

Innovative Financial Instruments Emerging from Climate Change

Climate change has been a topic for debate for decades, and the worsening crisis poses significant challenges to how economies and organisations operate within society. To address this concern, it is critical to assess, continuously revolutionise and implement strategies to encourage businesses around the world to embrace the concept of 'green' transformation. Green financial instruments have arisen as a tool to facilitate this transition, supporting proper allocation and channeling of capital funds to sustainable investment opportunities and inspiring renovation of the modern financial system to undertake a more climate-friendly trail.

Green Bonds are one of the main innovative instruments that are being used in wider practice. They have similar characteristics to those of a conventional bond such as being fundamentally supported by the issuing company's balance sheet, but these are exclusively used for green projects with heightened regulatory compliance requirement for the bond issuer. They help by funneling the funds from private sector to fund more eco-friendly projects while being able to provide similar level of return to conventional bonds. Other things remaining the same, they might also command a price premium over conventional bonds with the financiers who are interested in more responsible investing, which is also beneficial to issuer as it reduces the weighted average cost of capital to the company.

Similarly, Green Sukuk is another innovative green financial instrument currently gaining traction. Sukuk are *Shari'ah-compliant* instruments that adhere strictly to Islamic principles, distinguishing them from conventional bonds as investments are restricted to activities deemed *halal (lawful)* under Islamic law, such as prohibiting investments in industries deemed sinful by Islamic law,

thereby fundamentally promoting ethical investing. These bonds normally operate as an asset backed security, where they invest in projects or assets, and provide a share of profits generated from those operations as return to investors. Green sukuk, which build on sukuk, operate with the same principles as traditional Sukuk bonds, but they go a step further by excluding investments in fossil fuel-based projects and nuclear projects, thus preventing further strain on the climate crisis. Although this is a relatively new instrument in the financial arena, the market for this has rapidly grown throughout the global economy, most exponentially in Asia (Appendix 1).

While these instruments are at the disposal of organisations with standing, it is also very important not to exclude the small and micro-enterprises (SMEs) as they make up more than 90% of global businesses (World Bank, 2015), they also influence the climate change like other businesses, maybe even at a higher rate. Green microfinance is an alternative green investing instrument available to SMEs. As microfinance incurs higher interest costs than traditional loans, SMEs often ignore the environmental impacts of their operations as they prioritise profit over the environment. Green microfinance addresses this issue of bias by providing loans for green projects at a highly subsidised rate to SMEs, often with the help of independent bodies like the ADB and the U.N.¹, thereby promoting sustainable development and addressing climate change. Green microfinance thus encourages SMEs to invest in renewable energy sources and green activities to minimise the output of greenhouse gases through their operations, which helps to reduce their carbon impact while also improving their financial performance in the long run.

¹ Asian Development Bank and the United Nations

Green instruments being an emerging instrument, primarily suffers from the issue of asymmetric information as investors do not have enough clarity on how the issuers of these instruments will use the proceeds of the investments. This also paves the way for major issue of greenwashing. Greenwashing is a term used to define misleading information presented by an organisation trying to showcase its environmental responsibility in a positive light to strengthen its public image (Kotler and Keller, 2012). As consumers and investors alike grow aware of the environmental impact of an organisation, organisations are pressured into appearing more eco-aware than they are, which will lead to manipulation of their annual reports, CSR objectives, and misleading advertisements. These activities erode consumer and investor trust in the company, as faced by Volkswagen in 2015 when the news of their emission scandal broke out (Appendix 2). A foremost concern of greenwashing is that while it misleads consumers without a doubt, it also causes the companies that are true to their environmental goals to lose their competitive edge (Dimitrieska, Stankovska and Efremova, 2017), and appear as just another eccentric company in the eyes of their stakeholders, thereby losing right investors to their cause thereby creating an issue of adverse selection.

