, have catastrophe coverage, in comparison to 30 percent in high-income countries. The industry needs to develop ways to close the protection gap in this area, by bundling with other products and / or by public private partnerships like Flood Re in the UK, or Japan Earthquake Reinsurance.

In most developing vulnerable countries, capital markets are undeveloped and the ability to use insurance risk transfer instruments, such as derivatives and catastrophe bonds, is limited. When international financial institutions and other development partners offer various forms of support to disaster-vulnerable countries, many countries have limited capacity to take full advantage of such support *(IMF, 2019).* It often takes a long time until financial aid become available, which can delay disaster recovery and reconstruction *(WB, 2019)*. Thus, in these countries, people will continue to cope with catastrophic risks by relying on family and community support systems.

Local insurance companies may partner with reinsurance companies in providing protection against a catastrophic loss where reinsurers pay part of the losses and allow the local insurers to remain solvent. The main barrier to obtaining reinsurance for low- and middle-income countries is the lack of primary-market insurance penetration and the current inability in such countries to package reinsurance programs in structures that are attractive to the global reinsurance market *(Cummins* and *Mahul, 2008)*.

In addition to their underwriting role, insurance companies can also have an impact on climate change though their role as major asset owners. Insurance companies are big investors with USD33 trillion assets under management in 2018[13]. As investors they have a lot of influence whether as buyers of government bonds or as

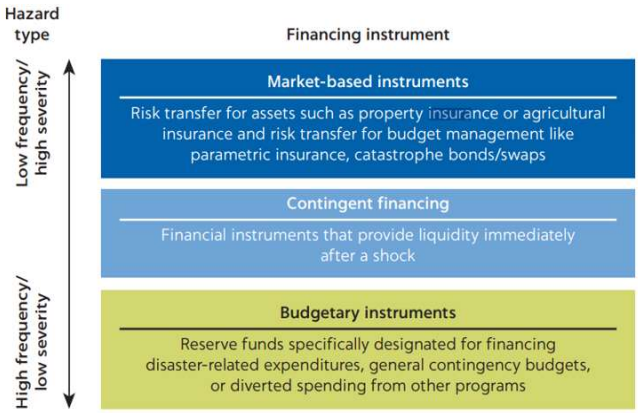
[13] Statista, Willis Towers Watson, Preqin, BCG.

investors in real estate, corporate equity or debt securities. As such, they can also channel capital to investments that are more climate resilient as well as investing in green assets.

Box 1: Role of Insurance as Part of Disaster Risk Financing Programs

Private insurance can act as a complimentary financial instrument for financing disaster risk in countries with significant direct economic losses after a disaster. Disaster risk cannot be reduced to zero, so it is essential to supplement actions in building sustainability and resilience in disaster prone countries. International experience has shown how governments combine different instruments to protect against events of different frequency and severity.

Figure 6: WB Risk Approach



Source: WB.

The World Bank's multi-layer risk approach provides an overview of how such different financial instruments may be combined *(Figure 6).* Depending on the frequency and severity of disasters, governments may choose to manage their disaster risk by: (i) self-insurance through budgetary instruments; (ii) transferring risk through insurance or other risk-sharing mechanisms; (iii) contingent financing; or (iv) reliance on assistance from the international community. When considering options for diversification, policy makers need to take into account country-specific factors and how choices complement each other. In disaster-prone countries, the governments may consider diversifying tools from using budgetary instruments to developing public-private partnerships (PPP), new lines of business (e.g. agriculture insurance), and attracting international reinsurance companies. Increased private insurance penetration can also help reduce the fiscal cost of disasters and implicit contingent liabilities. The ability to cope with a shock largely depends on the ability to prepare. Increasing coverage in disaster risk insurance schemes will require structures and pricing that more explicitly address prevention, not only paying after losses have occurred. The insurance industry should continue to expand its contributions towards building financial resilience to climate risks by collaborating with governments and other key stakeholders.

While steps are being taken in countries with high disaster economic loss, there is still substantial room for private insurance to strengthen response mechanisms to improve resilience.

Safe Cities and Communities (SDG 11)

Much of the discussion about climate is also relevant to the role insurers can play as underwriters and investors in relation to cities and communities. Insurance companies exert an indirect influence on the resilience and sustainability of cities through encouraging consumers and businesses to use climate-related mitigation strategies (fortified homes, mileage-based insurance, low-emission vehicles, green building and equipment, etc.) by incentivizing them by offering lower premiums or coverage that would otherwise be unavailable.

In addition, insurance companies have an important role to play in supporting infrastructure projects as both underwriters and investors. The capacity of large insurers and reinsurers to underwrite long tenor credit risk is an important factor in supporting infrastructure development *(IFC, 2018)*. In many cases it is easier for insurers to support these projects as underwriters than as investors. This is because illiquid assets and particularly securitized structures often carry high capital charges. Insurance companies which underwrite long tail have liabilities which they want to match in terms of duration and currency and could invest more in infrastructure, perhaps alongside DFIs, if capital requirements were less onerous for certain types of structures.

Additionally, insurers, reinsurers and brokers have considerable risk management expertise and can partner with technology companies who can apply AI to aerial photography and satellite images to help risk assessment and mitigation and Internet of things (IoT) data to make cities safer. This can be used to monitor traffic congestion or water quality. This is strongly linked to climate risks in many cases, but the role of insurance is less well developed, and it is less easy to monitor due to the lack of consistent disclosure or indicators.

