FOSTERING GREEN COMPETITIVENESS

Annual International Forum on Economic Development and Public Policy (AIFED)
Growth Strategies in Navigating Geoeconomic Shifts

WORLD BANK GROUP

December 2, 2024

Outline

Part 1 – Role of the private sector

Part 2 – Constraints

Part 3 – Opportunities

Part 4 – Performance

Part 5 – Policy direction

PART 1
Role of private sector in achieving high income status

Accelerating growth

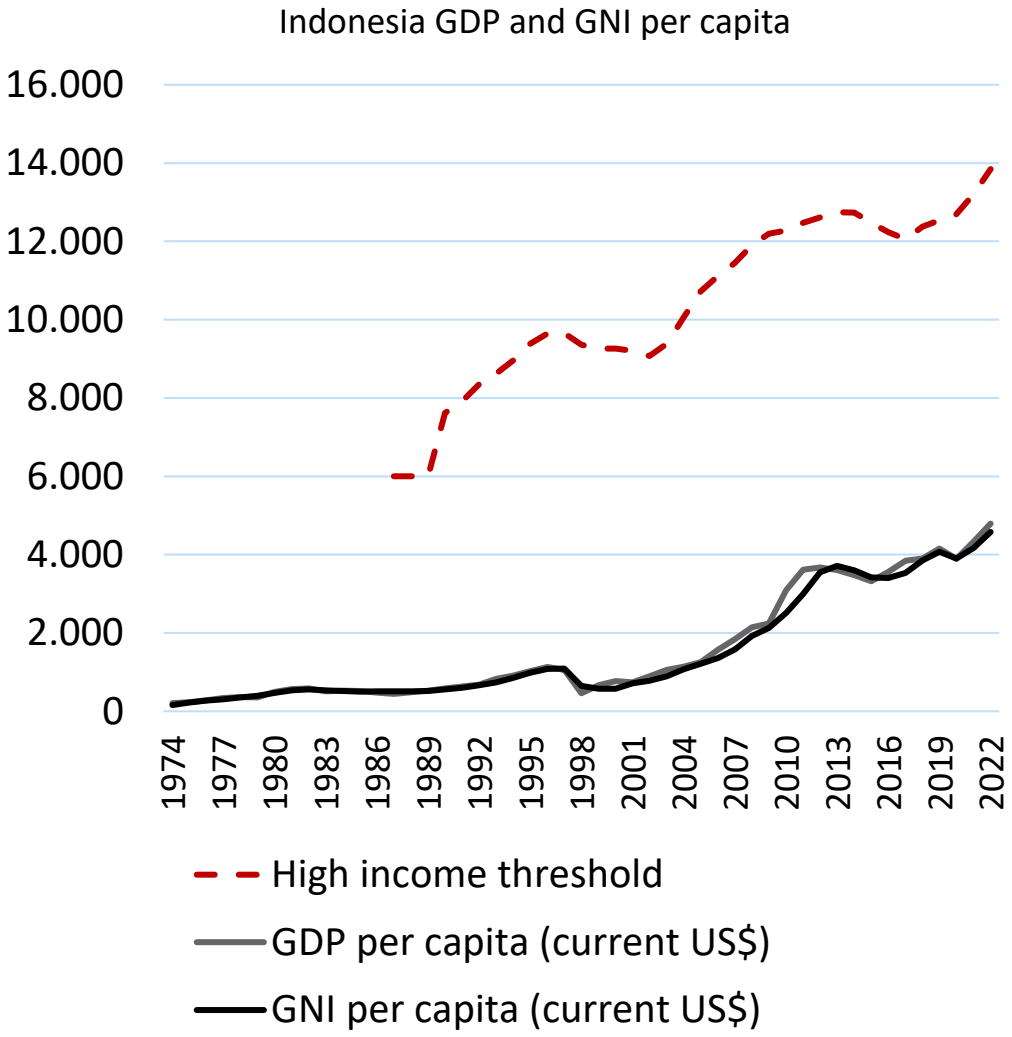
Increasing productivity

Attracting quality investment – 1*i*

Fostering technology adoption – 2*i*

Stimulating innovation – 3*i*

The private sector is the engine of growth and needs a favorable business environment to thrive



Indonesia aims to achieve **high-income status by 2045**. Middle-income countries need long-term economic growth to **escape the middle-income trap**

Two main conditions to achieve high-income in Indonesia:

- ❑ the economy must grow **at least 6%**, and
- ❑ productivity must grow **at least 3%** annually (significantly higher than productivity growth in the past 20 years)

In developing countries, the private sector creates about **90%** of jobs, **75%** of total investment, **70%** of output, and **80%** of government revenue

Productivity and economic growth at these rates require **new business dynamism**.

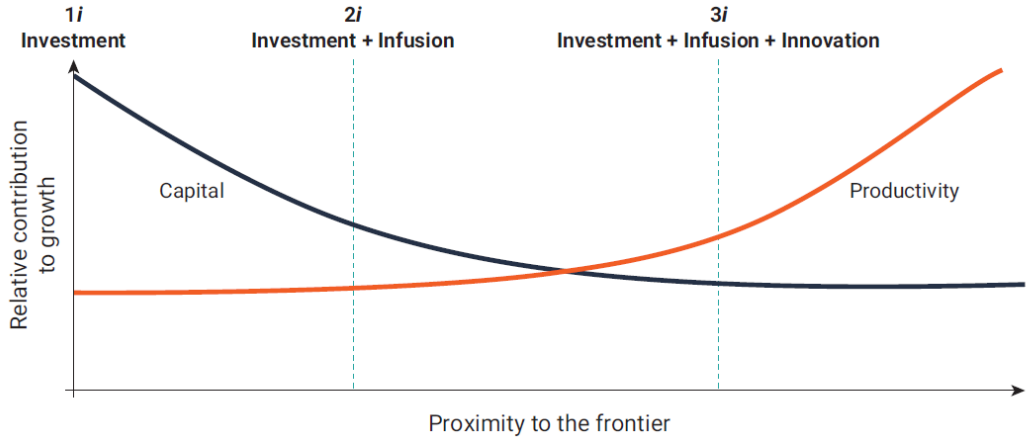
Source: 2024 Business Ready Report; 2024 World Development Report; Ikhsan et al., 2022

3*i* pathway to high-income status requires a productive private sector

To achieve high-income status, Indonesia will need to recalibrate its mix of investment, infusion, and innovation

INCOME CLASSIFICATION	INVESTMENT	INFUSION	INNOVATION
Low-income	Higher priority	Lower priority	Lower priority
Lower-middle-income	Higher priority	Higher priority	Lower priority
Upper-middle-income	Higher priority	Higher priority	Higher priority

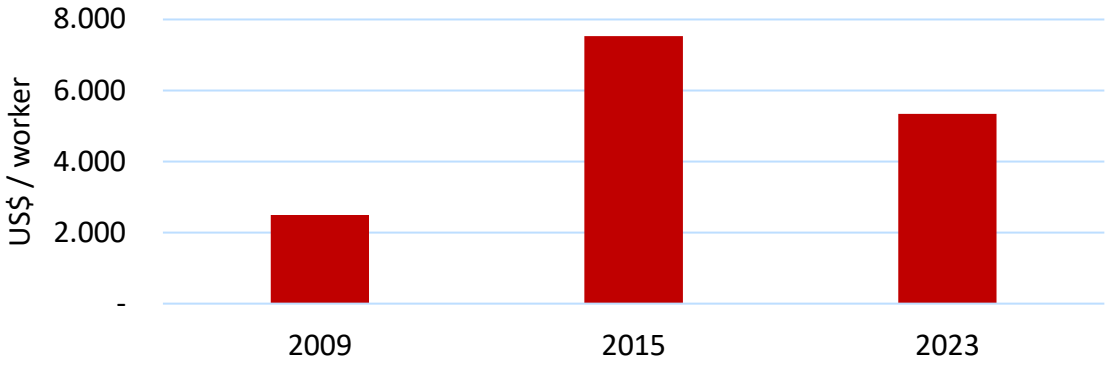
Relative contributions of capital and productivity



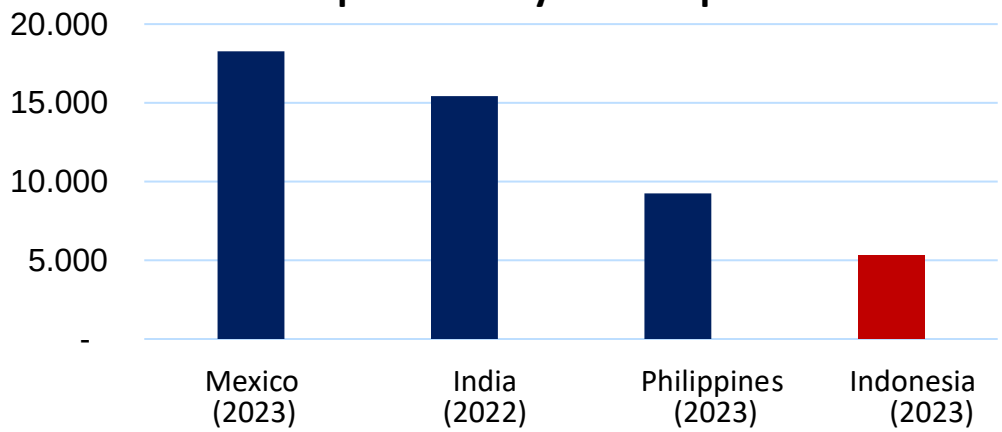
Source: 2024 World Development Report

Average Indonesian firm labor productivity

(2009-2023)



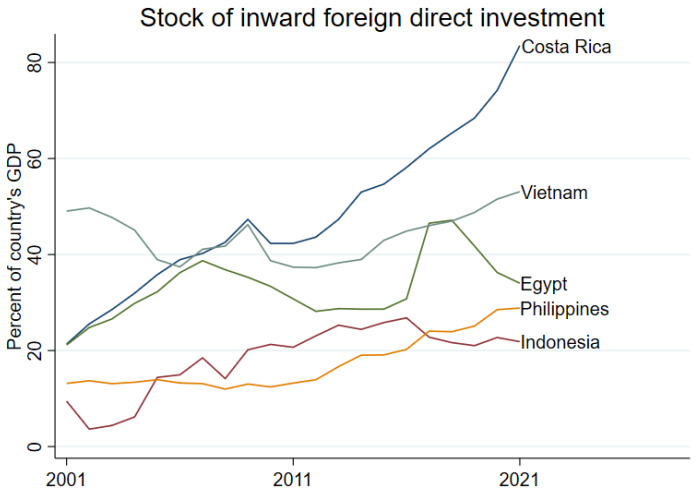
Labor productivity vs. Comparators



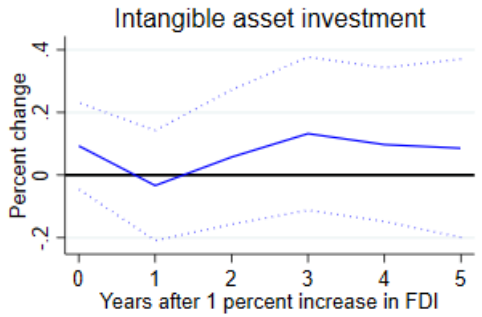
Source: World Bank Enterprise Surveys

1*i* to attract technology and knowledge-based investments to create quality jobs

FDI below its potential as a share of GDP

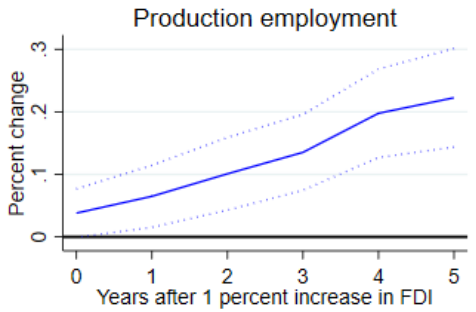


Low growth in intangible assets reflects minimal expenditure on R&D at foreign firms.