Green investing being a new concept in modern economics is yet to fully materialise and stage an explicit result on the benefits it imparts. However, studies have been performed to evaluate the impact of green instruments in investing, and common findings indicate that a green approach to investing positively impacts the environment. Li *et al.* (2022), in their study, found that green investment to generate renewable energy in MINT² countries alleviates environmental pressures

² MINT Countries include Mexico, Indonesia, Nigeria, and Turkey

caused by rapid technological innovations and non-renewable energy to a great extent. They also found that environmental emissions followed a U-shaped Kuznets curve, suggesting that during later stages of economic development, emissions went down, and green investment had a direct impact on it. Chien (2023) in his study of the impact of investing in green undertakings in China concluded that it has a direct and significant bearing on the welfare of a country's citizens, promotes eco-friendly innovations, and leads to sustainable development. Gupta and Jham (2021) concluded from their research in India that although green portfolios were found to underperform other general market portfolios due to the limited scope of diversification, they outperformed non-green portfolios during and after the 2008 financial crisis, suggesting green investing as a potential way to protect portfolios from downside risk in the market. They also concluded that Indian investors had a growing appetite for green portfolios and were not divesting from the companies just because they were taking green initiatives – possibly due to the Indian government's push for a sustainable economy.

Encouraging the development of innovative green instruments and their use should be on the global agenda. Policymakers can influence this by coming up with supportive regulations and schemes to incentivise green investment for a sustainable economy and tighter regulations to fight greenwashing. These could be done with grants, tax benefits and other subsidies using tools such as fiscal and monetary policy. As for the investors, it is recommended that they include green instruments in their portfolios as they might minimise downside risk and offer the potential for higher financial returns and a positive environmental footprint as established by previous studies.

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APPENDIX 1

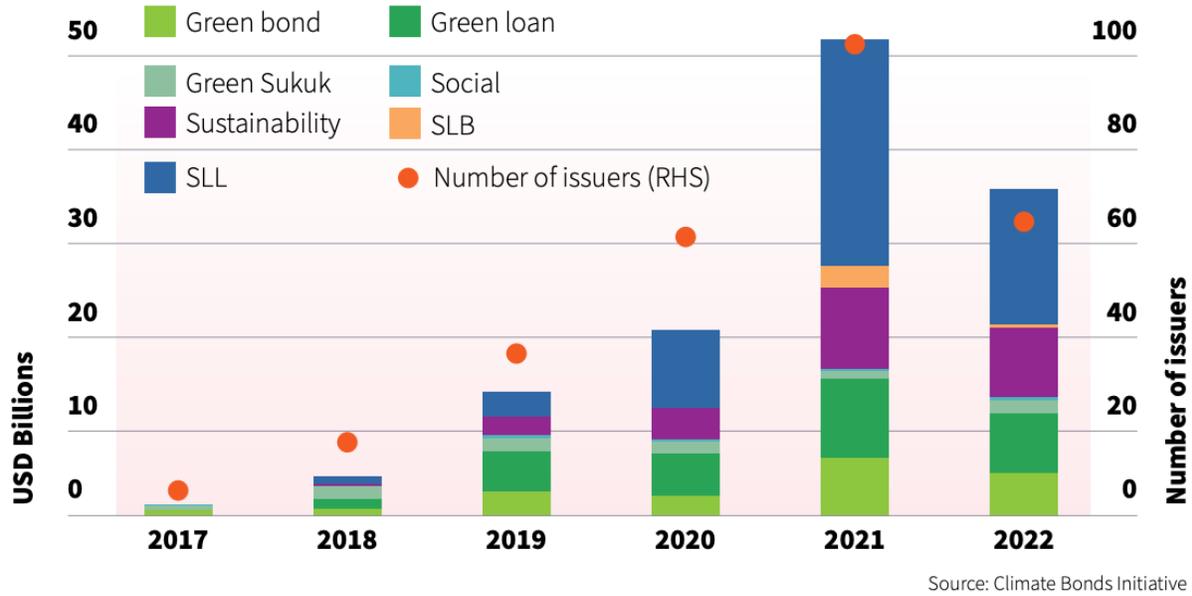
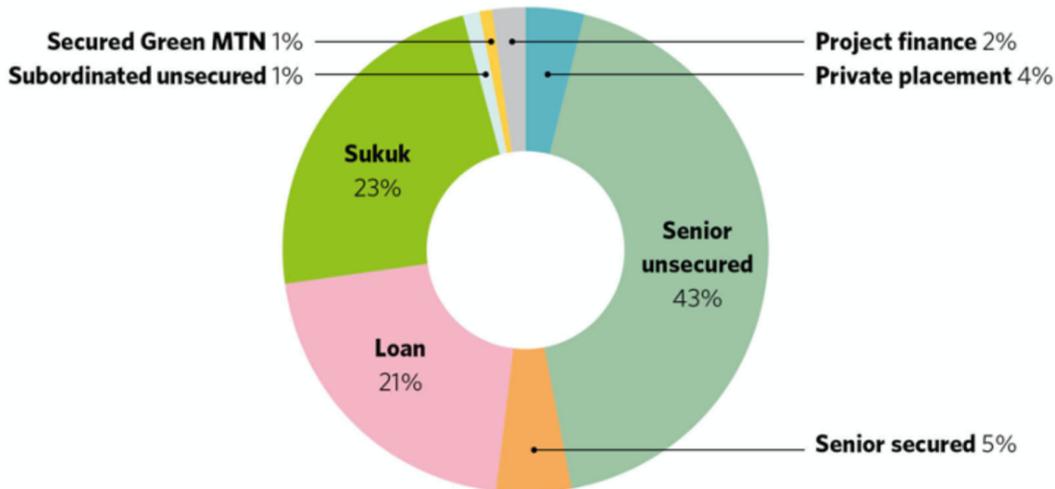


