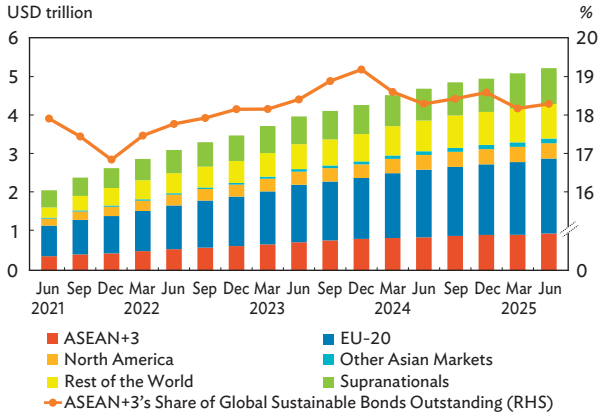
Recent Developments in the ASEAN+3 Sustainable Bond Market

Sustainable Bonds Outstanding

Expansion of the ASEAN+3 sustainable bond market accelerated in the second quarter (Q2) of 2025, supported by robust issuance on improved financial conditions.[15] Sustainable bonds outstanding in ASEAN+3 reached USD955.3 billion at the end of June, expanding 3.3% quarter-on-quarter (q-o-q) in Q2 2025, up from tepid 0.5% q-o-q growth in the prior quarter. The pace of expansion during the quarter also exceeded that of the sustainable bond market globally (2.6% q-o-q) and in the European Union 20 (EU-20) (3.1% q-o-q). ASEAN+3 remained the second-largest regional sustainable bond market in the world, accounting for 18.3% of the global total of USD5.2 trillion at the end of Q2 2025 (**Figure 9**). However, ASEAN+3's sustainable bond market comprised only 2.4% of its general bond market, compared with the corresponding 8.5% share in the EU-20. The People's Republic of China (PRC) (USD385.6 billion) accounted for 40.4% of total ASEAN+3 sustainable bonds outstanding at the end of June, which was less than its equivalent share of 57.4% in the ASEAN+3 general bond market. ASEAN sustainable bonds outstanding accounted for 10.5% of the region's total sustainable bond stock, exceeding its corresponding share of 5.9% in ASEAN+3's general bond market. Larger contributions to the region's sustainable bond market versus its general bond market were also observed in the Republic of Korea (19.4% versus 5.5%) and Hong Kong, China (4.8% versus 0.6%).

ASEAN+3's sustainable bond market showed greater diversity in terms of instrument profile than the EU-20's. Green bonds accounted for 57.9% of total sustainable bonds outstanding in ASEAN+3 at the end of June (**Figure 10**), which was less than the corresponding share of 66.0% in the EU-20, reflecting a more diversified bond instrument profile. In ASEAN+3, the respective

Figure 9: Global Sustainable Bonds Outstanding

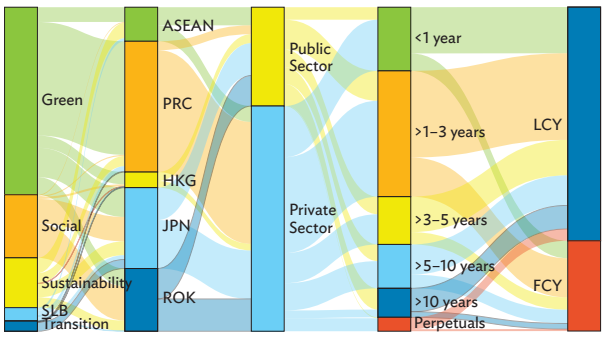


ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea;
EU-20 = European Union 20; RHS = right-hand side; USD = United States dollar.

Notes:
1. The EU-20 includes EU member markets Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.
2. Data include both local currency and foreign currency issues.

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

Figure 10: Market Profile of Outstanding ASEAN+3 Sustainable Bonds at the End of June 2025



ASEAN = Association of Southeast Asian Nations; PRC = People's Republic of China; FCY = foreign currency; HKG = Hong Kong, China; JPN = Japan; ROK = Republic of Korea; LCY = local currency; SLB = sustainability-linked bond.

Notes:
1. ASEAN+3 is defined to include member states of ASEAN plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
2. ASEAN comprises the markets of Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
3. SLBs include transition-linked bonds.

