

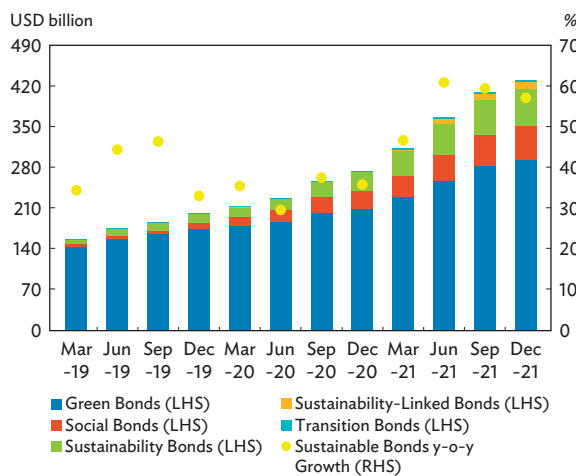
Recent Developments in ASEAN+3 Sustainable Bond Markets

Sustainable bond markets in ASEAN+3 continued to expand rapidly in 2021 amid rising interest in and awareness of environmental, social, and governance (ESG) investments.⁶ The amount of outstanding sustainable bonds—which comprise green, social, sustainable, sustainability-linked, and transition bonds—climbed to USD430.7 billion at the end of December 2021 (Figure 17). This was up from USD409.7 billion at the end of September and reflected a more than 50% annual increase from USD274.1 billion at the end of December 2020. While green bonds continued to dominate the ASEAN+3 sustainable bond market, accounting for 68.2% of the regional total, interest in other types of sustainable bonds has been rising. The

shares of social and sustainability bonds increased to 13.5% and 14.7%, respectively, from 11.5% and 11.7% at the end of 2020. Despite their respective shares remaining low, sustainability-linked bonds and transition bonds outstanding also expanded in size in 2021 amid their nascent stage of market development.

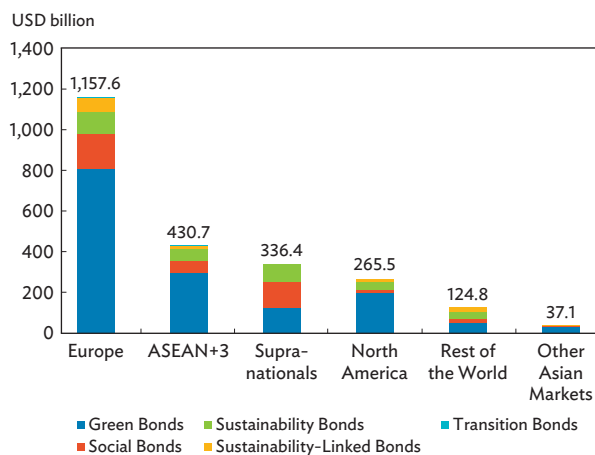
ASEAN+3 sustainable bonds accounted for 18.3% of the global market of USD2,352.0 billion at the end of Q4 2021, making it the world’s second-largest regional sustainable bond market (Figure 18). Europe remained the world’s largest regional sustainable bond market, accounting for 49.2% of the global total. Among sustainable bond types, ASEAN+3 is home to the

Figure 17: Outstanding Amount of Sustainable Bonds in ASEAN+3 Markets



ASEAN = Association of Southeast Asian Nations, LHS = left-hand side, RHS = right-hand side, USD = United States dollar, y-o-y = year-on-year.
 Notes:
 1. ASEAN includes the markets of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
 2. ASEAN+3 includes ASEAN members plus the People’s Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
 3. Data include both local currency and foreign currency issues.
 Source: *AsianBondsOnline* computations based on Bloomberg LP data.

Figure 18: Outstanding Amount of Sustainable Bonds by Global Region at the End of December 2021



ASEAN = Association of Southeast Asian Nations, USD = United States dollar.
 Notes:
 1. ASEAN includes the markets of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
 2. ASEAN+3 includes ASEAN members plus the People’s Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
 3. Data include both local currency and foreign currency issues.
 Source: *AsianBondsOnline* computations based on Bloomberg LP data.