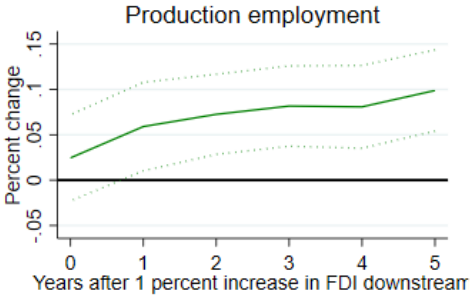
FDI create jobs, but not necessarily jobs with higher wages

Direct effects of FDI on foreign firms

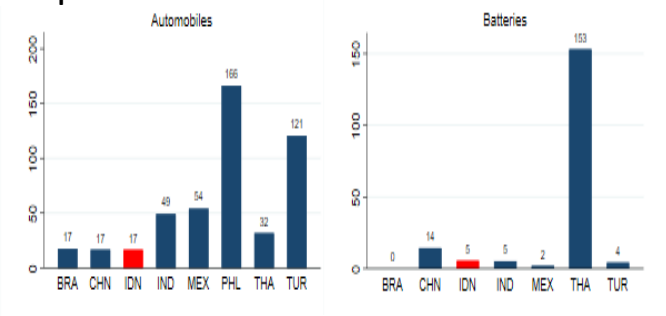


Domestic firms grow through linkages, but don't share productivity gains with workers

Upstream effects of FDI on domestically owned firms



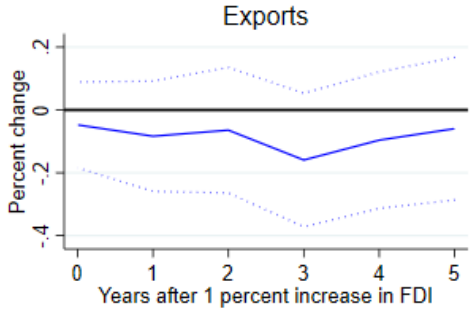
FDI in Indonesia is less intensive in R&D expenditure

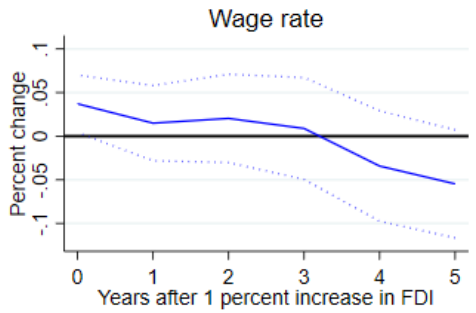


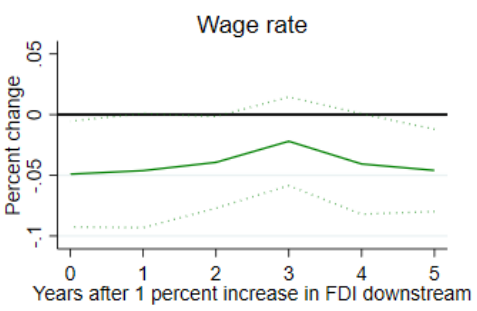
Planned R&D expenditure per dollar of capital investment

US dollars, average 2012-2020

Lack of exports reflects domestic market focus of FDI







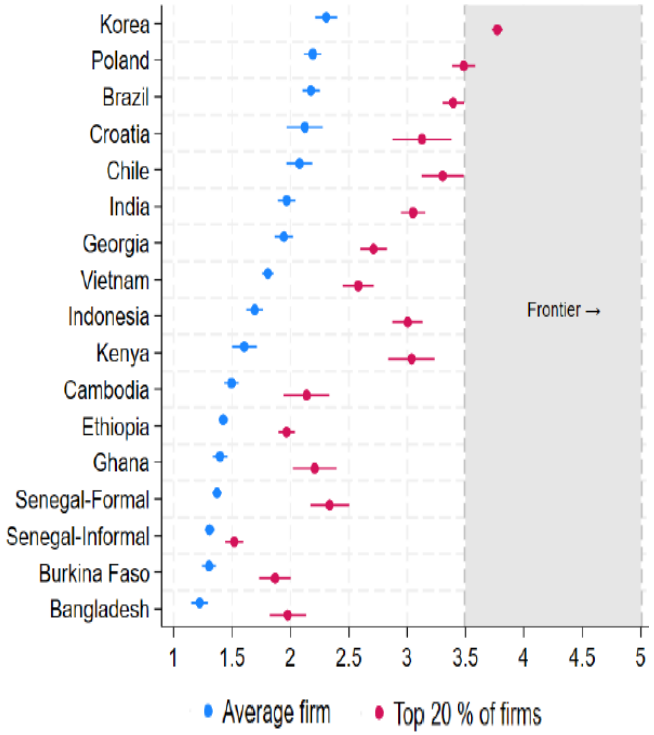
Notes: Dotted line indicates 90 percent confidence interval

Source: Statistik Industri; Indonesia Investment Coordinating Board

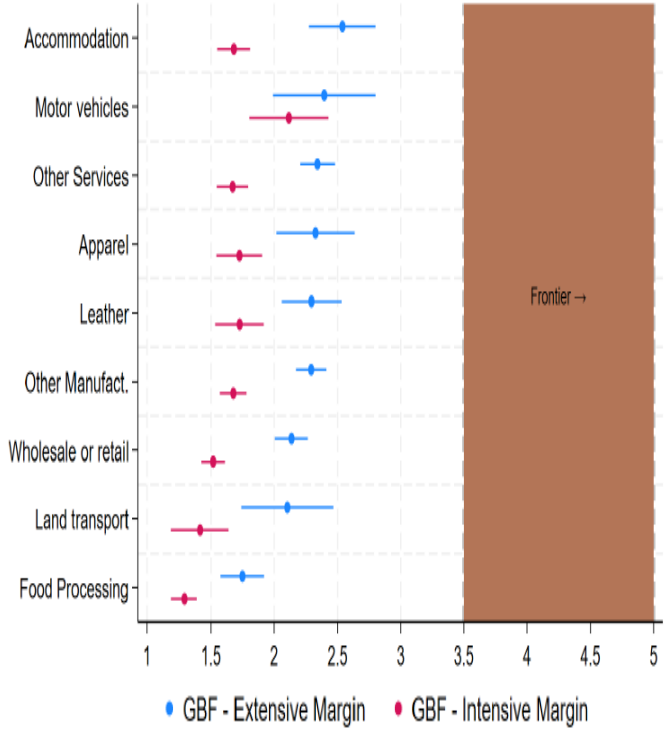
2*i* to foster technology infusion which is low across sectors compared to peers

Indonesia firms adopt a low-level technology for General Business Functions and do not utilize them fully

General Business Function (GBF) index (Manufacturing sector)

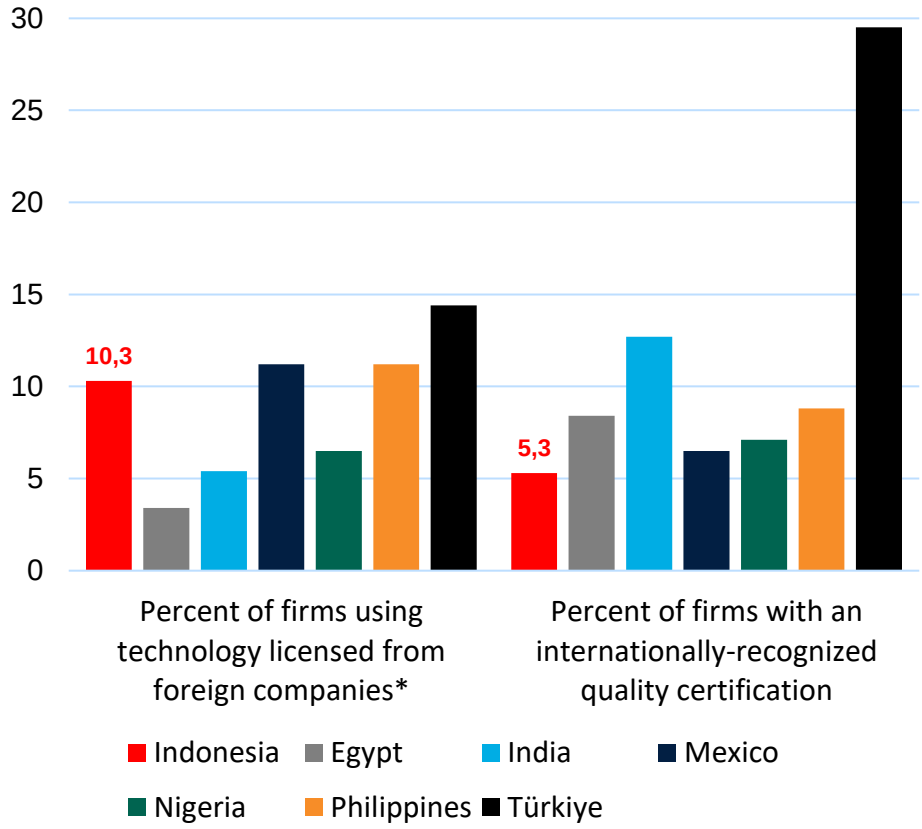


Technology Adoption across sectors – GBFs



Source: World Bank Firm-level Adoption of Technology (FAT) Surveys

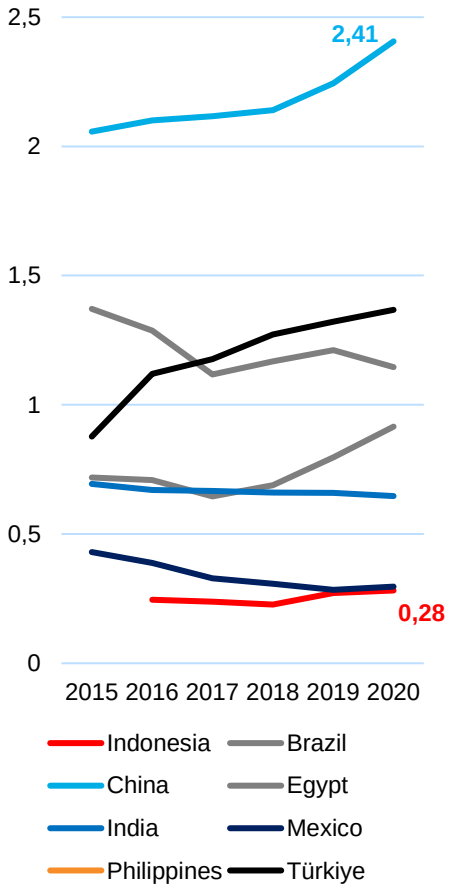
Slow uptake of internationally recognized certification