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

[15] ASEAN+3 comprises the member states of the Association of Southeast Asian Nations (ASEAN) plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea.

shares of social bonds (19.5%), sustainability bonds (15.4%), and transition bonds (3.2%) exceeded their respective corresponding shares in the EU-20: 17.0%, 9.0%, and 0.3%, respectively (**Table 1**). This resulted in a lower Herfindahl–Hirschman Index score for ASEAN+3 of 0.40 versus 0.48 for the EU-20.[16] The private sector's share (69.5%) in sustainable bonds outstanding in ASEAN+3 was also higher than the corresponding share in the EU-20 (50.5%). The private sector accounted for a majority share of sustainable bonds outstanding in large regional markets such as the PRC (93.2%), Japan (60.0%), and the Republic of Korea (51.4%) (Figure 10). Public sector issuances comprised a majority of sustainable bonds outstanding in the markets of Hong Kong, China (57.6%) and ASEAN (53.2%). The local currency (LCY) financing shares of the EU-20 were comparable in its sustainable (90.1%) and general (89.5%) bond markets at the end of Q2 2025. This contrasts with ASEAN+3, where the LCY financing share in the sustainable bond market (72.1%) lagged that in the general bond market (95.5%).

Short- to medium-term financing dominated ASEAN+3's sustainable bond market at the end of June. Around 73.2% of outstanding sustainable bonds in ASEAN+3 had a remaining tenor of 5 years or less, which was well above the corresponding share of 48.0% in the EU-20 (**Figure 11**). Meanwhile, ASEAN markets had 64.0% of sustainable bonds outstanding with remaining tenors of over 5 years, driven by large, long-term sustainable bonds from governments in Indonesia, the Philippines, Singapore, and Thailand. ASEAN's size-weighted average tenor stood at 11.1 years at the end of June, exceeding that of both ASEAN+3 (4.6 years) and the EU-20 (7.7 years), with the longest average tenors seen in Singapore (16.6 years) and the Philippines (11.8 years). Social bonds had the shortest maturity structure in the ASEAN+3 sustainable bond

Table 1: Instrument, Issuer, and Currency Profiles in the ASEAN+3 and European Union 20 Sustainable Bond Markets at the End of June 2025

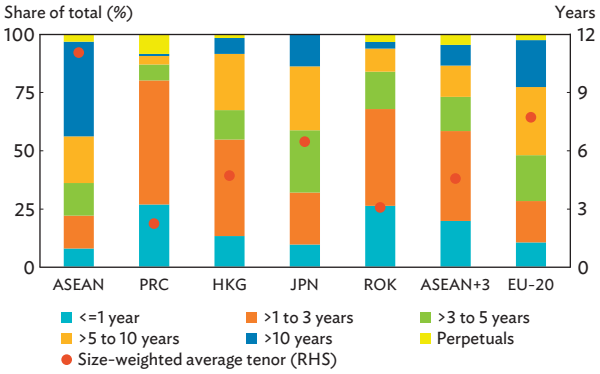
By End-June 2025	ASEAN+3	EU-20
Instrument profile (value-based share of regional sustainable bonds outstanding)		
Green bonds	57.9%	66.0%
Social bonds	19.5%	17.0%
Sustainability bonds	15.4%	9.0%
SLBs (including transition-linked bonds)	4.1%	7.7%
Transition bonds	3.2%	0.3%
Herfindahl–Hirschman Index	0.40	0.48
Issuer and currency profile		
Private sector's share of regional general bonds outstanding	23.9%	39.7%
Private sector's share of regional sustainable bonds outstanding	69.5%	50.5%
LCY financing's share of regional general bonds outstanding	95.5%	89.5%
LCY financing's share of regional sustainable bonds outstanding	72.1%	90.1%

ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea; EU-20 = European Union 20; LCY = local currency; SLB = sustainability-linked bond.

Note: The EU-20 includes European Union member markets Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.

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

Figure 11: Tenor Profiles of ASEAN+3 and European Union 20 Sustainable Bonds Outstanding at the End of June 2025



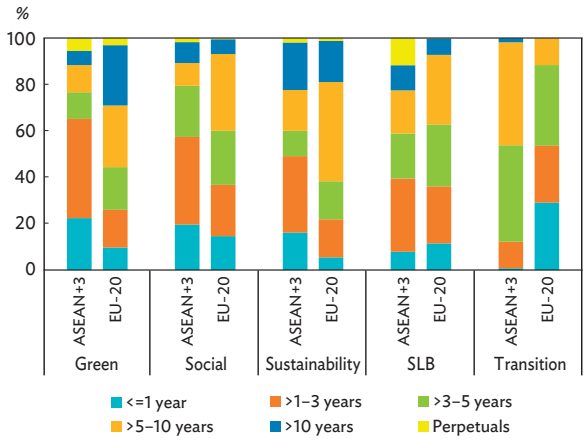
ASEAN = Association of Southeast Asian Nations; PRC = People's Republic of China; EU-20 = European Union 20; HKG = Hong Kong, China; JPN = Japan; ROK = Republic of Korea; RHS = right-hand side.