⁶ For the discussion on sustainable bonds, ASEAN+3 includes Association of Southeast Asian Nations (ASEAN) members Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam plus the People’s Republic of China; Hong Kong, China; Japan; and the Republic of Korea.

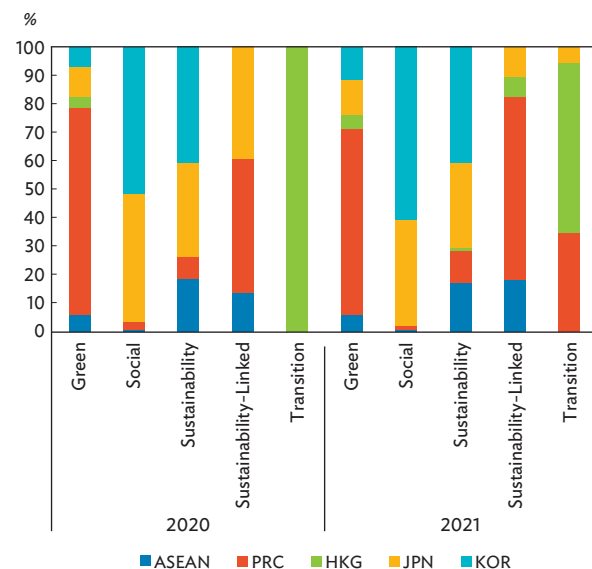
largest transition bond market in the world at a size of USD3.2 billion, representing 52.3% of transition bonds outstanding globally.

More diversified market profiles were observed for each bond type in 2021 compared to 2020 (**Figure 19**). The People's Republic of China (PRC) continued to dominate the ASEAN+3 green bond market, accounting for 65.2% of the regional green bond total in 2021. ASEAN markets contributed a slightly higher share of 5.9% in 2021 compared to 5.8% in 2020. Social bonds outstanding in the region expanded to USD58.1 billion at the end of 2021, dominated by the Republic of Korea and Japan, which accounted for 60.7% and 37.1% of the regional total, respectively. By the end of December 2021, regional sustainability bonds climbed to USD63.5 billion. Similar to the end of 2020, the Republic of Korea and Japan accounted for a combined 70.5% market share. Meanwhile, ASEAN accounted for a 17.1% share, while the PRC's share increased from 7.8% to 11.5% during the review period. Sustainability-linked bonds outstanding were USD12.3 billion at the end of December 2021, with

the PRC's share increasing significantly to 64.1% from 46.8% a year earlier. The amount of transition bonds outstanding was the smallest among all sustainable bond types at USD3.2 billion. Issuers of transition bonds were largely from Hong Kong, China and the PRC, with shares of 59.9% and 34.6%, respectively.

Driven by rising awareness of ESG investments, quarterly issuance of sustainable bonds in ASEAN+3 markets was robust in 2021 compared with prior years. Sustainable bond issuance reached USD239.5 billion in 2021, more than double the 2020 level of USD96.1 billion. In the fourth quarter of 2021, total issuance reached USD58.0 billion on 120.9% year-on-year growth (**Figure 20**). Among the different bond types, green bonds remained the most popular sustainable bond due to increasing concern about climate change. The share of green bonds to total sustainable bond issuance rose to 65.6% in 2021 from 60.0% in 2020. Sustainability-linked bonds also generated greater investor interest in 2021, with their share of sustainable bond issuance in ASEAN+3 climbing to 4.9% from 0.3% in 2020.

Figure 19: Types of Outstanding Sustainable Bonds in ASEAN+3 by Economy (share of total)