Source: World Bank Enterprise Surveys

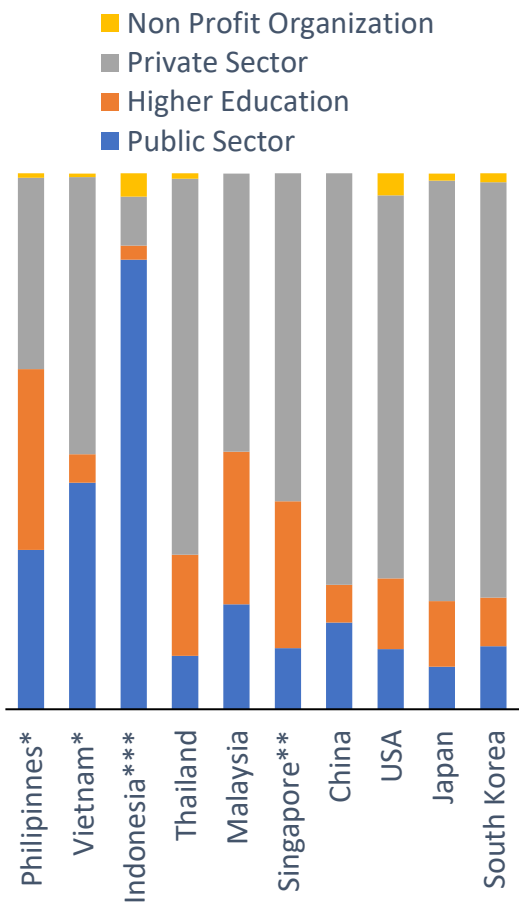
3/ to stimulate private-sector-led innovation

R&D expenditure as a proportion of GDP

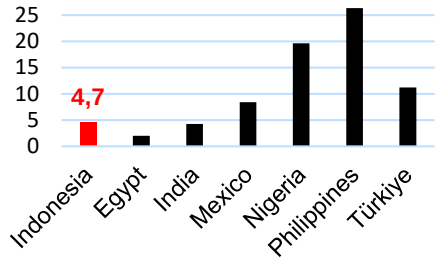


Source: UNESCO; Ministry of Research and Higher Education, 2017

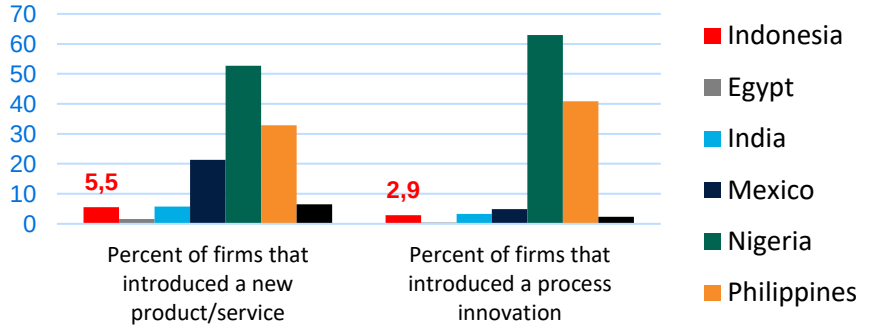
Only 9% of R&D in Indonesia is private sector led, which lag far behind any comparator



Percent of firms that spend on R&D



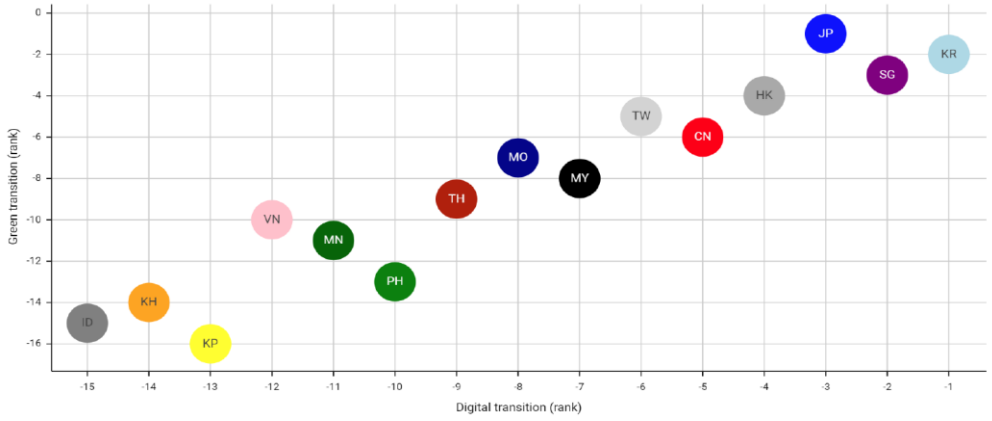
Firms introduce little innovation



Source: World Bank Enterprise Surveys

Economies that are ranked high in terms of the digital transition also tend to be ranked high in terms of the green transition. Indonesia scores the lowest.

Rankings of countries in East and Southeast Asia in the Twin Transition based on the number of patents per capita in digital and green technologies (2017-2021)



Source: World Bank, 2023. "The Leaders of the Twin Transition in Asia"

PART 2
Constraints to green industrial development

A dual economy

Regulatory uncertainty increases the cost of doing business

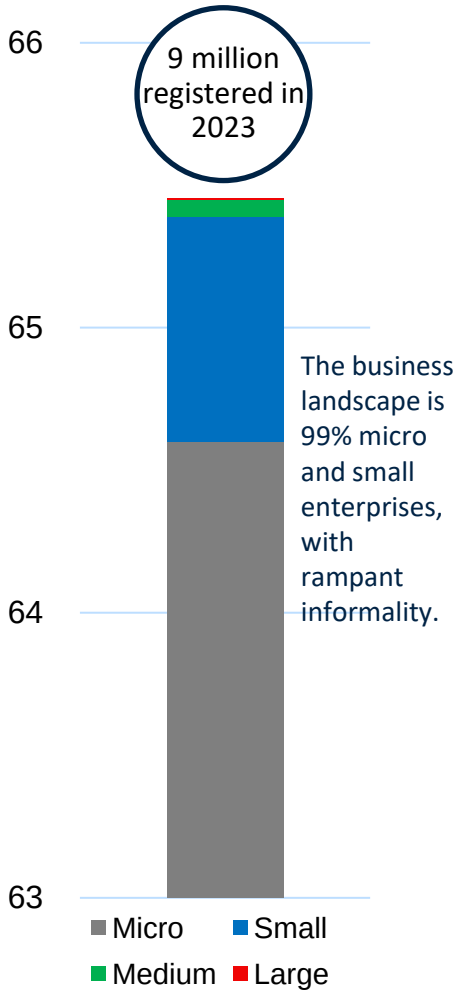
Lack of green investment and finance

Incipient adoption of green technology and management practices

Low competition

Small firms perform poorly, and giant ones abnormally capture most of sales, compared to peers

Number of Businesses (million)
(informal and formal, 2019)

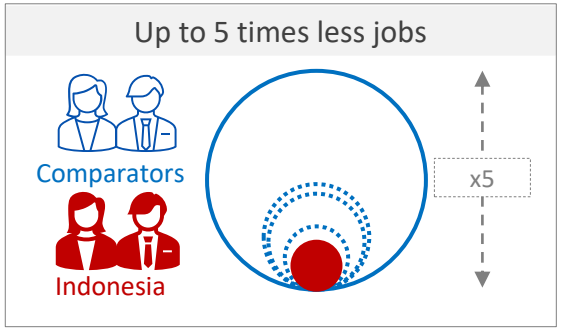


Source: Ministry of Cooperatives and MSMEs

Small firms' performance is lower than peers

Micro & small firms contribute modestly, with less than **1 percent of total output**.

Micro and small firms generate relatively few quality jobs, with only 3 percent of full-time workers.

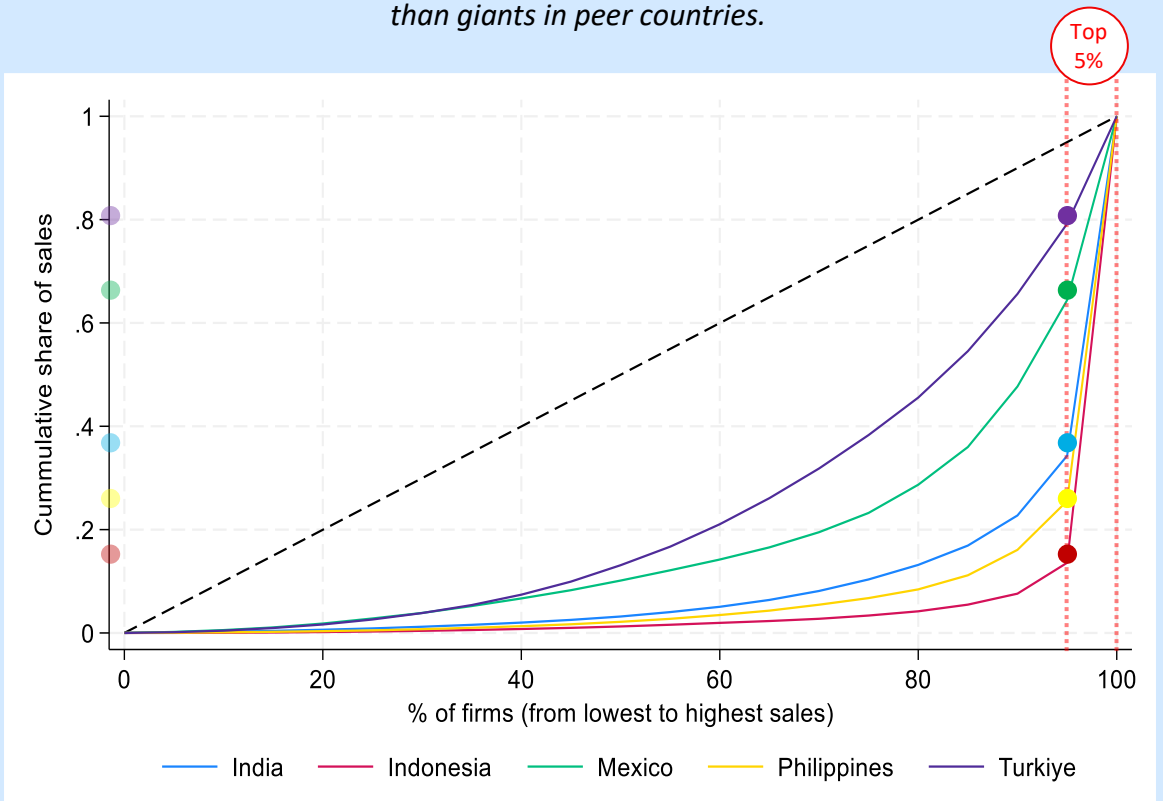


Comparators: India, Mexico, Philippines, and Türkiye

Source: World Bank Enterprise Surveys, manufacturing firms

Indonesia's deviates more than peers, indicating a disproportionate control of sales by few firms.

Indonesian giants capture up to 4.5 times more revenues than giants in peer countries.