Notes:
1. ASEAN+3 is defined to include member states of ASEAN plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
2. ASEAN comprises the markets of Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
3. The EU-20 includes European Union member markets Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.
4. Data include both local currency and foreign currency issues.

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

[16] The Herfindahl–Hirschman Index is a commonly accepted measure of market concentration. The index is used to measure market diversification and is calculated by summing the squared share of each type of sustainable bonds. A lower score indicates greater diversity.

Figure 12: Tenor Profiles of ASEAN+3 and European Union 20 Sustainable Bonds Outstanding by Type of Bond at the End of June 2025

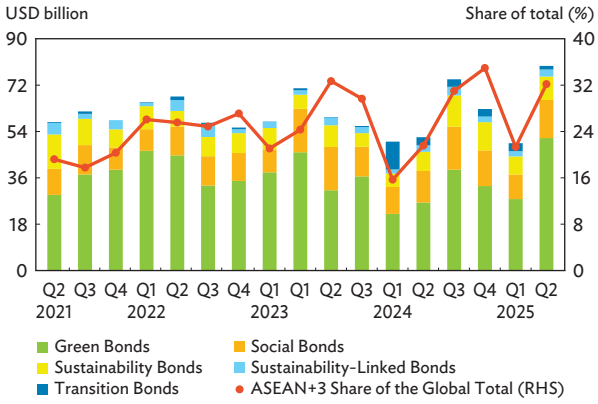


ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea; EU-20 = European Union 20; SLB = sustainability-linked bond.

Notes:
1. The EU-20 includes EU member markets Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.
2. Data include both local currency and foreign currency issues.
3. SLBs include transition-linked bonds.

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

Figure 13: ASEAN+3 Sustainable Bond Issuance and Share of the Global Total

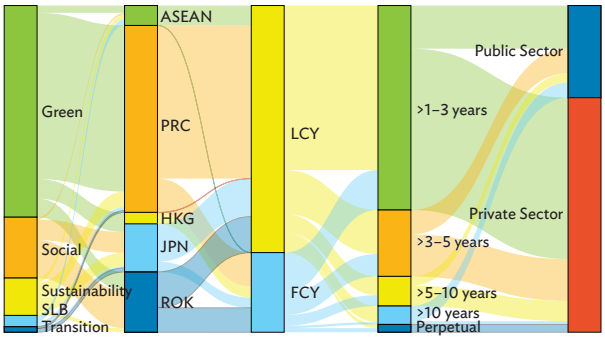


ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea; RHS = right-hand side; USD = United States dollar.

Notes:
1. Data include both local currency and foreign currency issues.
2. Sustainability-linked bonds include transition-linked bonds.

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

Figure 14: Market Profile of ASEAN+3 Sustainable Bond Issuance in the Second Quarter of 2025



ASEAN = Association of Southeast Asian Nations; PRC = People's Republic of China; FCY = foreign currency; HKG = Hong Kong, China; JPN = Japan; ROK = Republic of Korea; LCY = local currency; SLB = sustainability-linked bond.

Notes:
1. ASEAN+3 is defined to include member states of ASEAN plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
2. ASEAN comprises the markets of Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.
3. SLBs include transition-linked bonds.

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

market with 79.5% carrying tenors of 5 years or less, while transition bonds had the longest with 46.2% holding tenors of over 5 years (**Figure 12**).