Figure 1: Issuance of green financial instruments in ASEAN Nations. Sustainability Linked Loans and Bonds (SLLs and SLBs) had a huge growth by issuance volume, closely followed by Green Sukuk.

ASEAN green finance instruments

Climate Bonds Initiative



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ASEAN Green Finance State of the Market 2019

Figure 2: Green Sukuk made up a large part of ASEAN green finance instruments in 2019.

APPENDIX 2

Volkswagen Emissions Scandal

When reports came out about Volkswagen that they were deliberately masking the actual pollution their cars produced by using a software tweak that allowed bypassing the emissions check, there was a global backlash. Subject to heavy scrutiny by authorities around the world and with thousands of lawsuits, Volkswagen estimated that this emissions scandal cost them €31.3 billion – a further €25 billion was wiped off its market capitalization within a couple of days.

Volkswagen (XETRA: VOW.DE) Stock Prices from 15th September 2015 to 23rd October 2015³

Date	Open	Close	Adj Close
16/09/2015	168.45	167.50	119.78
17/09/2015	168.20	167.40	119.70
18/09/2015	167.40	161.35	115.38
21/09/2015	140.95	133.70	95.61
22/09/2015	132.65	111.20	79.52
23/09/2015	111.55	118.90	85.02
24/09/2015	124.00	118.90	85.02
25/09/2015	123.00	115.55	82.63
28/09/2015	114.20	107.10	76.58
29/09/2015	105.00	103.30	73.87
30/09/2015	108.30	104.95	75.05
01/10/2015	108.65	105.05	75.12
02/10/2015	105.85	101.15	72.33
05/10/2015	101.35	102.80	73.51
06/10/2015	103.50	106.90	76.44
07/10/2015	109.05	114.90	82.16
08/10/2015	116.00	116.20	83.09
09/10/2015	118.50	125.90	90.03
12/10/2015	129.30	132.45	94.71
13/10/2015	133.65	130.60	93.39
14/10/2015	128.20	128.60	91.96
15/10/2015	130.70	123.80	88.53
16/10/2015	125.00	121.20	86.67
19/10/2015	119.20	118.60	84.81
20/10/2015	118.00	116.25	83.13
21/10/2015	117.50	119.95	85.77
22/10/2015	121.90	123.90	88.60
23/10/2015	126.00	121.85	87.13

³ News of the scandal broke out on 18th of September 2015, stock prices sourced from finance.yahoo.com.