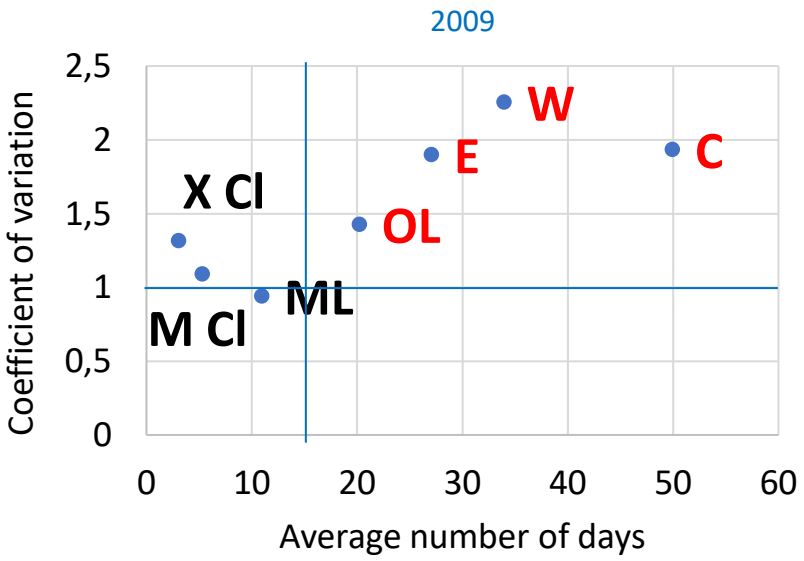
The top 5 percent of firms have dominated Indonesia's manufacturing sector over the past 36 years.

High uncertainty and significant regional heterogeneity in 2023 in complying with government regulation increase cost of doing business

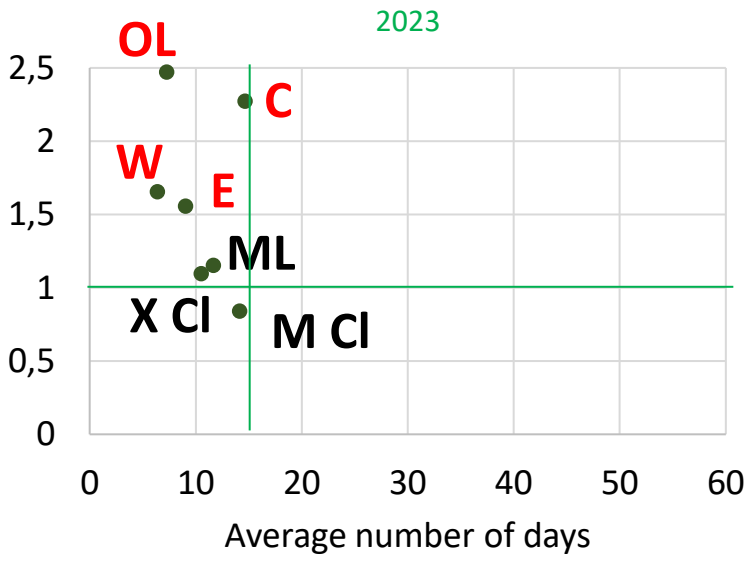
Regulatory efficiency improved until 2015, but momentum slowed recently. Added discretion in regulatory procedures lowers the overall predictability.

Regulatory efficiency and discretion over time for different regulatory interfaces

Four of seven of these business transactions are inefficient and uncertain



The degree of discretion, hence operational uncertainty, increased

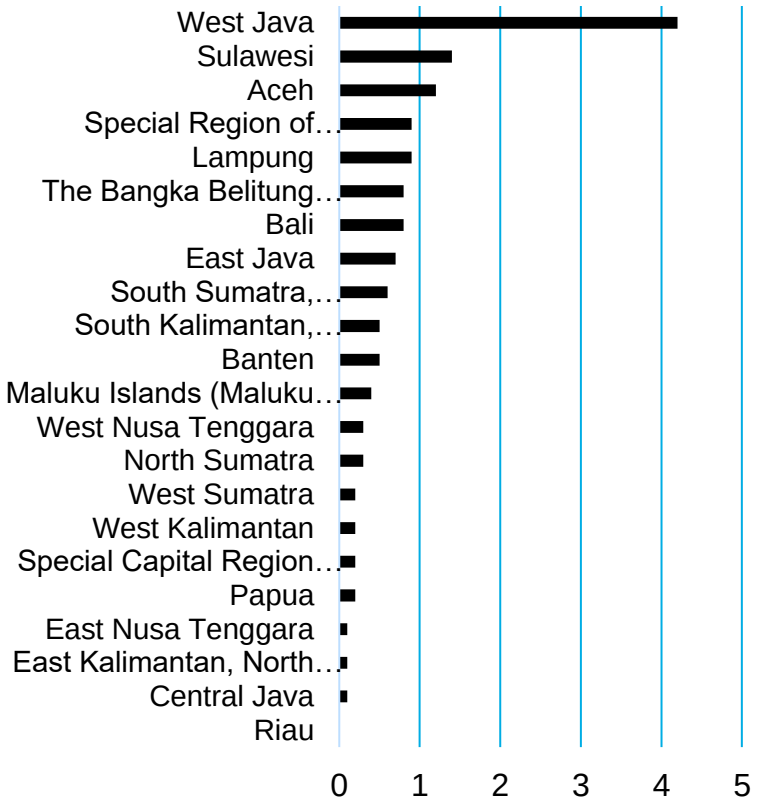


Note: Time taken to obtain electrical (**E**) and water connection (**W**), clearing exports (**X CI**) and imports (**M CI**) through customs, obtaining construction permit (**C**), and operating (**OL**) and import licenses (**ML**).

Source: World Bank Enterprise Surveys.

Cost of compliance hinder business performance.

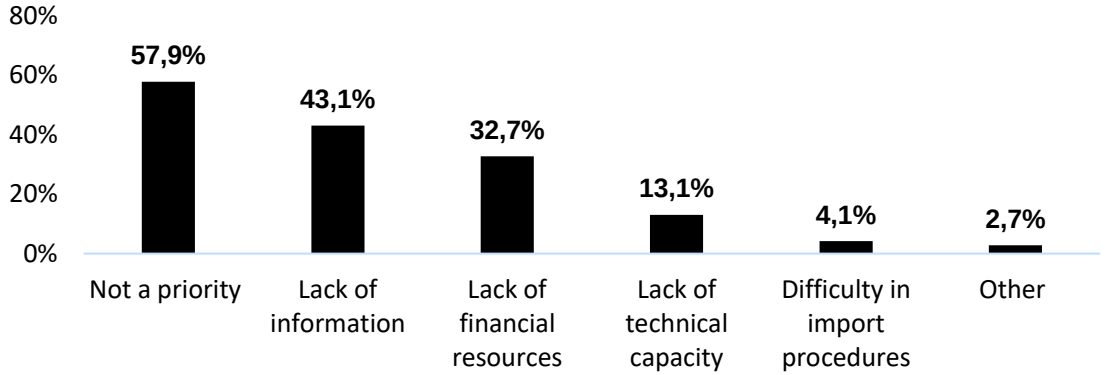
Senior management time spent dealing with requirements of government regulation.



Demand and supply-side constraints to MSMEs' access to sustainable financing

Lack of Investment in Green Technology

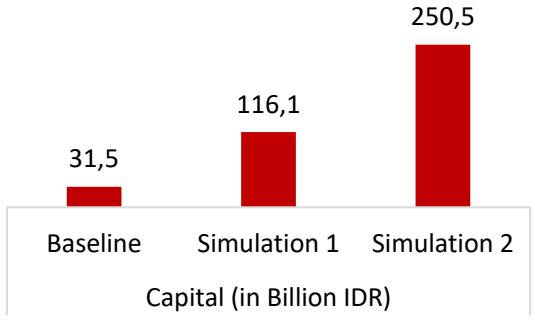
Reasons for firms (lack of) adoption of energy efficiency measure
Reasons for not adopting energy efficiency measures (share of respondents)



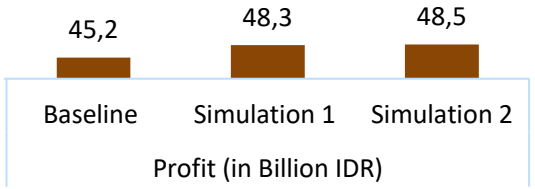
Source: Indonesia CCDR Survey, 2023

Simulated impact of improving energy efficiency on profits

An improvement in energy efficiency requires significant new investment in green capital…



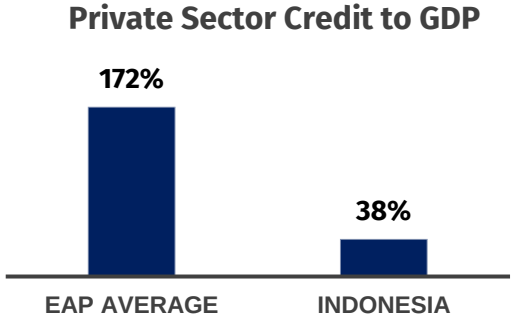
…but this investment would only slightly improve operating profit



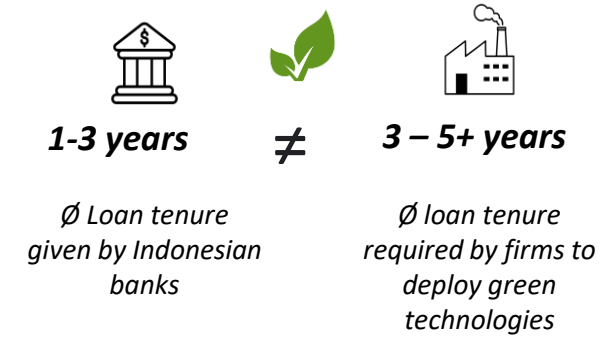
Source: World Bank analysis using Indonesia Manufacturing Statistics 2015

Lack of Green Finance

Due to the shallowness of the financial sector…



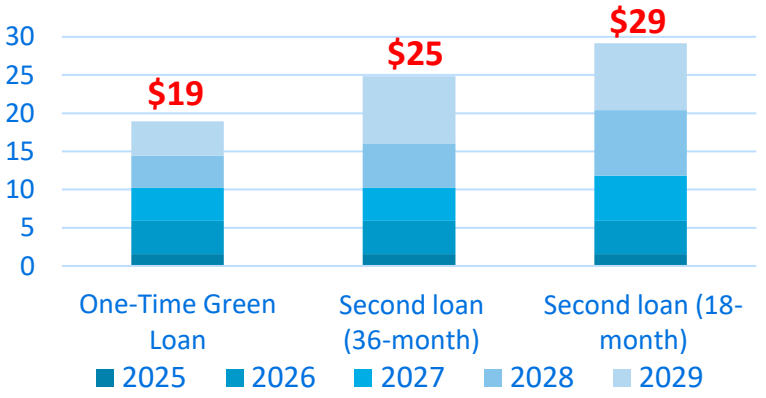
… and its bias towards short-term financing



Green Finance accounts for **only 2% of total banking loans**.