Sustainable Bond Issuance

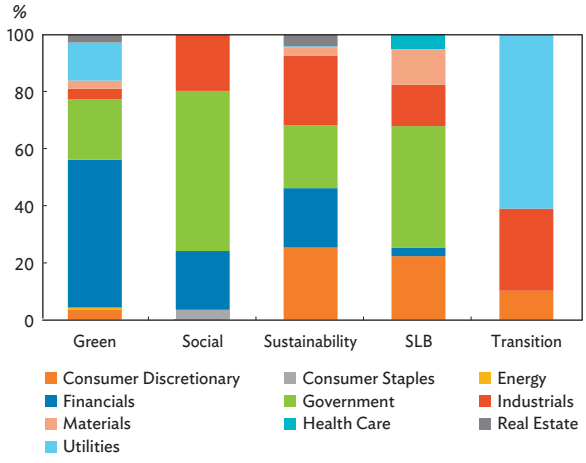
ASEAN+3's sustainable bond issuance totaled USD79.6 billion in Q2 2025 on growth of 60.6% q-o-q, following a 21.2% q-o-q contraction in the previous quarter. Growth in sustainable bond issuance in ASEAN+3 was the market's most rapid since Q2 2021 and also outpaced growth in both the EU-20 (23.1% q-o-q) and the global market (6.5% q-o-q). The increase in sustainable bond issuance was supported by improved investor sentiment amid ongoing monetary easing and progress in trade negotiations between the United States and major regional trading partners. During Q2 2025, ASEAN+3 accounted for 32.2% of total sustainable bond issuance worldwide, up from 21.4% in the previous quarter (**Figure 13**). Sustainable bond issuance accounted for 8.4% of ASEAN's total bond issuance in Q2 2025, exceeding the corresponding shares in the global market (4.7%) and ASEAN+3 (4.3%).

- Across bond types, green bonds comprised 64.8% of ASEAN+3's total sustainable bond issuance in Q2 2025, followed by social bonds (18.6%) (**Figure 14**). The PRC accounted for 57.2% of regional sustainable bond issuance and led green bond issuance by a wide margin (78.5% of the

regional total). The Republic of Korea contributed 18.5% of ASEAN+3's sustainable bond issuance during the quarter and was the largest issuer of social bonds (62.1% of the regional total). ASEAN economies accounted for 6.1% of the regional sustainable bond issuance total, contributing a majority (52.8%) of sustainability-linked bonds.

- LCY financing accounted for 75.6% of ASEAN+3's sustainable bond issuance in Q2 2025, which was below the LCY issuance share of 95.0% in the region's general bond market and the corresponding share of 88.9% in the EU-20's sustainable bond market. Within ASEAN+3, the LCY financing share in Q2 2025 was highest in the ASEAN sustainable bond market at 99.5%, which also exceeded the corresponding share in ASEAN's general bond market (75.1%) (Figure 14).
- Bonds with maturities of 5 years or less accounted for 82.9% of ASEAN+3 sustainable bond issuance in Q2 2025. This was much higher than the corresponding shares of 31.5% in the EU-20 and 45.6% in ASEAN+3's general bond market. Bonds with tenors of 5 years or less accounted for 93.7% and 88.2% of sustainable bond issuance in the PRC and the Republic of Korea, respectively, while in ASEAN markets around 61.3% of sustainable bond issuance during the quarter carried a maturity of over 5 years—with more than half carrying a maturity longer than 10 years. Thus, the size-weighted average maturity of ASEAN sustainable bond issuance in Q2 2025 was 13.9 years, compared with 8.5 years in the EU-20 and 5.1 years in ASEAN+3. ASEAN's relatively longer average maturity was largely driven by a 29-year green bond issued by the Government of Singapore during the quarter.
- Corporate financing comprised 71.8% of ASEAN+3 sustainable bond issuance in Q2 2025, compared with a corresponding share of 38.5% in the region's general bond market (Figure 14). Higher shares of private sector sustainable bond issuance were most evident in large regional markets including the PRC (90.1%) and Japan (73.0%), while public sector financing was more prevalent among sustainable bond issuance in ASEAN markets (60.8%); the Republic of Korea (62.0%); and Hong Kong, China (96.8%). Within the private sector, financial firms were the most active issuers of sustainable bonds during the quarter with a share of 55.6%, followed by industrials (13.8%) and utilities (13.6%) (**Figure 15**). To promote more investment in renewable energy, policymakers need to foster a more enabling environment. **Box 2** explores various economic and noneconomic drivers of renewable energy investments.

Figure 15: ASEAN+3 Sustainable Bond Issuance by Sector in the Second Quarter of 2025



SLB = sustainability-linked bond.

Notes:
1. ASEAN+3 is defined to include member states of the Association of Southeast Asian Nations plus the People's Republic of China; Hong Kong, China; Japan; and the Republic of Korea.
2. Data include both local currency and foreign currency issues.
3. SLBs include transition-linked bonds.