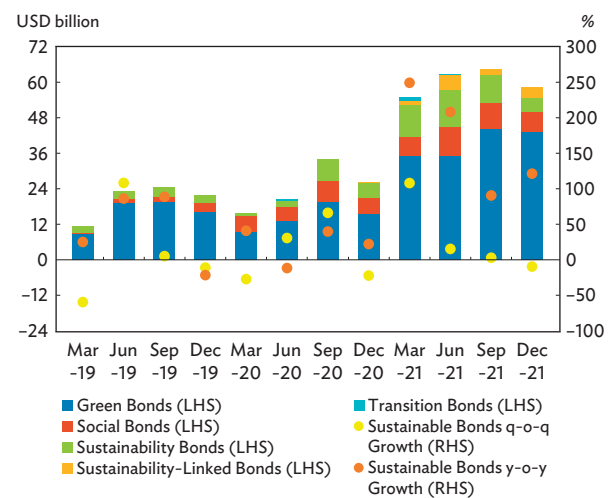
ASEAN = Association of Southeast Asian Nations; PRC = People's Republic of China; HKG = Hong Kong, China; JPN = Japan; KOR = Republic of Korea.

Notes:

1. ASEAN includes the markets of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
2. ASEAN+3 includes ASEAN members plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
3. Data include both local currency and foreign currency issues.

Source: *AsianBondsOnline* computations based on Bloomberg LP data.

Figure 20: Quarterly Issuance Volume of Sustainable Bonds in ASEAN+3 Markets



ASEAN = Association of Southeast Asian Nations, LHS = left-hand side, q-o-q = quarter-on-quarter, RHS = right-hand side, USD = United States dollar, y-o-y = year-on-year.

Notes:

1. ASEAN includes the markets of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
2. ASEAN+3 includes ASEAN members plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
3. Data include both local currency and foreign currency issues.

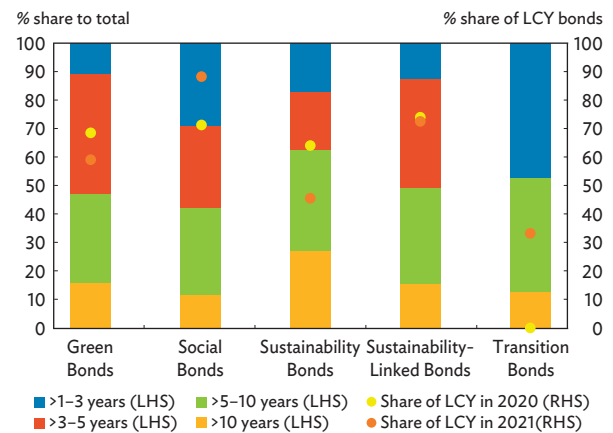
Source: *AsianBondsOnline* computations based on Bloomberg LP data.

Private sector issuers dominated sustainable bond issuance in the region in 2021, with all bond types benefiting from a more diversified issuer profile compared with the previous year (Figure 21). The financial sector was the primary issuer of sustainable bonds in ASEAN+3 markets in 2021, especially in the social bond and sustainability bond markets. While investor interest in sustainable bonds rose in 2021, demand was largely for shorter-term financing: 50.7% of sustainable bond issuance in 2021 comprised bonds with maturities of 5 years or less (Figure 22). The majority of green bonds (52.7%) and social bonds (57.8%) issued in 2021 had tenors of 5 years or less, while the majority of sustainability bonds (62.6%) and transition bonds (52.7%) issued in 2021 had tenors of more than 5 years. Further, the share of local currency sustainable bonds decreased to 61.5% in 2021 from 68.2% in 2020. Local currency issuance was largely seen in green, social, and sustainability-linked bond issuances, while more foreign currency bond issuance was observed in sustainability and transition bonds.

Information asymmetry and transparency is a critical development issue in the sustainable bond market. Evidence shows that green bonds, particularly those with green labels and certifications, tend to benefit from a negative green premium compared to similar conventional bonds. Box 3 provides additional evidence

to show that frequent green bond issuers also enjoy cost benefits due to reduced information asymmetry. Box 4 summarizes market participants’ views on the importance of integrity and transparency in ESG investments.

