

Do ASEAN Energy Utilities Have Enough Capital to Transition to Renewable Energy?

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Discussion

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Main Results

- ASEAN energy firms are under-leveraged relative to high renewable European energy firms
- The estimated costs of renewable transition surpass the available debt capacity, implying that the firms from the sample will need to raise significant amounts of equity
- In aggregate, energy firms will need to increase both their equity and debt by more than three times - USD214 billion of new equity and USD227 billion in new debt

Why this is important?

- Investments needed to build climate resilience and accelerate the green transition are substantially out of reach for EMDEs
- Financing for low-carbon and climate-resilient infrastructure alone is estimated to reach at least USD1.55 trillion annually until 2030 (World Bank, 2021).
- The financing needs in the ASEAN are also immense, given the region's vulnerability to climate hazards and rising energy demand
- The total amount of outstanding sustainable debt in the ASEAN-5 is about USD24 billion, while the amount of private equity financing for clean and climate technologies is estimated at about USD265 million (World Bank, 2022) [▶ Charts](#)

- Sustainable debt markets in the ASEAN-5 remain a small fraction of conventional markets (about 2.5 percent of total debt in 2021) - shares range from 5 to 16 percent among the top-20 countries
- Funding for climate and clean technologies represented 0.57 percent of total private equity in the ASEAN-5 during 2017-2021 - in the more developed markets in the East Asia and the Pacific (EAP) region that share is around 7.9 percent (World Bank, 2022)
- A comprehensive climate financing strategy will be necessary to achieve the green transition:
 - ▶ concessional financing
 - ▶ combining public and private capital through innovative financial instruments
 - ▶ appropriate climate policies
 - ▶ international support must complement countries' individual efforts

Methodology in the paper

- Fractional regressions - financial leverage (takes values between zero and one) and various firms' characteristics, based on a training sample of highly renewable European energy firms
- Observed differences between predicted and actual leverage ratios allow to determine the debt capacity that can be used to fund renewable energy projects
- Replacement costs of existing fossil fuel capacity with renewables - by multiplying the solar and wind capacity necessary to replace fossil fuels by the cost per MW to install this capacity
- Numerous assumptions: i) renewable energy mix targets, ii) capacity factors (CFs) of current and new power plants, and iii) the cost to install renewable energy infrastructure

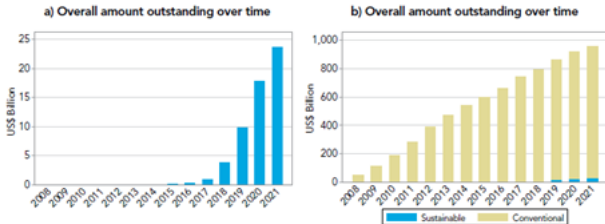
External validity

- The paper provides a nice illustration of the investment needs and the optimal capital structure
- Quantitative results should be taken with a grain of salt (order of magnitude helpful)
- Could we apply the findings of the analysis to a broader context?
 - ▶ cross-section component
 - ▶ time component
 - ▶ the long-term validity of the relationships estimated within a reduced-form model (Lucas 1976)

Bibliography

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Relative Size of Sustainable Debt Markets for the ASEAN-5



Source: World Bank (2022).