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

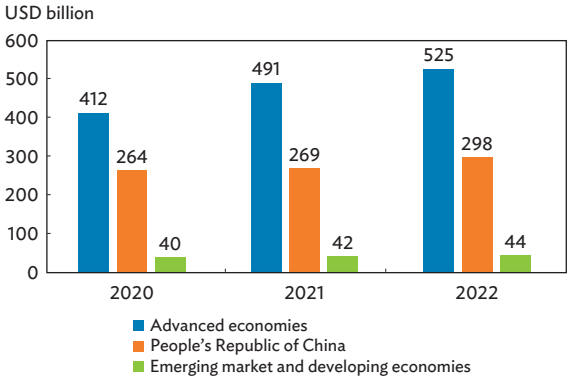
Box 2: Unlocking Renewable Energy Investments—The Role of Economic and Noneconomic Drivers

The global energy landscape is undergoing a profound transformation, driven by growing climate imperatives, the limited fossil fuel supply, and ongoing geopolitical uncertainties. Fossil fuels remain the dominant source of energy-related emissions globally, contributing to nearly 90% of carbon emissions worldwide. As a result, the transition to renewable energy (RE) is no longer a choice; it is a necessity. Beyond its environmental significance, RE is also essential for improving national energy security, tackling socioeconomic inequalities, and meeting the Paris Agreement target of limiting global warming to significantly below 2°C—ideally 1.5°C.

Despite the recognized urgency and promising growth in RE investments—currently estimated at USD2 trillion annually—this still falls substantially short of the USD5 trillion required to achieve net-zero carbon targets by mid-century (International Energy Agency 2022). This considerable investment gap represents a critical challenge to global sustainability efforts. This shortfall persists even in developed economies with mature financial systems, suggesting that the barriers to RE investment are not solely financial. Instead, it points to broader structural and institutional challenges embedded within national policies, market regulations, and investment frameworks.

Understanding what drives—or impedes—investment in RE is therefore vital. In this context, Uddin et al. (2025) explore the determinants of RE investments using a comprehensive panel dataset of 36 economies from 2000 to 2020. The analysis uses a comparative approach to assess both developed and developing economies, while categorizing factors into economic (e.g., industrial growth, environmental taxes, inflation, and oil prices) and noneconomic (e.g., social globalization, environmental technology, climate vulnerability, and political instability) dimensions. This approach helps uncover the potential structural differences between developing and developed economies, given the well-documented uneven distribution of RE investments worldwide. **Figure B2.1** illustrates that per capita RE investments are notably greater in developed economies compared to emerging and developing economies, albeit the People's Republic of China displays exceptionally considerable investments. This visual representation conveys the core premise for the study's comparative analysis and reinforces the necessity of a differentiated approach to policy recommendations.

Figure B2.1: Renewable Energy Investments per Capita



USD = United States dollar.

Note: Emerging market and developing economies exclude the People's Republic of China.

Source: International Energy Agency. 2022. *World Energy Investment 2022*.

Uddin et al. (2025) employ sophisticated econometric techniques to show a clear divergence between the two economic groups: In developed economies, industrial growth boosts RE investment, supporting green growth and clean technology; in developing economies, it has the opposite effect. Developing economies continue to depend significantly on fossil fuels to facilitate rapid industrialization, rendering the adoption of clean energy both financially and infrastructurally challenging. Moreover, the high up-front capital required for solar and wind projects, coupled with limited public financing and access to green credit, limits scalability in developing economies.

Environmental taxes emerge as a consistently positive driver of RE investment across both economic groups. Their effectiveness highlights the importance of policy instruments that make pollution-intensive energy more expensive relative to renewables. In contrast, inflation exerts a negative influence on RE investments in developed economies, where financial markets exhibit heightened sensitivity to increased interest rates and borrowing expenses. Inflation appears to

This box was written by Md. Bokhtiar Hasan (associate professor in the Department of Finance & Banking at Islamic University, Bangladesh) based on G.S. Uddin, B. Hasan, D. Park, S. Ali, and C. Wadstrom. 2025. Exploring the Economic and Non-Economic Determinants of Investments in Renewable Energy. *Renewable Energy*. 255. 123750.

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Box 2 *continued*

have a weaker influence in developing economies, likely because RE projects there are often supported by public subsidies or fixed tariff structures that insulate them from short-term macroeconomic shocks.

Oil prices, often cited as a key determinant of the likelihood of energy transition, significantly and negatively influence RE investments only in developing economies. When oil prices rise, fossil fuels may become more attractive in the short term due to immediate affordability, especially in economies lacking strong energy infrastructure or subsidies for renewables.