Insurance so far has focused more on compensating for loss after the event. Ideally, insurance should use allocation of risk bearing capacity and differential pricing to encourage governments, businesses and households to take preventative measures to reduce the likelihood of losses. Examples include building standards to withstand high winds and raising the height of the ground floor. Insurance can contribute to loss prevention through the provision of risk information, premium discounts for hazard mitigation, or using early warning systems. This is particularly relevant because several of the SDG indicators relate to deaths, missing person and injuries after disasters. Only a preventive approach will contribute to an improvement in those indicators.

Motor accidents have significant human and economic costs, especially in developing countries. The leading cause of death among people aged 15-29, road accidents kill 1.25 million people every year and injure another 50 million—more deaths than from malaria or tuberculosis. The severity of this challenge is recognized by specific road safety targets *(SDG 3, Target 3.6.):* to halve the number of global deaths and injuries from road crashes by 2020. The insurance industry is already playing an important role in the road safety agenda. The industry insures almost 1 billion vehicles globally, helping to reduce the costs of road crashes to society and the economy and providing for medical care for injuries, which, in developing countries, are often to pedestrians. Where motor insurance can take account of driving behavior, whether by “no claims discounts” or “bonus malus” systems, or by more sophisticated technology that can track driving on a real time basis, insurance can incentivize and reward safe driving.

Good Health and Well Being (SDG 3)

The role of insurance in the area of health depends very much on the organization of healthcare provision which differs greatly by country. In some countries the government plays a much larger role, but there are still likely to be gaps which can be filled by the private sector. At the other extreme, there are countries with little to no government-funded healthcare, or it may only be available for those at the very bottom of the pyramid. Insurers can support

SDG 3 by helping to facilitate access to healthcare through the provision of health insurance. Health insurance can potentially reduce the burden on both government and private citizens, but it is often challenging to deliver in an affordable way outside of company schemes, and, in some countries, there is a shortage of doctors, hospitals, medical equipment and supplies, or quality pharmaceuticals. Nonetheless, insurance can help by providing access to services such as telemedicine and support for preventable diseases through the use of self-diagnostic devices, wearables, tests and exercises on mobiles etc. We also believe that insurance can help make access to healthcare more inclusive by focusing on the particular needs of women, self-employed, gig workers and micro-, small and medium-sized enterprises (MSMEs), who have typically not been well served by the insurance industry.

The Covid-19 pandemic has shed light on the vulnerability of health systems worldwide. It is clear, that countries with universal health coverage (UHC) defined as all people having access to healthcare without suffering financial hardship (SDG 3.8) are best equipped to respond. UHC data captures two interrelated dimensions: service coverage[14] (SDG indicator 3.8.1) and financial protection (SDG indicator 3.8.2). Even when medical services are available, people sometimes incur a heavy financial burden to use them and often must forgo using health care altogether due to high costs.

Strengthening health financing is one of targets of SDG *(Target 3.c)* and critical for reaching UHC. Insurance catalyzes healthcare delivery, by providing a payment stream to secure such services. In many countries, a high proportion of medical expenses are still met out of pocket. It is estimated that nearly 90 million people were pushed into extreme poverty (that is, below the international poverty line of USD 1.90) by out-of-pocket health payments in 2015[15]. Due to the lack of insurance, health care costs often force those affected and their families into deep poverty. Personal out-of-pocket expenses are higher in countries with low insurance penetration. Nearly 40 percent of the world's population has no health insurance or access to national health services *(ILO, 2020)*. An estimated 1 billion people will spend at least 10 percent of their household budgets on health care in 2020, the majority in lower-middle-income countries. Most of these people were in South Asia (54 million), followed by East Asia and Sub-Saharan Africa. The income loss due to COVID-19 lockdown measures will likely exacerbate the situation. In developing economies, 11 percent of adults reported having borrowed for health or medical purposes in 2017 *(Demirgüç-Kunt A., et. al 2017).*

Research also shows that health micro-insurance helps to reduce out-of-pocket health expenditure and increase the use of healthcare services *(Radermacher et al. 2012)*. Levine and Polimeni (2014) in an Indian study find a 44 percent reduction in treatment costs for serious health incidents once insured, while Gustafsson-Wright (2013) finds a 40 percent reduction in a Nigerian study. Most insurance companies are now required to cover the cost of immunizations and preventive care. The private sector could potentially improve vaccination coverage through insurance schemes (*Target 3.b*). The challenges of delivering affordable healthcare are great. Biometric ID systems, increasingly being rolled out by governments, are an important step to reducing fraud and enabling the further development of private health insurance.

Reduce Inequality (SDG 10)

While the role of insurance in reducing inequality is more difficult to track compared with some of the previously discussed SDGs - the potential is there. Insurance can help reduce inequality within countries by helping businesses and families withstand economic losses due to property damage, illness, injury or death of a wage earner. Although microinsurance has yet to reach its potential, technology advances are offering ways to underwrite, distribute and

[14] The service coverage index measures the extent to which people in different countries have access to essential health services, and considers reproductive, maternal, newborn and child health, care for infectious diseases, noncommunicable diseases, and health system capacity and access.

[15] https://unstats.un.org/sdgs/report/2020/goal-03/

handle claims more cheaply and efficiently and there is increasing focus on this within the industry. Some countries require or offer a separate license for micro insurance, with lower capital requirements. However, this is not universal, so it is not possible currently to monitor microinsurance as a separate line of business. Cross border insurance, such as migrant workers buying insurance for their families back home, as well as insurance policies directly tied to remittances also have a role to play.