Estimated Green Demand for MSMEs (2025-2029) Taxonomy classification
in USD Billion

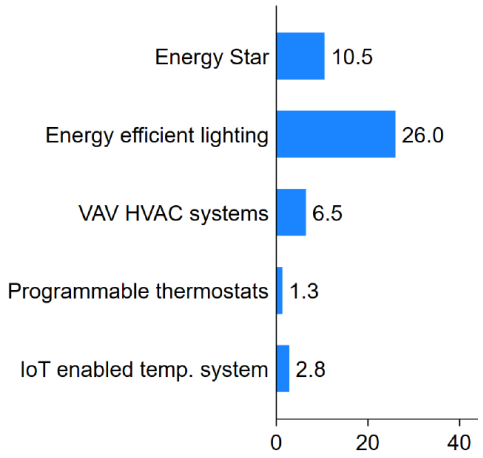
Financial Institutions estimated that they could potentially lend over 50 US$ billion to Green MSMEs by 2030

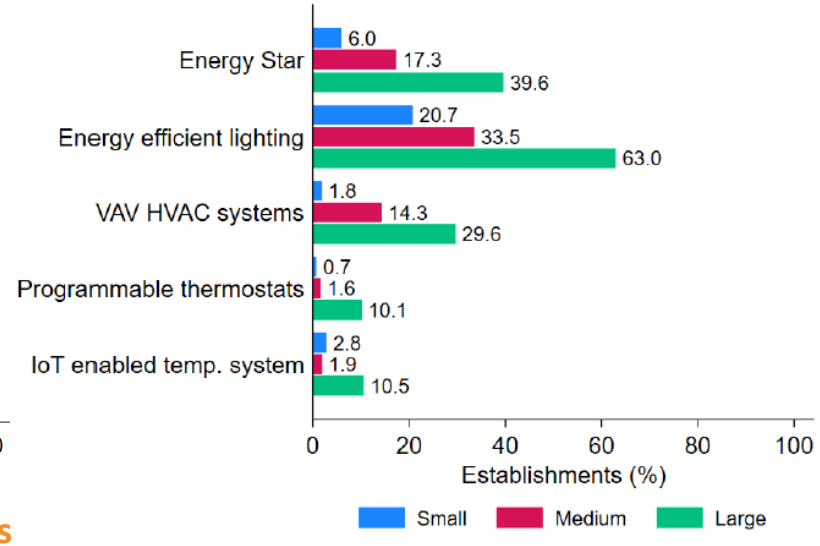


Source: WB team analysis

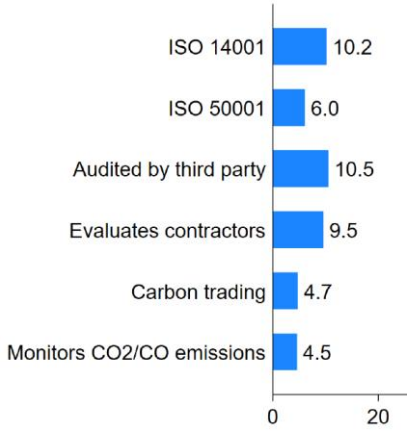
Green technology, and management practices is low among Indonesian firms and compared to their peers

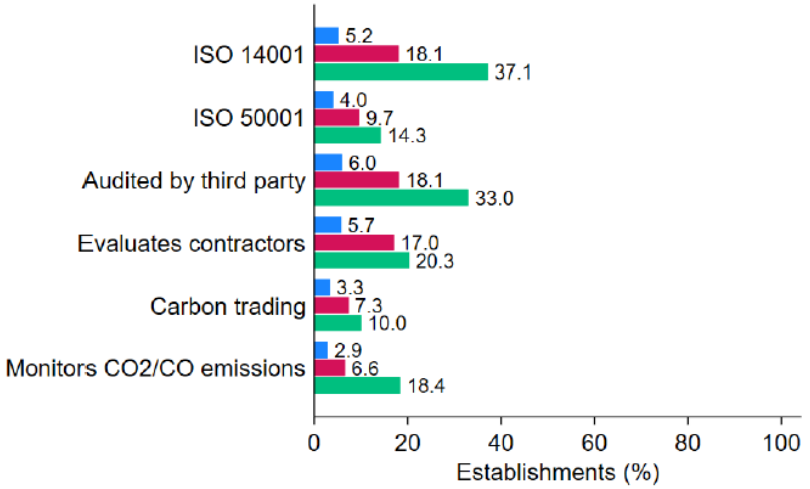
Energy Efficiency Technologies

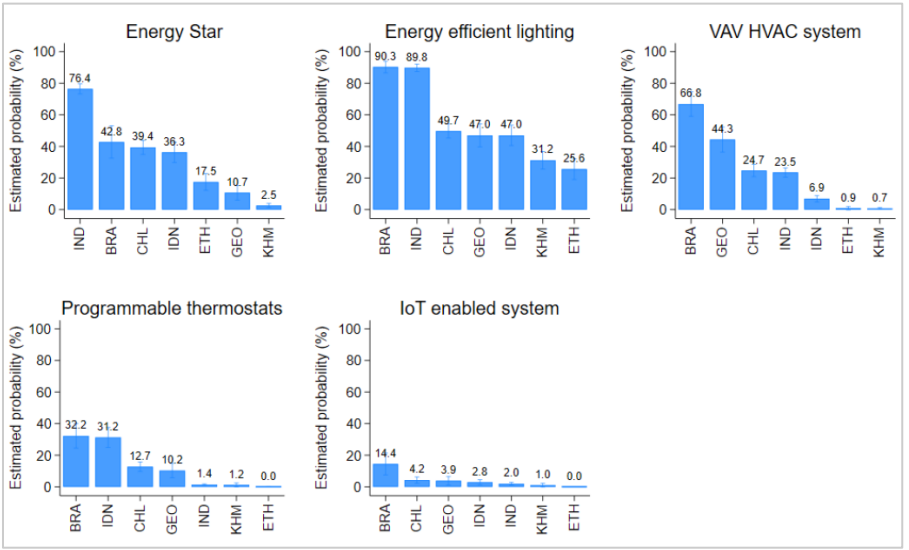


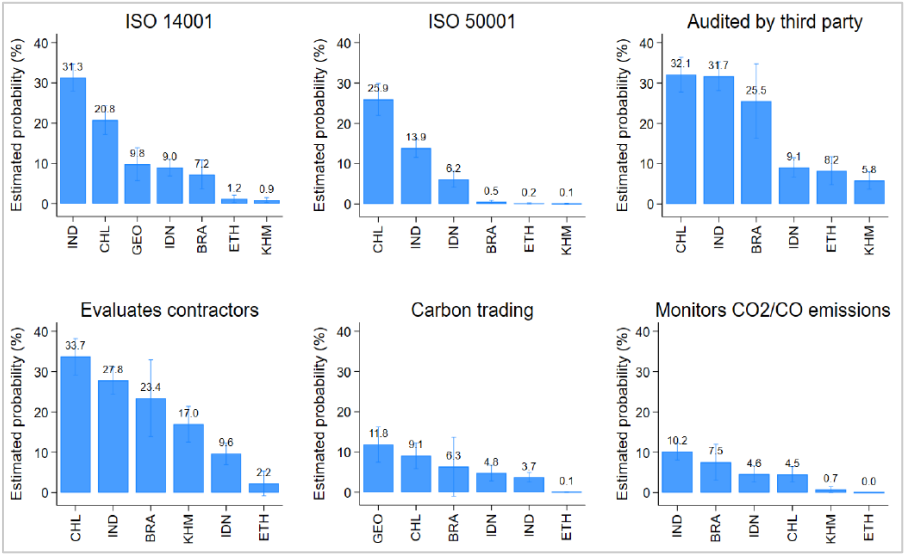


Green Management Practices





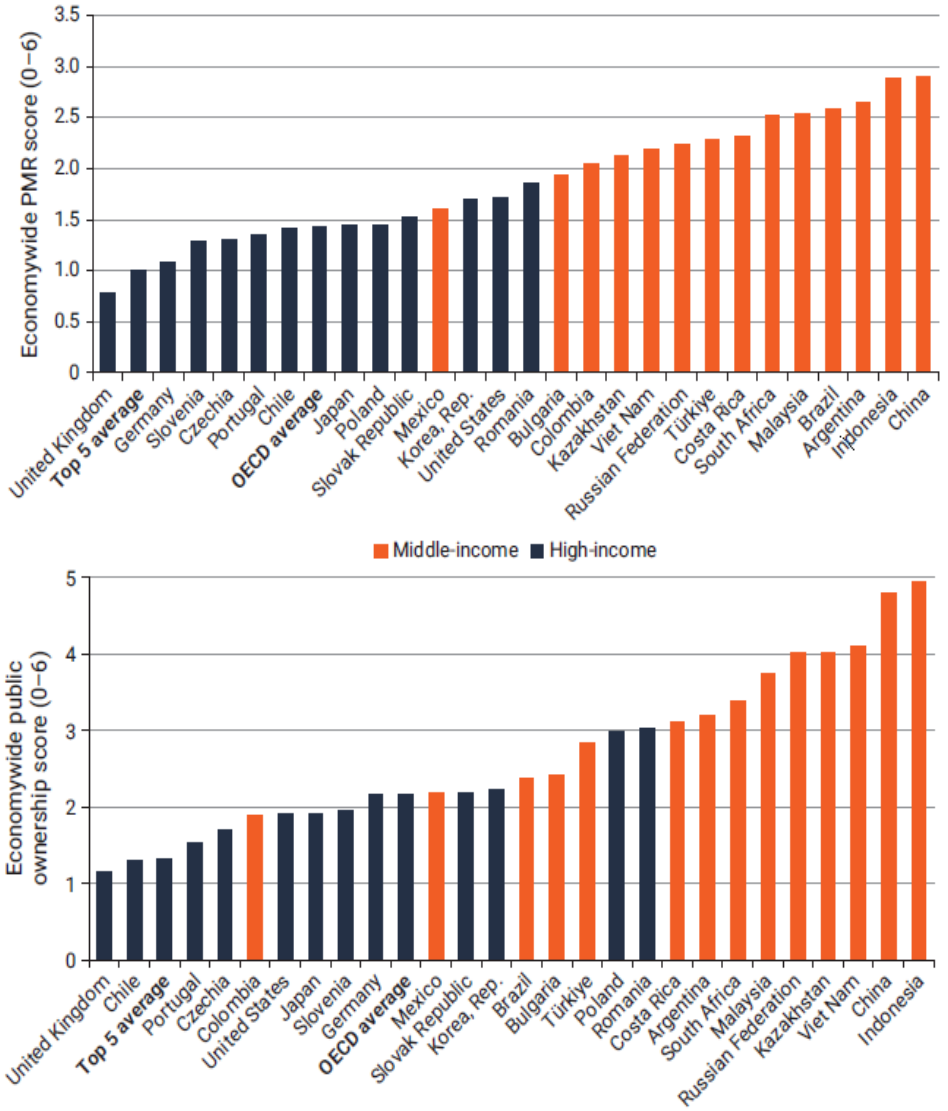




Source: World Bank Firm-level Adoption of Technology (FAT) Surveys; Indonesia (2023)

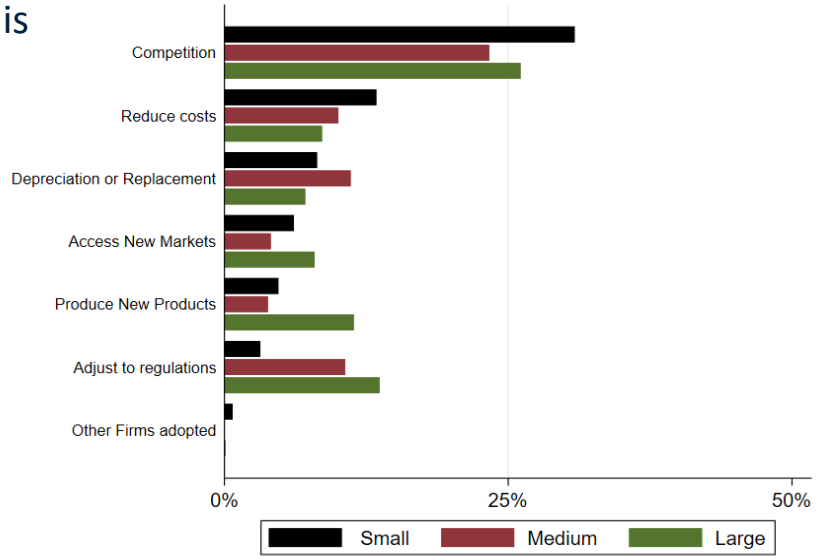
Promoting contestable markets by disciplining incumbency and encouraging creation