Figure 22: Maturity and Currency Profiles of ASEAN+3 Sustainable Bonds Issued in 2021

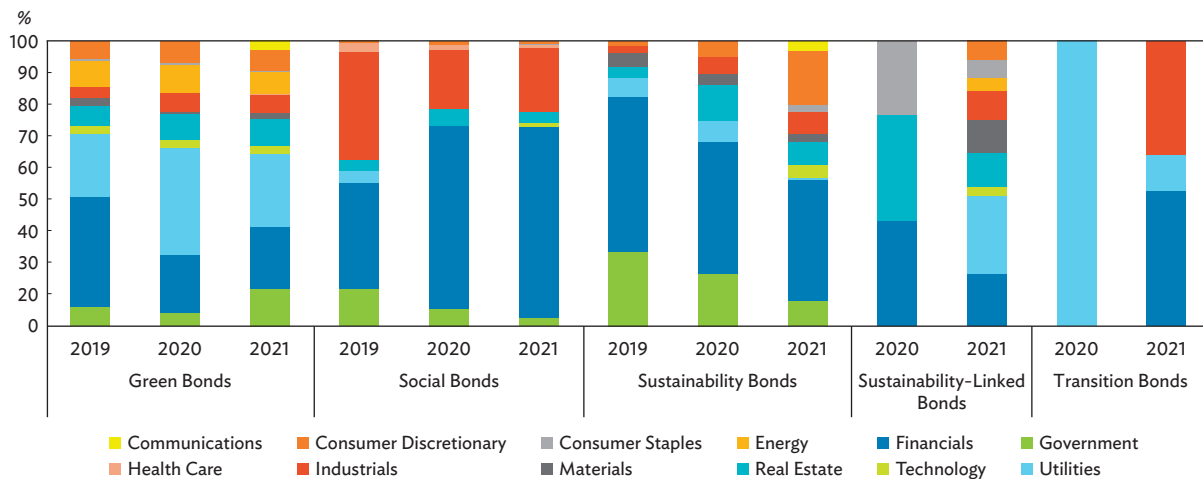


ASEAN = Association of Southeast Asian Nations, LCY = local currency, LHS = left-hand side, RHS = right-hand side.

Notes:

1. ASEAN includes the markets of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
 2. ASEAN+3 includes ASEAN members plus the People’s Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
 3. Data include both local currency and foreign currency issues.
- Source: AsianBondsOnline computations based on Bloomberg LP data.

Figure 21: Issuance of Sustainable Bonds in ASEAN+3 by Sector (% share of total)



ASEAN = Association of Southeast Asian Nations.

Notes:

1. ASEAN includes the markets of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
 2. ASEAN+3 includes ASEAN members plus the People’s Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
 3. Data include both foreign currency and local currency issues.
- Source: AsianBondsOnline computations based on Bloomberg LP data.

Box 3: Pricing of Frequent Green Bond Issuance

In recent years, green bonds have become a widely adopted instrument to finance projects with positive environmental impacts.^a A well-functioning green bond market helps to channel capital from both the public and private sectors to green investments, while reducing financing costs and fostering risk-sharing.

The financial markets have priced in climate-change-related risks as awareness of the risks associated with climate change increases, which has boosted the supply of and demand for green bonds worldwide. On the supply side, issuing green bonds can save funding costs, build social capital by strengthening an issuer's reputation with stakeholders, gain positive investor recognition, and attract a more diversified investor base. On the demand side, investing in green bonds helps stabilize capital inflows, build greater resilience during market turmoil, and provide hedging and diversification benefits (Climate Bonds Initiative 2021, Asian Development Bank 2021). Annual global green bond issuance increased from USD70.1 billion in 2014 to USD596.6 billion in 2021 (Figure B3.1).

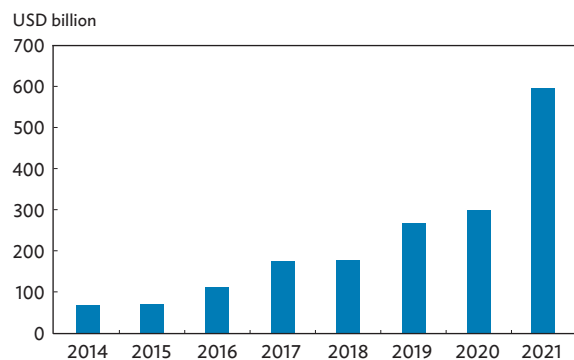
Nevertheless, the green bond market's development still faces key challenges. One of the most pronounced challenges is the information asymmetry associated with environmental performance, which directly links to possible greenwashing-related reputational risks and undermines investor confidence. Shapiro (2021) reviewed green bonds listed in the Climate Bonds Database issued between November 2017 and

March 2019 and found that only 77% of green bond issuers published information on the allocation of proceeds and only 59% quantified the environmental impact of the financed projects. Demand for greater transparency and integrity on the use of green bond proceeds has grown in parallel with the rapid expansion of the green bond market. Figure B3.2 depicts how often people are searching for the terms “green bonds” and “greenwashing” on Google.