3. SDGs where Insurance has a Strong Impact

No Poverty (SDG 1)

This is such a broad goal that it requires the cooperation of government, private sector and individual action across a wide range of policies and industries. The main ways in which insurance can contribute to this are in ensuring that people and families do not fall below the poverty line due to events like a flood or fire, illness or death of a bread winner in the family. WB research *(2020)* shows that up to 132 million people will be pushed into extreme poverty by climate change by 2030[16]. Moreover, the indicators of this SDG (specifically under *Target 1.5*) overlap with indicators of SDG 13. Climate action in terms of number of deaths, missing persons and directly affected persons attributed to disasters *(Indicator 1.5.1)* and SDG 11 Sustainable Cities in terms of direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters *(Indicator 1.5.2).*

Insurance can ensure business continuity of companies after a loss, preserving employment. This is discussed in more detail earlier in the section on climate. Private insurance can also reduce the likelihood of people having to rely on state benefits. As investors, insurance companies contribute to capital markets which are needed to provide businesses with the funds to grow (and thereby support overall economic development).

As employers themselves, insurance companies can contribute to SDGs. Measures include paying a fair wage and providing benefits to their staff, as well as ensuring that pay equity among employees by gender, race, religion etc. Many insurers and brokers are large companies who also support charitable causes in the local community.

Insurance targeted at women can have a particularly strong impact. The SheforShield report found that the global insurance market for women could grow from USD 800 billion of premiums in 2013, to up to USD 1.7 trillion in 2030, with approximately half coming from emerging markets *(Grown et. al, 2017).* SheforShield provided a detailed analysis of ten emerging markets: China, Brazil, India, Mexico, Indonesia, Colombia, Turkey, Thailand, Nigeria and Morocco. These markets are expected to grow 6-9 times, with China and Brazil being the largest markets, and Indonesia and Nigeria expected to see the highest levels of growth. The report expects the largest growth in life assurance, which includes pensions and savings products, which are particularly important for women due to longer life expectancy. Education savings policies have proved popular amongst women customers, particularly grandparents, with benefit of helping keep more children in school or college. Health insurance was also seen as highly important and desirable, and this will be even more so in the light of the Covid-19 pandemic. Non-life insurance, protecting homes, vehicles and small businesses was expected to grow driven by more single, salaried women and women entrepreneurs.

The development of an insurance sector serving women has other benefits. Research by suggests that women are prepared to invest up 90 percent of their income into their household's vs 30-40 percent for men on areas such as education, healthcare and improved housing. This means that their families and communities will also benefit. Increasing women's insurance coverage can also make them more of an economic driver, by increasing their spending power and supporting the development of private healthcare. The report also found significant

[16] https://blogs.worldbank.org/climatechange/covid-climate-change-and-poverty-avoiding-worst-impacts

opportunities for women to work in the insurance industry, with the multiplier effect of reaching more women customers. The insurance industry can also support women entrepreneurs by helping them manage risks, get access to finance and develop more resilient businesses.

Implementing social protection for all *(Target 1.3)* is one of the targets under this goal in which insurance can make a contribution. The value of social protection to shield individuals and families from shocks and alleviate poverty has been broadly recognized. Indicators of this target are measured by the proportion of the population covered by social protection systems, distinguishing between children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims. This target mainly regards to government insurance programs, specifically social security programs. Social protection is necessary because certain risks are difficult to insure privately (e.g. unemployment) and are financed entirely or in large part by mandatory contributions from taxpayers, employers and employees. These programs provide a base of economic security to the population, and a layer of financial protection to individuals against the long-term financial consequences of old age, occupational and nonoccupational disability, and unemployment. However, social protection coverage can range from close to 90 percent of the population in Europe to less than 15 percent in Africa *(ILO, 2017)*. Resent empirical studies have argued that partnerships between governments and insurance companies may be a useful avenue for providing additional social protection coverage *(Janzen et al., 2012)*. Disability insurance, protecting against loss of income due to disability works, is one example of such complimentary insurance to social security programs.

Insurers are also important providers of pension products which are needed to protect against poverty in old age. IAIS and IOPS *(2018)* conducted a joint study[17] which estimated that the share of total life insurance liabilities related to retirement income and pension products exceeds 50 percent globally (higher in some OECD markets such as Australia, UK, USA and Spain). Private insurance can also complement social security to support elderly populations via health care, housing and long-term care. Given demographic challenges, and deficits in many public pension funds, the insurance industry may have a growing role to play in supporting the goal of prevent poverty in old age.

Decent Work and Economic Growth (SDG 8)

The insurance industry can improve economic growth, not only in increasing a country's GDP, but also by improving financial stability and capability. As previously discussed, insurance can make the economy and enterprises more resilient. Insurers can directly create employment but there is an even bigger effect by ensuring that businesses can grow, offer credit insurance and facilitate imports and exports. The credit insurance market is estimated at around USD 6.0 billion premium by the International Credit Insurance and Surety Association[18]. Insurers can also have an effect on their "supply chain" by insisting that their corporate clients meet certain standards in terms of safety, not employing children etc.

Insurers have an important role to play in capital markets due to the large amount of assets they can invest from their balance sheets with USD 33 trillion assets under management. Insurers mobilize long-term savings across the economy and help to provide liquidity through various techniques and tools. This can help develop broader and deeper capital markets. Insurers themselves have strict capital and liquidity requirements. As premiums are received in advance of claims, insurers have proved to be more stable than banks in times of crisis and can provide long term investment capital.

Insurers have potential to help fill the infrastructure financing gap. They can do this both by proving long term credit insurance, and as investors as discussed earlier in Goal 11 Safe Cities. According to estimations by the Global

[17] Based on the survey of 45 jurisdictions accounting for 80 percent of global life insurance premium.
[18] https://www.aon.com/credit-solutions/credit-insurance/insurance-markets.jsp

Infrastructure Hub (GIH), there will be a need to invest USD 13 trillion globally in infrastructure projects between 2020 and 2040, which translates into average USD 630 billion per annum. If insurance companies would allocate only 5 percent of their gross written premiums to infrastructure investments, it could cover half of the annual investment gap (WB, forthcoming). However, in some cases, high capital requirements make it difficult for insurers to invest more in infrastructure, real estate and other illiquid asset classes.