Restrictive product market regulations are pervasive

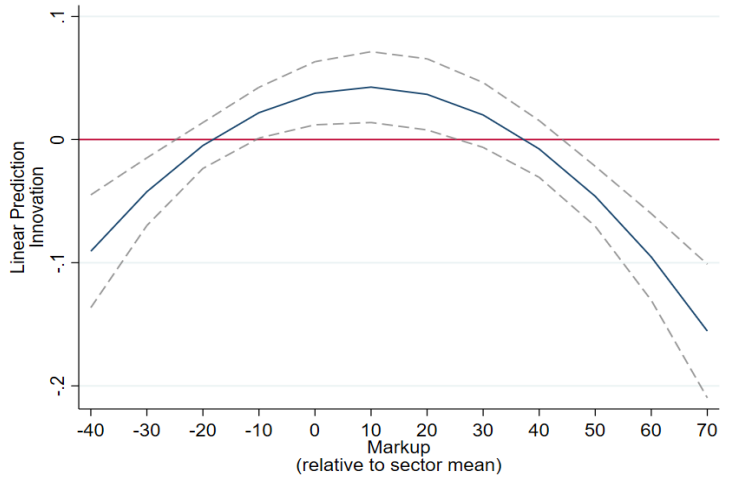


Significant presence of publicly owned enterprises and stifle competition

Competition is the most important driver of technology adoption



Competition and Innovation



Source: 2024 World Development Report

PART 3
Opportunities for greener industrial agglomeration

Cost of climate change

Regional convergence

Untapped green demand

Technology utilization

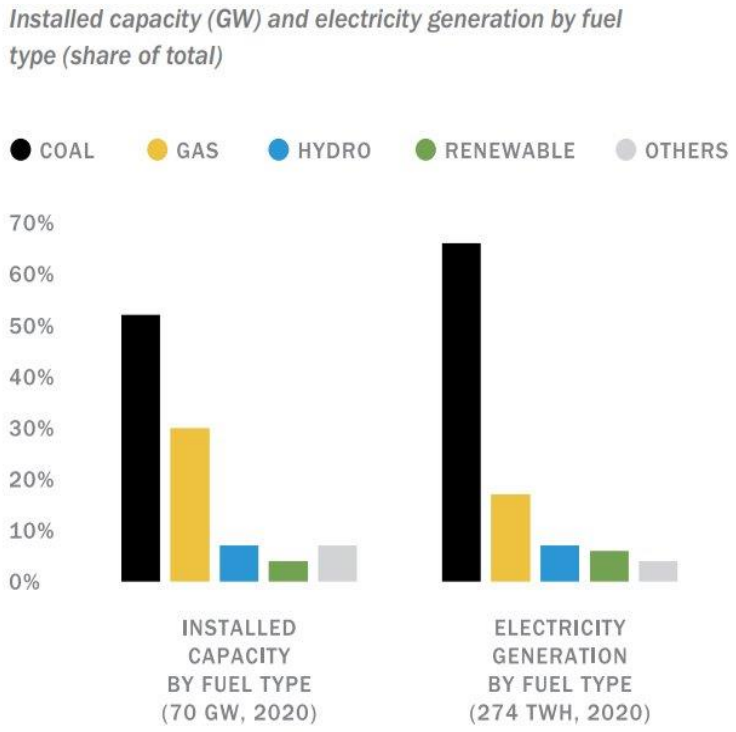
Mutualizing costs

Climate mitigation and adaptation, and vulnerability to climate-related disasters, affect firms' performance which benefit from agglomerating

Industrial agglomeration have important roles in achieving high-income status by 2045.

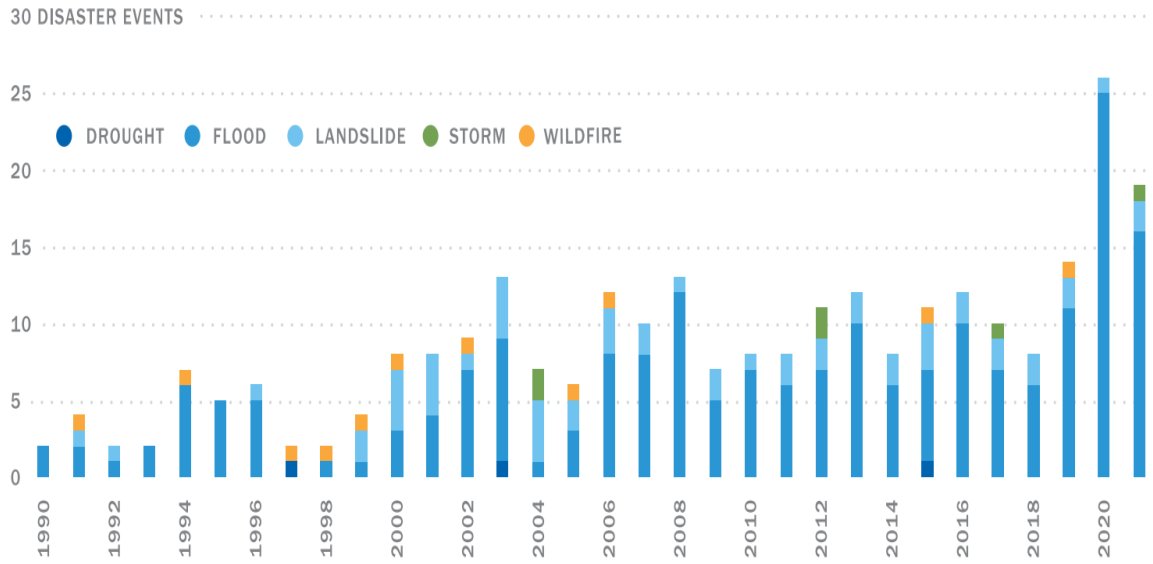
- ❑ Firms within the zones perform better than those outside of zones
- ❑ Risk sharing and pooling
- ❑ Provision of common goods on climate mitigation and adaption infrastructure

Electricity generation has been largely fossil fuel based (~ 70%).



Source: Ministry of Energy and Mineral Resources data (MEMR, 2020); figure compiled by WBG staff.

The number of climate-related disasters has increased over the past 2 decades in Indonesia.



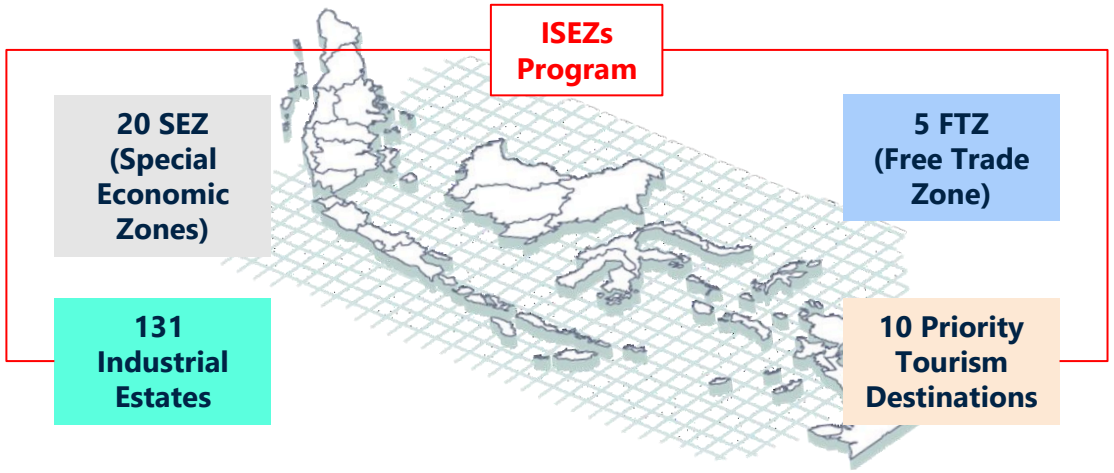
Source: Data from the international Emergency Events Database (EM-DAT), figure compiled by WBG staff.

Industrial agglomeration areas are exposed to these climate-related natural hazards. The impact is already happening in one of the most concentrated industrial areas such as Bekasi, West Java Province.

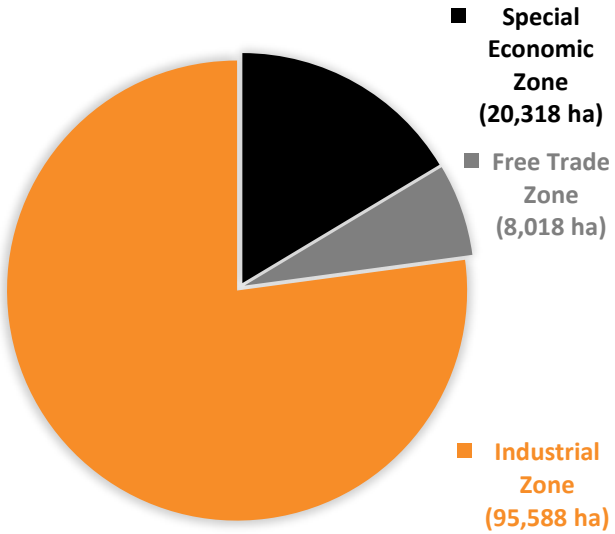
Source: World Bank. 2023. Indonesia Climate Change Development Report.

Agglomeration through the government's Indonesia Strategic Economic Zones (ISEZs) program

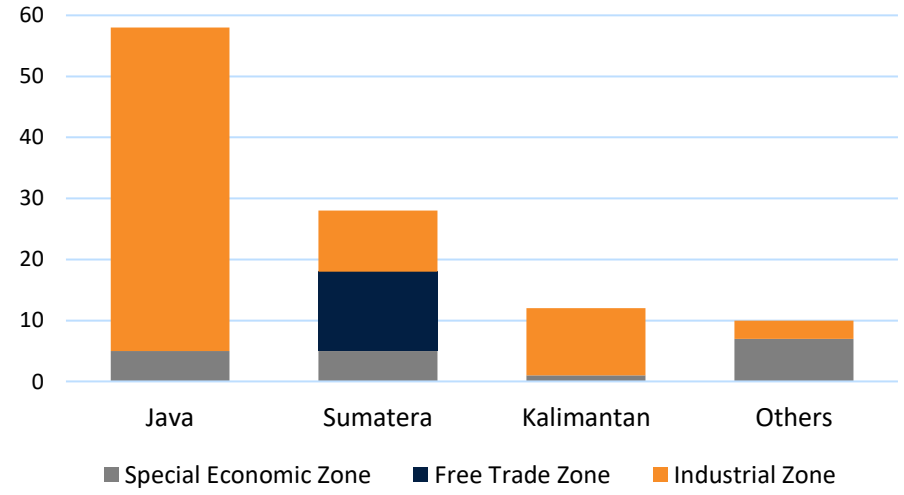
The Government of Indonesia has established several **Economic Strategic Zones** as part of the growth corridor approach that prioritizes the development of growth centers based on regional advantages that can encourage increased added value, increased foreign exchange receipts and/or savings, expanded employment opportunities and economic growth.