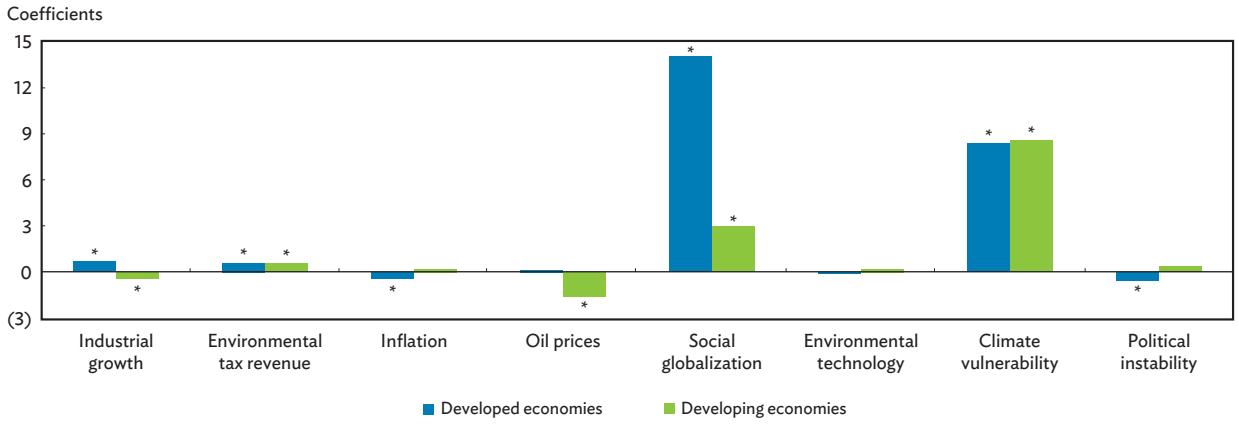
Noneconomic factors increasingly influence RE investment decisions, often overshadowing economic factors. Social globalization—the increasing interconnectedness and interaction between people and groups across borders—emerges as a strong enabler of RE investments. In developed economies, it amplifies environmental awareness, facilitates technology transfer, and encourages public pressure for clean energy adoption. Even in developing economies, social globalization contributes positively, albeit more modestly.

Environmental-related technology shows a strong correlation with RE investments, particularly in developing economies. However, its influence presents a more nuanced picture in developed economies: a negative influence at lower investment levels but a positive effect at the highest quantile. This suggests that in mature RE markets, only large-scale, disruptive innovations or major R&D efforts drive new investment, whereas incremental improvements have limited impact. Therefore, technology policy in these economies should focus on breakthrough innovations and large demonstration projects to stimulate substantial RE investments.

Climate vulnerability also consistently drives RE investments across both economic groups. This highlights how greater exposure to climate risks directly motivates increased RE investments as an integral part of climate adaptation and resilience. By contrast, political instability significantly deters RE investments in developed economies, where investors rely on policy certainty and long-term commitments. Interestingly, its effect is not statistically significant in developing economies, likely because investors already factor such risks into their decision-making in these contexts. The impacts of economic and noneconomic factors on RE investments are summarized in **Figure B2.2**.

These findings offer three major takeaways for policy makers. First, the contrasting effects of key variables—such as industrial growth and inflation—between the two economy groups underline the need for tailored strategies. In this context, a universal policy approach is unlikely to be effective. Developing economies require support in overcoming cost and infrastructure barriers, while advanced economies need to focus on innovation and scaling.

Figure B2.2: Summary of Economic and Noneconomic Drivers of Renewable Energy Investments—Developed Versus Developing Economies



( ) = negative.

Note: * indicates statistical significance at the 5% level.

Source: G.S. Uddin, B. Hasan, D. Park, S. Ali, and C. Wadstrom. 2025. Exploring the Economic and Non-Economic Determinants of Investments in Renewable Energy. *Renewable Energy*. 255. 123750.

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Box 2 *continued*

Second, the findings emphasize the need for policy makers to consider noneconomic factors. Economies that encourage education, social awareness, and digital integration are better positioned to build public support for clean energy transitions. This calls for a broader view of energy policy—one that incorporates societal and institutional dimensions alongside traditional economic instruments.

Third, even with supportive macroeconomic conditions, RE investments often stall without stable governance and institutional credibility. Strengthening the rule of law, reducing regulatory uncertainty, and aligning national strategies with long-term international climate goals can de-risk renewable infrastructure investments and attract global capital.

In the end, accelerating the global transition to RE necessitates a sophisticated understanding of diverse investment drivers and a steadfast commitment to context-specific, integrated policy frameworks that address the multifaceted economic and noneconomic factors at play.

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International Energy Agency. 2022. *World Energy Investment 2022*.

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