Zero Hunger and Food Security (SDG2)

Insurance has an important role here, which has arguably not yet reached its full potential. As an underwriter insurance can support agriculture, especially with products that cover weather events or crop failure. The support of the agricultural sector to ensure food security is a key element in eradicating hunger. An estimated 25.9 percent of the global population – 2 billion people – were affected by moderate or severe food insecurity in 2019 (an increase from 22.4 percent in 2014). Crop risk poses a very serious threat for low-income farming households. About 78 percent of the world's poor people, close to 800 million people[19], live in rural areas and rely largely on farming, livestock, aquaculture and other agricultural work to make a living. Insurance policies provide coverage for loss of production or yield loss due to a change in market price during the insurance period.

Agricultural insurance can complement government contingency funding by transferring some risk to the private sector, reducing its financial burden in the event of disaster, and contributing to macroeconomic stability in the face of weather shocks. The insurance sector can also support food safety with product liability policies that protect consumers and ensure high standard and timely product recall. In particular, new technologies are helping the development of index products which can support smallholder farmers. Insurance can increase access to credit for farmers by making their income more stable.

II. Insurance and SDGs: Country Targets

Previous World Bank studies have focused on enabling conditions countries which need to put in place before insurance markets can develop. The analysis in the previous section has shown how insurance markets can contribute to the fulfillment of SDGs. However, before insurance markets can really begin to develop, certain underlying, supporting conditions need to be in place. Numerous World Bank projects related to the development of the insurance market, along with a substantial body of literature show that an enabling environment is essential for insurance sector development. In a study based on 20 years of insurance premium data from 180 countries, the Word Bank identified such as institutional quality and financial market development as strong predictors of insurance market development (*Giné, Ribeiro, and Wrede 2019).* A study of World Bank insurance market related projects also showed that those adopting a comprehensive approach (including mobilization of long-term finance, strengthening capital markets, building the legal foundation and capacity for regulators and supervisors, and creating safe and efficient financial infrastructure) had the most impact *(Wrede et al., 2020).*

Filters for these enabling conditions need to be applied to identify in which countries insurance market development could have the most impact on achieving the SDGs. In an attempt to compare the countries that are lagging both in fulfilling the key SDGs where insurance can add most value, as well as countries where insurance

[19] https://www.worldbank.org/en/news/feature/2014/11/12/for-up-to-800-million-rural-poor-a-strong-world-bank-commitment-to-agriculture

markets are underdeveloped, and therefore have room to grow, it is necessary to apply a number of filters to identify whether the enabling conditions are in place. The analysis in this section takes the following approach:

- ***Stage I: countries where significant progress is still needed to meet the selected SDGs were identified*** *(see Table 2, columns (1 and 2-7)).* Based on the above assessment of the SDGs where insurance market development can have a strong or medium impact, countries' progress in the overall SDG index and broken down by indicator was assessed. First, countries where the overall SDG index[20] was below 70 were identified (a score of 100 indicates that all SDGs have been achieved), and these countries were then screened for those which also performed poorly on the selected SDGs where the insurance sector was estimated to have a significant and strong impact[21] (as shown in *Table 2* where "major challenges remain" is shown is red, "significant challenges" in orange, and yellow signifying "challenges remain").

- ***Stage II: countries which still have the potential for the insurance sector to grow were identified.*** Insurance penetration by country *(column 10)* was compared to the average level in peer countries with the same income category *(column 11)*, according to the WB classification[22] *(Column 8 – upper middle income (UMC) lower middle income (LMC)).* Countries with an insurance penetration rate below their peers was taken as an indication that there is sufficient room for the insurance market to grow further.

- ***Stage III: filters acting as proxies for the enabling conditions for insurance market growth were applied (i.e. financial market development and governance indicators).***

Financial market development *(Columns 12-13)* is recognized in previous World Bank studies as a key enabler for insurance market development. The *Financial Development Index by country (Column 12)* comprises nine indices[23] that summarize how developed financial institutions and financial markets are in terms of their depth, access, and efficiency *(Svirydzenka, 2016)*. The indicator is normalized between 0 and 1, where higher values indicate greater financial development. The results for each country were compared to the average indicator for countries within the same income level, with those at or above average being taken as having sufficient financial market development to support insurance market expansion.

Governance indicators[24] *(Columns 14-17).* Good governance is a further precondition for insurance markets to be able to grow (given insurance products are effectively long-term contracts and consumers must have confidence that these will be fulfilled). *Government effectiveness (Columns 14-15)* captures perceptions of the quality of public and civil services, and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. *Regulatory quality (Columns 16-17)* reflects perceptions of the ability of the government to formulate and implement sound

[20] Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., Woelm, F. 2020. The Sustainable Development Goals and COVID-19. Sustainable Development Report 2020. Cambridge: Cambridge University Press.

[21] It worth noting, that SDG 13 was excluded from this analysis, because the SDG index beyond UN indicators assessed transitional indicators (for example energy-related CO_2 emissions, CO_2 emissions embodied in imports and fossil fuel exports, effective carbon rate), while we assessed the original UN number of indicators under this goal.

[22] For 2021, low-income economies are defined as those with a GNI per capita of US $1,035 or less in 2019; lower middle-income economies are those with a GNI per capita between US $1,036 and US $4,045; upper middle-income economies are those with a GNI per capita between US $4,046 and US $12,535; high-income economies are those with a GNI per capita of US $12,536 or more.