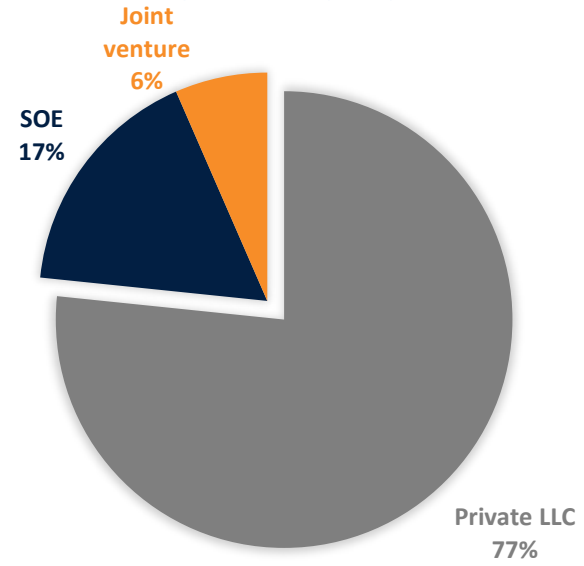
Total Size of the Industrial Area (ha)



Number of Zone Management by Island Groups



Zone Management by Legal Status



Source: World Bank ISEZs; CMEA.

Mismatch between the demand and supply of green loans for MSMEs in Indonesia, could be addressed through agglomeration of green demand

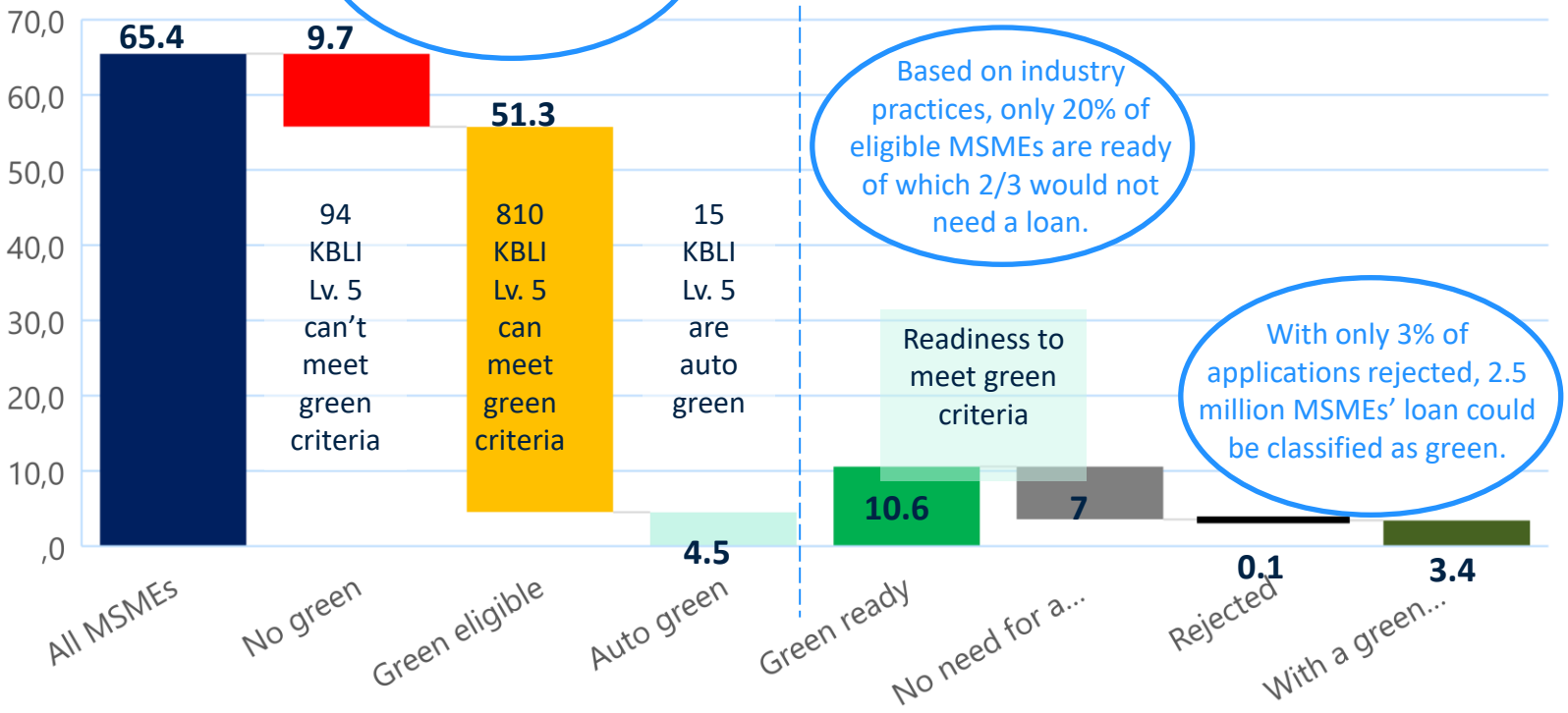
Illustrative Size of the Green MSMEs Market

2025-29 (baseline 2019)

in million

85% of MSMEs operate in a green eligible business sector

Under the Indonesian Taxonomy, while 85% of all MSMEs could qualify as green, only 5% are projected to access green loans.



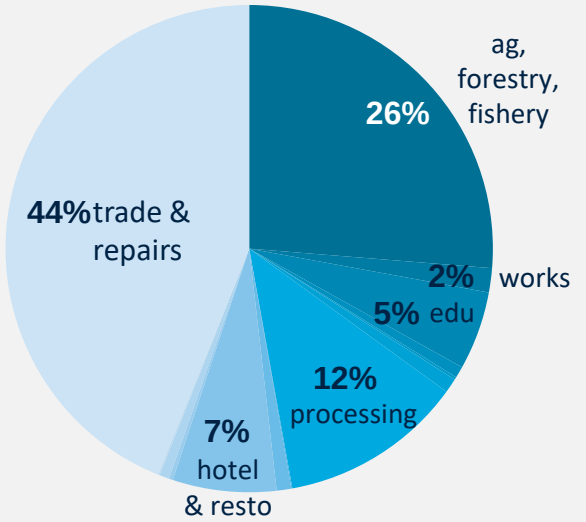
Based on industry practices, only 20% of eligible MSMEs are ready of which 2/3 would not need a loan.

Readiness to meet green criteria

With only 3% of applications rejected, 2.5 million MSMEs' loan could be classified as green.

KBLI Lv. 1 Breakdown of Sectors

in percent



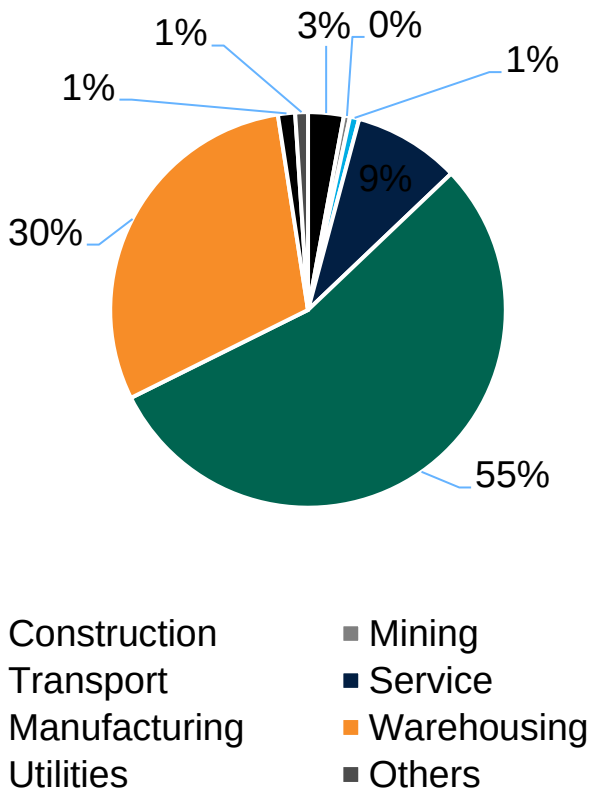
Total MSMEs with a green loan

Green Taxonomy		Average Loan Size	
Micro	3,395,000	Micro	$4,778
Small	< 50,000	Small	$37,716
Medium	< 5,000	Medium	$201,882
Total	**3.4 million MSMEs**		

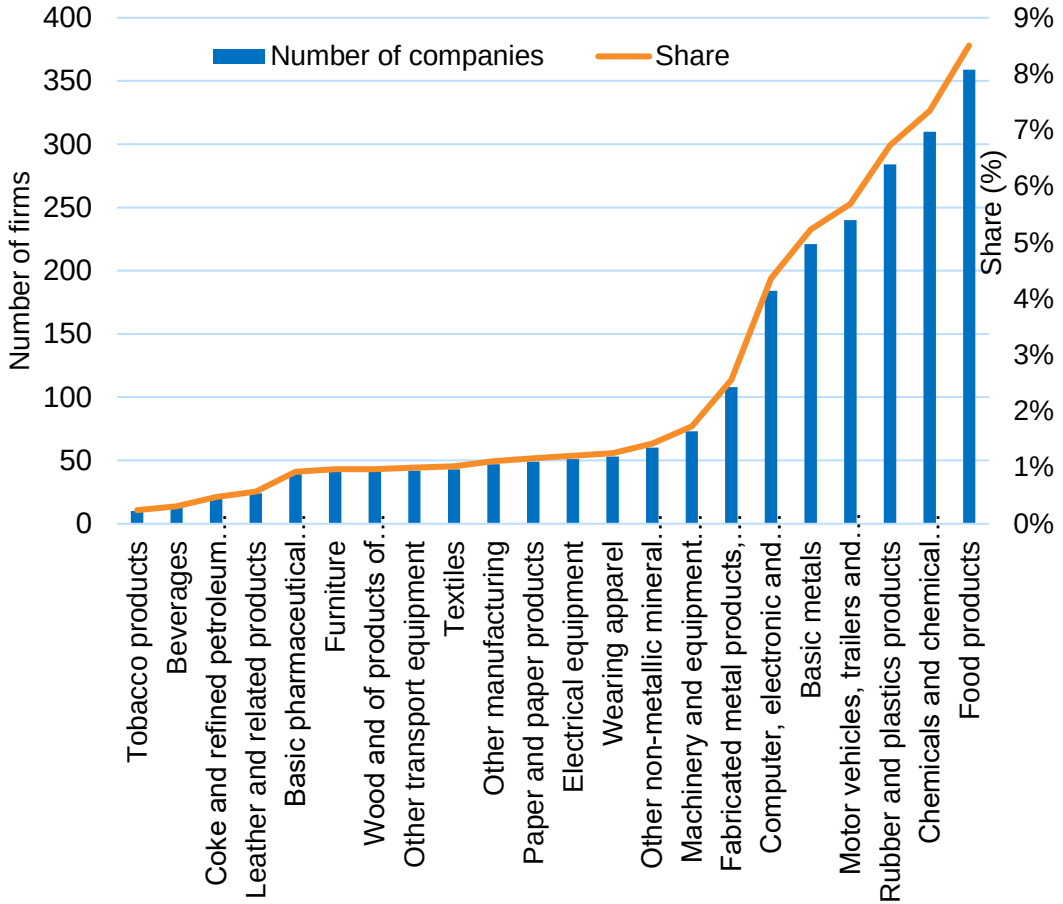
Source: Data from GOI (CMEA, Min. of Cooperatives and MSMEs, Bappenas), OJK (Green Taxonomy), OECD, and World Bank (Enterprise Survey, Firm-level Adoption of Technology Survey, CCDR, KUR analysis), regulatory and industry practices from Financial Institutions and MSMEs perspective.