To boost information disclosure, policy makers and the investment community are seeking to define a clear taxonomy and market standards, and are introducing information-enhancing mechanisms—such as external verification, certification, and labels—as part of the green bond market ecosystem to mitigate information asymmetry and reputational risks. These information-enhancing practices can reduce funding costs for reliable green bonds through greater information transparency and lower reputational risks (Hyun, Park, and Tian 2020). However, such benefits are partly offset by the additional cost associated with related services.

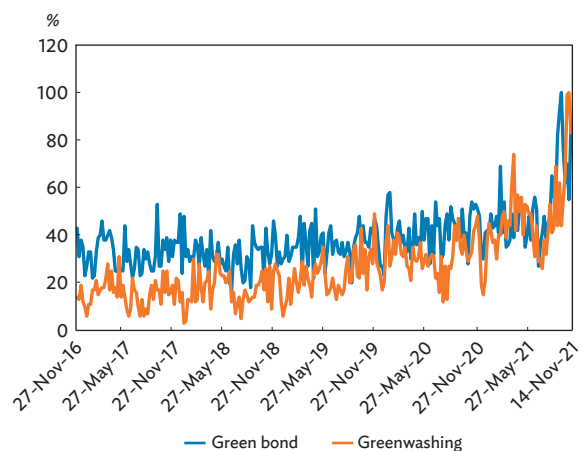
This study explores a new and cost-efficient mechanism that helps reduce information asymmetry and reputational risks: frequent green bond issuance. By repeatedly tapping the green bond market to finance green investments, frequent bond issuers can recycle existing knowledge,

Figure B3.1: Global Green Bond Issuance



USD = United States dollar.
Source: Bloomberg LP.

Figure B3.2: Increasing Interest in Green Bonds and Greenwashing



USD = United States dollar.
Source: Bloomberg LP.

^a This box was written by Suk Hyun, Donghyun Park, and Shu Tian and is based on Hyun, S., D. Park, and S. Tian. 2022. “The Price of Frequent Issuance: Value of Information in the Green Bond Market.” Yonsei University Working Paper.

Box 3 *continued*

capacity, and market relationships in any subsequent green bond issuance, reducing the marginal costs of an additional green bond issuance. Regardless of third-party assessment, frequent green bond issuers have conducted more reporting on and monitoring of green bond proceeds, which provides more information on an issuer's reliability relative to new or infrequent green bond issuers. Moreover, by frequently issuing green bonds, issuers also signal a stronger environmental commitment by persistently investing in green projects (Flammer 2021). Together, a strong environmental commitment and greater information transparency will help frequent issuers gain the confidence of investors, thus lowering financing costs.

Exploring global green bond issuance data from Bloomberg from 2014 to 2019, this study utilizes the Oaxaca-Blinder decomposition approach to determine to what extent common bond pricing factors—such as issuance size, credit rating, maturity, coupon rate, liquidity, and green label—help explain the yield difference between frequent and infrequent green bond issuers, and to what extent the unobserved factors beyond existing bond pricing can explain the yield difference. As the yield difference reflects whether an issuer frequently taps the green bond market, the yield difference that is unexplained by existing common pricing factors can partly reflect how the green bond market prices frequent issuance and related informational value.

Empirical evidence shows that, on average, infrequent green bond issuers pay 114–177 basis points more on their bond issuance relative to frequent green bond issuers, which can be attributed to existing green bond pricing factors such as maturity, credit rating, liquidity, and green label. More importantly, the evidence reports an 8-basis-points bond yield difference between frequent and infrequent issuers that cannot be explained by the aforementioned common bond pricing factors. This yield difference thus captures some additional pricing mechanism between frequent and infrequent issuers, as frequent issuers tend to have

greater information transparency that is already priced in by potential investors.