[23] Financial Development Index includes (a) Financial Institutions Index is an aggregate of (i) Financial Institutions Depth Index compiles data on bank credit to the private sector, pension fund assets, mutual fund assets and insurance premiums (non-life and life) to GDP; (ii) Financial Institutions Access Index compiles data on bank branches and ATMs per 100,000 adults; (iii) Financial Institutions Efficiency Index compiles data on banking sector net interest margin, lending-deposit spread, non-interest income to total income, overhead costs to total assets, return on assets, and return on equity; and (b) Financial Market Index is an aggregate of (i) Financial Market Depth index compiles data on stock market capitalization to GDP, stocks traded to GDP, international debt securities of government to GDP, and total debt securities of financial and nonfinancial corporations to GDP; (ii) Financial Markets Access index compiles data on percent of market capitalization outside of top 10 largest companies and total number of issuers of debt per 100,000 adults; (iii) Financial Markets Efficiency index compiles data on stock market turnover ratio (stocks traded to capitalization).

[24] The Worldwide Governance Indicators (WGI) are a research dataset summarizing the views on the quality of governance provided by a large number of enterprises, citizen and expert survey respondents in industrial and developing countries.
http://info.worldbank.org/governance/wgi/

policies and regulations that permit and promote private sector development. These indicators are measured in the range from "minus" 2.5 to 2.5, where higher values correspond to better governance. Again, the average level by income group *(Columns 15, 17)* was taken as the thresholds for comparison.

Table 2: Number of Countries Lagging in SDGs, and Enabling Conditions for Insurance Sector Development

Country	I stage							II stage				III stage					
	2020 SDG Index Score	SDG index						Insurance Potential				Enabling conditions for insurance sector development					
		SDG 11	SDG 3	SDG 10	SDG 1	SDG 8	SDG 2	Country Code [25]	GDP per capita, 2019, $ US	Insurance Penetration, %, 2019		Financial Development Index (0-1), 2018		Government Effectiveness (-2.5 to 2.5), 2019		Regulatory Quality (-2.5 to 2.5), 2019	
										by country	vs average*	by country	vs average*	by country	vs average*	by country	vs average*
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*
Nigeria	49.3	red	red	red	red	red	red	LMC	2230	0.33	<1.36	0.25	>0.21	-1.09	<-0.64	-0.86	<-0.67
Eswatini	53.4	yellow	red	red	red	red	red	LMC	3895	2.08	>1.36	n/a	n/a	-0.68	<-0.64	-0.61	>-0.67
Pakistan	56.2	red	red	red	yellow	orange	red	LMC	128/5	0.79	<1.36	0.24	>0.21	-0.68	<-0.64	-0.64	>-0.67
Kenya	60.2	red	red	red	red	orange	red	LMC	1817	2.44	>1.36	0.19	<0.21	-0.38	>-0.64	-0.28	>-0.67
Botswana	61.5	orange	red	red	red	orange	red	UMC	7961	2.87	>2.37	0.26	<0.34	0.43	>-0.05	0.37	>-0.10
Bangladesh	63.5	red	red	orange	orange	yellow	red	LMC	1856	0.5	<1.36	0.23	>0.21	-0.74	<-0.64	-0.93	<-0.67
Indonesia	65.3	orange	red	red	orange	orange	red	UMC	4136	1.68	<2.37	0.37	>0.34	0.18	>-0.05	-0.09	>-0.10
Ghana	65.4	red	red	red	orange	orange	red	LMC	2202	0.83	<1.36	0.15	<0.21	-0.21	>-0.64	-0.11	>-0.67
Philippines	65.5	orange	red	red	orange	orange	red	LMC	3485	1.74	>1.36	0.37	>0.21	0.05	>-0.64	0.01	>-0.67
Sri Lanka	66.9	orange	orange	red	yellow	yellow	red	LMC	3853	1.27	<1.36	0.28	>0.24	-1.66	<-0.64	-0.18	>-0.67
Jordan	68.1	orange	red	red	yellow	red	orange	UMC	4406	1.97	<2.37	0.39	>0.34	0.1	>-0.05	0.03	>-0.10
Egypt	68.8	orange	red	red	yellow	red	red	LMC	3019	0.75	<1.36	0.31	>0.21	-0.42	>-0.64	-0.83	<-0.67
Fiji	70.0	yellow	red	red	yellow	yellow	red	UMC	6176	2.68	>2.37	0.22	<0.34	0.2	>-0.05	-0.22	<-0.10

Note. *on average in countries with the same income level based on the WB classification;
LMC - Lower middle income (US $1,036-4,045 GNI per capita); UMC - Upper middle income (US $ 4,046 - 12,535 GNI per capita).
Source: developed by authors based on SDG Index and Dashboard[26], AXCO, Financial Development Index[27], Governance Indicators[28].

Development institutions, donors and global industry associations may benefit from focusing their attention most on a set of countries such as these to ensure maximum impact to SDG achievement. The countries identified are those where conditions are in place - or close enough - for insurance markets to grow and consequently contribute most to the achievement of the SDGs. More granular analysis by country would of course need to be applied (e.g. analyzing such set of factors as economic development, population and demographic factors, economic cycle, countries' specialization, regulatory and supervisory framework for insurance market development, insurance products and services, concentration and competition in industry) – but the exercise is designed to provoke thought amongst policy makers as to where attention could be focused if insurance is to be used more effectively as a tool to contribute to SDG achievement.