These new findings offer useful policy implications. While it is important to further develop the green bond market ecosystem and reduce information asymmetry via disclosure requirements, information-enhancing financial services, intermediaries, and policy makers should encourage existing green bond issuers to continue issuing green bonds. Frequent green bond issuance not only lowers investor information asymmetry, thereby boosting investor confidence, but it also reduces issuer financing costs in a relatively cost-efficient manner. From a market development perspective, encouraging frequent green bond issuance can boost the supply of and demand for green bonds, benefiting market depth and liquidity. Further research into the knowledge-identifying factors that affect the decisions of frequent green bond issuers could provide useful policy implications on how to encourage frequent green bond issuances.

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Box 4: Asian Development Bank–State Street Global Advisors Webinar Series— Progress toward Greater Sustainable Market Efficiency and Integrity

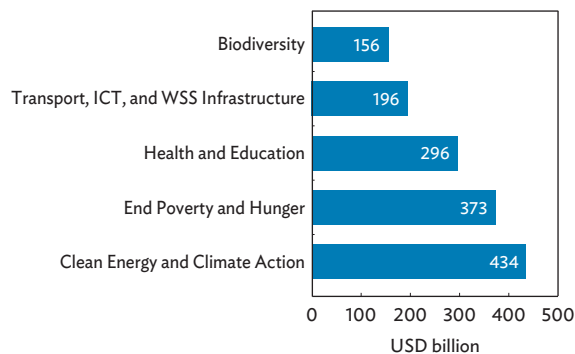
In late 2021, the Asian Development Bank (ADB) and State Street Global Advisors collaborated to host a three-part webinar series, Asia’s Progress toward Greater Sustainable Financial Market Efficiency and Integrity.^a In this series, market participants from Asia and Europe discussed the development of sustainable taxonomies; the trend of environmental, social, and governance (ESG) centrality; and the importance of corporate climate and sustainability disclosure.

The discussions revealed insights for corporates and investors seeking to understand key trends in ESG investing, corporate disclosure, green taxonomy development, green and transition finance, and opportunities in Sustainable Development Goal (SDG)-aligned business. Speakers presented honest assessments of challenges, including the lack of sustainability disclosure standards, insufficient ESG data availability and comparability, and the tradeoffs and pitfalls encountered in ESG investing. In terms of next steps and policy recommendations, investors indicated the need for more climate-related financial disclosure such as Task Force on Climate-Related Financial Disclosures (TCFD) reporting, the development of centralized ESG databases in Asia, and credible mechanisms for channeling finance to transition- and SDG-aligned projects.

Trends and Opportunities

First, “green as an opportunity” is not just a feel-good catchphrase but an enormous mega-trend. The development of green taxonomies is not a faraway European project but one that Asian policy makers are actively shaping to finance climate change adaptation and transition in the region. Efforts are underway to align green taxonomies between Europe and the People’s Republic of China to promote sustainable financial product flows. Sustainable development is a significant business opportunity: an estimated EUR270 billion and USD1.5 trillion in green and SDG-aligned investments in Europe and Asia, respectively, are required annually through 2030 (**Figure B4.1**). Meanwhile, the global total for green and other impact bonds outstanding grew to nearly USD2.2 trillion in 2021. Investors are embracing green finance, not only in recognition of the investment risks from climate change but also for the investment opportunities arising from solutions that address it.

Figure B4.1: Annual Investment Required for Sustainable Development in Asia and the Pacific by 2030



ICT = information and communication technology; USD = United States dollar; WSS = water, sanitation, and safe water.
Sources: United Nations Economic and Social Commission for Asia and the Pacific. 2019. Economic and Social Survey of Asia and the Pacific 2019: Ambitions beyond Growth. <https://www.unescap.org/publications/economic-and-social-surveyasia-and-pacific-2019-ambitions-beyond-growth>.