[25] https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups
[26] https://www.sdgindex.org/
[27] https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b
[28] http://info.worldbank.org/governance/wgi/

III. Conclusion and Recommendations

One of the biggest challenges in assessing the contribution insurance makes to achieving the SDGs is the wide gap between the data as articulated in sustainable goals and how insurance sector data is tracked at national level. It is therefore difficult to assess the true insurance contribution in SDG and the greater role which the sector could play in their fulfillment. Additionally, data may not be comparable between countries, for example on natural disasters. Another issue is that whilst some individual companies, particularly the large international ones, provide a lot of disclosure, these are not available for the industry as a whole. Various organizations could play a role in closing these data gaps.

To overcome this gap, joint effort is required from many stakeholders at multiple levels. At the local level, the data gaps and time lags in official statistics require investment in statistical capacity. At the international level, the International Association of Insurance Supervisors (IAIS) - in collaboration with other organizations and networks (e.g. OECD, Sustainable Insurance Forum, Insurance Development Forum) - could play a role in data collection and publication. In its Strategic Plan 2020-2024, the IAIS set a strategy to develop the different quantitative and qualitative information bases to inform the identification and assessment of trends and developments relevant to the insurance sector.[29] IAIS, bringing together insurance supervisors and regulators from more than 200 jurisdictions (representing 97 percent of the global insurance premiums), could consider developing a platform for collecting and disseminating globally insurance sector data statistics. As the international standard-setting body, IAIS could also assist with the implementation statistical standards and classification.

The following types of data would be particularly useful to cover:

- ***Line of business data.*** As discussed in this note, different types of insurance contribute to achieving the SDGs. For example, crop insurance will help in achieving target 2.1 *(end hunger and ensure access by all people to food)*, motor insurance target 3.6 *(halve the number of global deaths and injuries from road traffic accidents),* flood or catastrophe insurance with target 1.5 *(build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters).* Detailed global data for all major classes will assist in targeting and focusing on specific SDG targets, and allow cross-country and regional comparison. In terms of classification, insurance business categorizes broadly into two major classes - life and non-life. The leading suppliers of global insurance market information (for example, AXCO[30]) provide insurance statistics in three broad groups - life, non-life (P&C) and Personal Accident & Healthcare (PA) worldwide. Non-life data are usually presented in aggregate form. However, the non-life category is broad and includes different types of insurance, such as property, liability, motor, marine, aviation and transit, travel. Sometimes this detailed information is available in country profile dashboards, reports, or national data sources. However, global comparisons can be inconsistent due to different classification, format, definitions across countries. In addition, financial sector authorities in many countries do not disclose all available data to the public, especially when the data related to financial sector soundness and stability.
- ***Asset allocation data.*** There is no global data on insurers' asset allocation available as yet. As an alternative to global insurance statistics, OECD Insurance Statistics for OECD countries and a number of non-OECD and EIOPA Insurance Statistics (for European countries) are available. Given the role and scale of insurance

[29] The IAIS anticipates shifting toward increased monitoring of new vulnerabilities and trends that are either emerging or accelerating and that could pose a threat to, or opportunity for, policyholder protection and financial stability. These include emerging policy issues such as fintech, cyber risk, climate risk, and the challenges related to sustainable development, each with the potential to reshape the insurance business in the coming years *(IAIS, 2020)*.

[30] AXCO provides historical market statistics and insurance penetration for single selected country and across countries. The company ranking by country company statistics ranked by gross written premium income for the year selected. Insurance classes data are presented as a property, construction & engineering, motor, workers' compensation and employers' liability general third-party liability, marine, aviation & transit, personal accident, healthcare, individual life, group life, other life and others.

sector as an investor, data on global asset allocation is extremely important. The data would help to better understand the asset allocation of insurance companies and reflect changes in investment strategies, considering their potential for "impact investing" and supporting the SDGs as an investor. This would also allow an assessment the direct exposure of insurance companies to certain assets such as housing or renewable energy.

- ***Gender disaggregated data.*** *As discussed,* insurance can play a role in supporting women and girls, but generally there is no data available for the sector broken down by gender. Sex-disaggregated data can contribute to a better understanding of gender considerations in insurance access and usage. This information can be used by supervisors to better target policy and regulatory measures, stimulating inclusive insurance development and uptake. Globally, this data can be used to support broader research and peer learning between insurance supervisors and other relevant stakeholders on the regulatory barriers that hinder women's access to insurance *(A2ii, 2017).* The SheforSheild report recommends gathering sex disaggregated data, not only on premiums and number of customers, but also on acquisition costs, retention, claims, customer satisfaction and other factors that can further support the development of the market. It also suggests gathering data and conducting more analysis of women's risk profiles, using information such as income levels, family structure, life cycle events such as marriage or having children, and geography as the need of rural and urban women are very different. Insurance supervisors could:
    - encourage insurance companies and insurance intermediaries to collect sex-disaggregated data for personal lines classes;
    - include gender considerations on access and uptake of insurance in the national financial inclusion strategy;
    - develop financial literacy programmes incorporating insurance trainings that consider women's specific needs and behaviors;
    - promote gender diversity in the insurance industry.

Whereas insurance is only explicitly mentioned in SDG 8. Decent Work and Economic Growth, the analysis for this paper suggests that insurance has an important role to play in helping countries to meet several other SDGs - particularly SDG 13, 11, 3, 10, 1, 8 and 2. Insurance companies can contribute as underwriters of risk, investors and asset managers and as corporate citizens and employers. Insurance has the potential to play a more significant role in countries where the economy and financial markets are sufficiently developed, but it is challenging to assess this due to lack of data.

Governments, regulators and the insurance industry itself give more consideration to the impact of insurance on the SDGs when formulating policy and strategy. A first step would be collection of data on a global basis that can directly show the contribution of insurance to the SDGs. To establish a starting point, and set a base for monitoring future progress, it is recommended that the industry collects consistent global data on insurance by line of business, a split of insurers' invested assets and gender disaggregated data.

Fostering a dialogue between the supervisor and insurers about their role in achieving the SDGs can also have an impact. Insurance regulators can engage through global platforms of insurance supervisors and regulators to strengthen the understanding of sustainability issues amongst the entities which they oversee and the challenges facing the insurance sector, particularly in developing countries, from incorporating these issues and goals into their operations. Regulators should mainstream ESG and SDG issues into the regulatory frameworks, introducing guidance for insurers in developing risk policies targeting ESG and SDG goals, and integrating these factors into reporting.

References

Allianz. 2019. Review of our contribution to the SDGs. https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/responsibility/documents/Allianz_UNSDG-report.pdf

Access to Insurance Initiative. 2017. The Role of Insurance Regulation and Supervision in Promoting Inclusive Insurance for Women.

Brassard C., Raffin A. 2011. Resilience in Post Disaster Societies: From Crisis to Development, Asian Journal of Social Science. Vol. 39, No. 4, Special Focus: Special issue on Post Disaster Societies , pp. 417-424

Cambridge Institute for Sustainability Leadership (CISL). 2019. Mutual microinsurance and the Sustainable Development Goals: An impact assessment following Typhoon Haiyan. Cambridge, UK: Cambridge Institute for Sustainability Leadership. https://www.cisl.cam.ac.uk/resources/sustainable-finance-publications/mutual-microinsurance-inclusive-development

Grown, C., Porter-Peschka, M., Louat, N., Kolb, H., Olivier, G. Wattez-Richard, G. 2017. She for shield: insure women to better protect all (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/228381492593824450/She-for-shield-insure-women-to-better-protect-all

Cummins D., Mahul O. 2008. Catastrophe risk financing in developing countries: principles for public intervention (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/377421468136797977/Catastrophe-risk-financing-in-developing-countries-principles-for-public-intervention

Enz, R. 2000. The S-Curve Relation Between Per-Capita Income and Insurance Penetration. Geneva Papers on Risk and Insurance 01.07.2000/ No.3/ Vol.25/Page 396-406

Fitzpatrick A., Thornton R. 2017. The Effects of Health Insurance within Families: Experimental Evidence from Nicaragua (June 26, 2017). World Bank Policy Research Working Paper No. 8115, SSRN: https://ssrn.com/abstract=3006149

IAIS, IOPS. 2018. Retirement income and pension business in insurers in 2016. October 2018.

IAIS. 2020. Strategic Plan 2020-2024. https://www.iaisweb.org/page/about-the-iais/strategic-plan//file/82533/2020-2024-strategic-plan

ILO. 2017. World Social Protection Report 2017-2019: Universal Social Protection to Achieve the Sustainable Development Goals. Geneva: International Labour Office.

IFC. 2018. Crowding-in capital: how insurance companies can expand access to finance. EM Compass. Note 52, April 2018.

IMF. 2019. Building Resilience in Developing Countries Vulnerable to Large Natural Disasters https://www.imf.org/en/Publications/Policy-Papers/Issues/2019/06/24/Building-Resilience-in-Developing-Countries-Vulnerable-to-Large-Natural-Disasters-47020

IMF 2018. Building Resilience in Countries Vulnerable to Natural Disasters. Presentation to IMF Executive Board, November 12.

Gine, X., Ribeiro, B., Wrede, P. 2019. Beyond the S-curve: Insurance Penetration, Institutional Quality and Financial Market Development. Policy Research Working Paper; No. 8925. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/31997 License: CC BY 3.0 IGO.

GIZ. 2017. Inclusive insurance and the sustainable development goals. How insurance contributes to 2030 Agenda for Sustainable Development https://microinsurancenetwork.org/sites/default/files/Inclusive%20Insurance%20and%20the%20Sustainable%20Development%20Goals%20.pdf

Jafino, B., Walsh, B., Rozenberg, J., Hallegatte, S. 2020. Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030. Policy Research Working Paper;No. 9417. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/34555 License: CC BY 3.0 IGO.

Janzen, S., Carter, M., Ikegami, M. 2012. Valuing asset insurance in the presence of poverty trap. Working paper, University of California.

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., Woelm, F. 2020. The Sustainable Development Goals and COVID-19. Sustainable Development Report 2020. Cambridge: Cambridge University Press. https://s3.amazonaws.com/sustainabledevelopment.report/2020/2020_sustainable_development_report.pdf

Svirydzenka K. 2016. Introducing a New Broad-based Index of Financial Development, IMF Working Papers 2016/005, International Monetary Fund. https://www.imf.org/external/pubs/ft/wp/2016/wp1605.pdf

Swiss Re Sigma. 2020. Natural catastrophes in times of economic accumulation and climate change. 2/2020 https://www.swissre.com/dam/jcr:85598d6e-b5b5-4d4b-971e-5fc9eee143fb/sigma-2-2020-en.pdf

Thornton R., Hatt L., Field E., Islam M, Diaz F., González M. 2019. Social security health insurance for the informal sector in Nicaragua: a randomized evaluation. Health Econ. 2010 Sep;19

Von Peter et al (2012) Unmitigated disasters? New evidence on the macroeconomic cost of natural catastrophes. BIS Working Papers No 394 https://www.bis.org/publ/work394.pdf

Wrede, Rawlins, Shindo, Stewart .2020. Can Interventions Spur Development of the Insurance Sector? From Examples of World Bank Projects (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/900271577688062759/Can-Interventions-Spur-Development-of-the-Insurance-Sector-From-Examples-of-World-Bank-Projects

World Bank Group. 2019. Boosting Financial Resilience to Disaster Shocks: Good Practices and New Frontiers. World Bank Technical Contribution to the 2019 G20 Finance Ministers' and Central Bank Governors' Meeting. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/31887 License: CC BY 3.0 IGO.