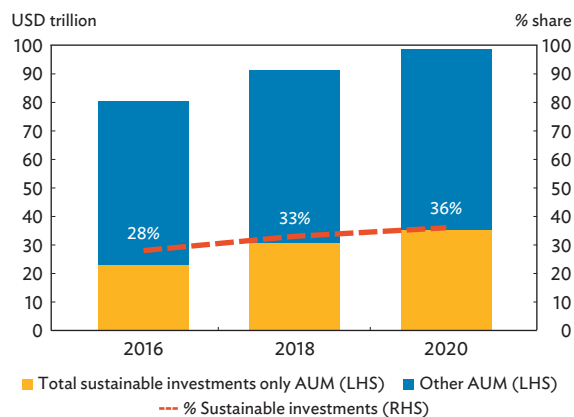
Second, shifts in market preferences for sustainability and corporate transparency are fundamentally changing customer and investor decision-making, reflecting the growing centrality of ESG. Investment managers from developed markets report that 36% of total invested assets under management in their respective regions—a USD35 trillion slice of that market in 2020—is now managed according to sustainable investment principles (**Figure B4.2**). To paraphrase one of the webinar speakers: “Clients used to ask, ‘why are you doing ESG investing?’ Now they ask, ‘Why are you not doing ESG investing?’”

Third, stakeholder accountability and business integrity is manifest in better disclosure practices by firms and the adoption of ESG investment considerations by asset owners. Corporates are finding that disclosure leads to enhanced operational awareness resulting from the inter-group coordination required to track sustainability metrics. Investors are rating companies not only by their financial performance, but also by the operational quality, governance, and strategy apparent from their disclosures. Leading firms now compete to “out-disclose” their competitors to gain a competitive edge, as this factor is increasingly a driver of investors’ capital allocation decisions.

^a This box was written by Jason Mortimer, head of Sustainable Investment—Fixed Income and senior portfolio manager at Nomura Asset Management.

Box 4 continued

Figure B4.2: Sustainable Investment AUM as a Share of Developed Market AUM



AUM = assets under management, LHS = left-hand side, RHS = right-hand side, USD = United States dollar.

Note: Survey data include Australia, Canada, Europe, Japan, New Zealand, and the United States.

Source: Global Sustainable Investment Alliance. 2020. *Global Sustainable Investment Review*. <http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf>.

Challenges

Speakers pointed to a lack of standards and problems with ESG data quality and reporting consistency that makes securities analysis and investment less efficient than traditional investing. Initiatives to promote disclosure standardization such as TCFD are gaining prominence but adoption in Asia remains low. Taxonomies can help, and their development in Europe and Asia is advancing. But reaching consensus for cross-border alignment is a slow process that must account for income and development differences between jurisdictions.

Transition financing is needed to support the transition of high carbon and hard-to-abate economic sectors. But investors are often reluctant to finance these brown assets given their own net zero pledges. Asian policy makers are building transition directly into taxonomy development, and have recently announced the Energy Transition Mechanism, with ADB involvement, for enhanced credibility.

Asian investors encounter tradeoffs and unintended consequences from common ESG investment approaches. Some investors believe that negative screening and exclusion policies impose unacceptable limitations on portfolio diversification. Others described difficulties convincing some Asian companies to take disclosure and ESG compliance seriously, yet find that divestment and best-in-class ESG approaches may be irresponsible investment because investors must give up their power to positively influence companies. Overall, investors agreed that market participants must hold each other to account for maintaining integrity in sustainable finance markets.

Next Steps

Demand for sustainable investments creates a need for consistent data, measurement, labeling, and marketing by corporates and investors. This is addressable in part through promotion of industry-led standardized sustainability reporting and practical taxonomies that address transition. Investor are calling for high-quality corporate disclosure of climate-related impacts and sustainability risks and opportunities, which are now integral to their ESG investment processes. While still largely voluntary, TCFD reporting and improved sustainability performance can be promoted in Asia as a new competitive edge for corporates. Finally, investors are calling on multilateral development banks like ADB to support the creation of ESG databases and impact metrics to facilitate ESG investment integration and boost SDG- and transition-financing in emerging Asia.