World Bank Group. 2019. Boosting Financial Resilience to Disaster Shocks: Good Practices and New Frontiers. World Bank Technical Contribution to the 2019 G20 Finance Ministers' and Central Bank Governors' Meeting.

World Bank. (forthcoming). Financial Protection of Critical Infrastructure Services.

World Bank. (forthcoming). Insurance Companies and Infrastructure Investments.

Annex

Table 1: Stage I: Number of Countries Lagging in SDGs Index

Country	I stage						
	2020 SDG Index Score	SDG index					
		SDG 11	SDG 3	SDG 10	SDG 1	SDG 8	SDG 2
	1	*2*	*3*	*4*	*5*	*6*	*7*
Nigeria	49.3	red	red	red	red	red	red
Eswatini	53.4	yellow	red	red	red	red	red
Pakistan	56.2	red	red	red	yellow	orange	red
Kenya	60.2	red	red	red	red	orange	red
Botswana	61.5	orange	red	red	red	orange	red
Bangladesh	63.5	red	red	orange	orange	yellow	red
Indonesia	65.3	orange	red	red	orange	orange	red
Ghana	65.4	red	red	red	orange	orange	red
Philippines	65.5	orange	red	red	orange	orange	red
Sri Lanka	66.9	orange	orange	red	yellow	yellow	red
Jordan	68.1	orange	red	red	yellow	red	orange
Egypt	68.8	orange	red	red	yellow	red	red
Fiji	70.0	yellow	red	red	yellow	yellow	red

Source: developed by authors based on SDG Index and Dashboard[31], AXCO, Financial Development Index[32], Governance Indicators[33].

Table 2: Stage II: Insurance Potential

Country	II stage			
	Insurance Potential			
	Country Code[34]	GDP per capita, 2019, $ US	Insurance Penetration, %, 2019	
			by country	vs average*
	8	*9*	*10*	*11*
Nigeria	LMC	2230	0.33	<1.36
Eswatini	LMC	3895	2.08	>1.36
Pakistan	LMC	1285	0.79	<1.36
Kenya	LMC	1817	2.44	>1.36
Botswana	UMC	7961	2.87	> 2.37
Bangladesh	LMC	1856	0.5	<1.36
Indonesia	UMC	4136	1.68	<2.37

[31] https://www.sdgindex.org/
[32] https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b
[33] http://info.worldbank.org/governance/wgi/
[34] https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Country	II stage			
	Insurance Potential			
	Country Code[34]	GDP per capita, 2019, $ US	Insurance Penetration, %, 2019	
			by country	vs average*
	8	*9*	*10*	*11*
Ghana	LMC	2202	0.83	<1.36
Philippines	LMC	3485	1.74	>1.36
Sri Lanka	LMC	3853	1.27	<1.36
Jordan	UMC	4406	1.97	<2.37
Egypt	LMC	3019	0.75	<1.36
Fiji	UMC	6176	2.68	>2.37

Note. *on average in countries with the same income level based on the WB classification;
LMC - Lower middle income (US $1,036-4,045 GNI per capita); UMC - Upper middle income (US $ 4,046 - 12,535 GNI per capita).
Source: developed by authors based on SDG Index and Dashboard[35], AXCO, Financial Development Index[36], Governance Indicators[37].

Table 3: Stage III: Enabling Conditions for Insurance Sector Development

Country	III stage						
	2020 SDG Index Score	Enabling conditions for insurance sector development					
		Financial Development Index (0-1), 2018		Government Effectiveness (-2.5 to 2.5), 2019		Regulatory Quality (-2.5 to 2.5), 2019	
		by country	vs average*	by country	vs average*	by country	vs average*
	1	*12*	*13*	*14*	*15*	*16*	*17*
Nigeria	49.3	0.25	>0.21	-1.09	<-0.64	-0.86	<-0.67
Eswatini	53.4	n/a	n/a	-0.68	<-0.64	-0.61	>-0.67
Pakistan	56.2	0.24	>0.21	-0.68	<-0.64	-0.64	>-0.67
Kenya	60.2	0.19	<0.21	-0.38	>-0.64	-0.28	>-0.67
Botswana	61.5	0.26	<0.34	0.43	>-0.05	0.37	>-0.10
Bangladesh	63.5	0.23	>0.21	-0.74	<-0.64	-0.93	<-0.67
Indonesia	65.3	0.37	>0.34	0.18	>-0.05	-0.09	>-0.10
Ghana	65.4	0.15	<0.21	-0.21	>-0.64	-0.11	>-0.67
Philippines	65.5	0.37	>0.21	0.05	>-0.64	0.01	>-0.67
Sri Lanka	66.9	0.28	>0.24	-1.66	<-0.64	-0.18	>-0.67
Jordan	68.1	0.39	>0.34	0.1	>-0.05	0.03	>-0.10
Egypt	68.8	0.31	>0.21	-0.42	>-0.64	-0.83	<-0.67
Fiji	70.0	0.22	<0.34	0.2	>-0.05	-0.22	<-0.10

Note. *on average in countries with the same income level based on the WB classification;
Source: developed by authors based on SDG Index and Dashboard[38], AXCO, Financial Development Index[39], Governance Indicators[40].

[35] https://www.sdgindex.org/
[36] https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b
[37] http://info.worldbank.org/governance/wgi/
[38] https://www.sdgindex.org/
[39] https://data.imf.org/?sk=f8032e80-b36c-43b1-ac26-493c5b1cd33b
[40] http://info.worldbank.org/governance/wgi/