Most of ISEZs focus on manufacturing, in which technology utilization lags adoption and remains far from the frontier

Share of firm's main sector operational within the zones

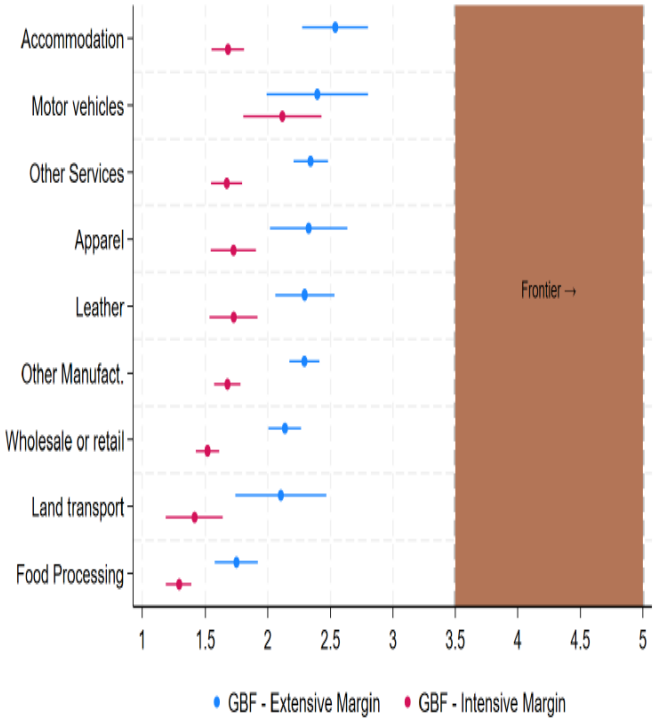


Share of Manufacturing Subsector



Technology sophistication is particularly low in several sectors.

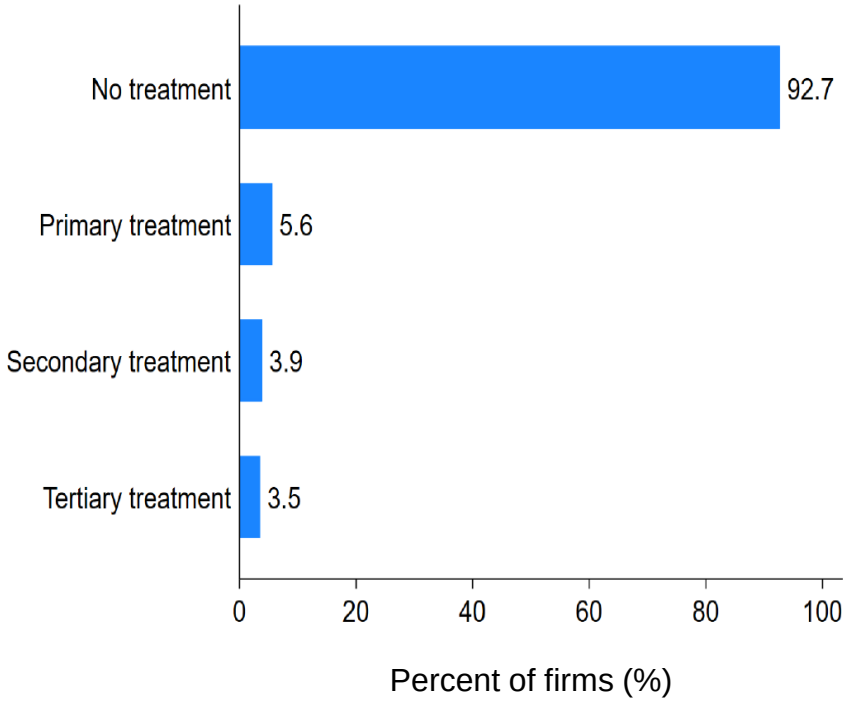
Technology Adoption across sectors – GBFs



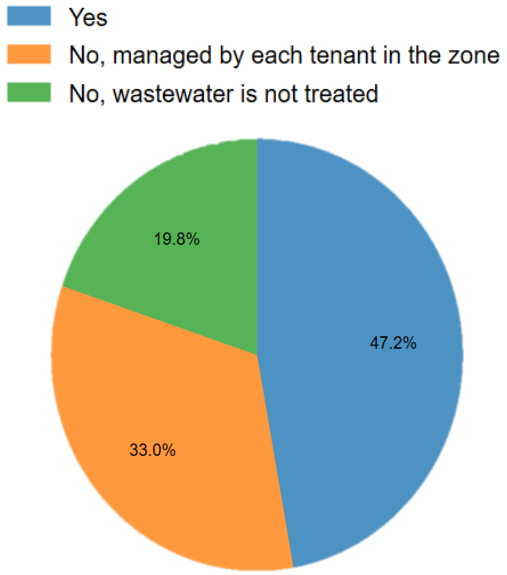
Source: World Bank ISEZs; CMEA; World Bank Firm-level Adoption of Technology (FAT) Surveys. Indonesia (2023).

Only 7% of Indonesian firms treat wastewater, while 47% of industrial parks provide such wastewater services to their tenant firms.

Waste Water Treatment at firm-level in Indonesia (2023)



Does the industrial park management treat wastewater at zone level?



Technology adoption examples relevant through agglomeration

Renewable energy technology

- Ground-mounted/rooftop solar panels in industrial parks and factory shells
- Micro-grid, battery storage/ energy storage system and factory EMS
- Solar water heating/ centralized heating/ cooling technologies
- Energy efficient / smart factory/ green buildings, industry zone facilities, warehouses

Waste, energy and material recovery

- Waste-heat recovery
- Biological wastewater treatment technologies / reuse of sludge and wastewater generated from CETP to generate biogas
- Industrial symbiosis
- CO2 / construction waste recovery and reuse for industrial processes

Source: World Bank ISEZs; World Bank Firm-level Adoption of Technology (FAT) Surveys. Indonesia (2023).

PART 4
Performance of Indonesia's Strategic Economic Zones

A framework for greening industrial clusters in Indonesia

Current performance of industrial clusters in Indonesia

Focus on green performance of industrial clusters in Indonesia

Other constraints to ISEZs

Eco-Industrial Parks initiative

The need for rigorous monitoring and evaluation of the performance and greening of industrial agglomeration in Indonesia

CMEA competitiveness framework for agglomeration

No	Pillar	Criteria
1	**Economic & trade performance**	Assess ISEZs contribution to the economy and trade, as well as estimate the productivity of tenant firms.
2	**Business environment and institutional performance**	Assess ISEZs governance, business, and investment conditions vis-a-vis the local, subnational, and national
3	**Sciences, technology & innovation performance**	Assess ISEZs technological levels
4	**Climate mitigation and environmental performance**	Assess ISEZs mitigation and environmental practices.
5	**Climate adaptation and resilience performance**	Assess ISEZs' adaptation and resilience practices.
6	**Social performance and inclusion**	Assess ISEZs contribution to human capital.

MOI's Eco-Industrial Park (EIP) approach

- Mandate of **Government Regulation 20/2024**: the development of industrial estates aims to enhance efforts to develop eco friendly industries (Ministerial Decree No. 3174/2022).
- Increase the competitiveness of Industrial Estates and regional development and support the implementation of **Global Eco-Industrial Park Program** (GEIPP) Indonesia
- Provide detailed guidelines, engage stakeholders and establish mapping of **national level EIP**, create an enabling environment for EIP development.
- Five **pilot EIPs** in Indonesia.

Source: World Bank ISEZs; CMEA; Ministry of Industry; GIZ; UNIDO.

Overall performance of industrial agglomeration

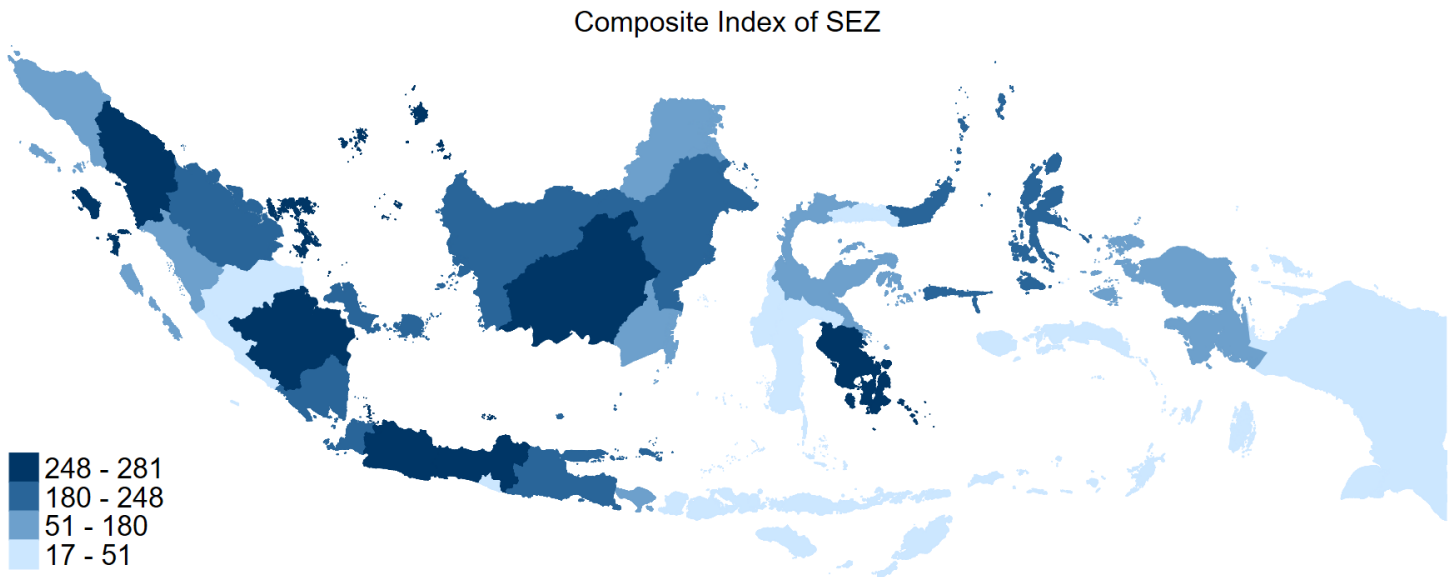
Economic & Trade Performance

70 percent of respondents rely on **government subsidies**. There is a notable lack of structured **supplier development programs** among tenants, indicating **limited spillover** impact on the regional / national economy.

Business Environment & Institutional

Despite good accessibility to transportation infrastructure, most zones (75 percent of zones that responded) **did not attract FDIs** or joint ventures in 2022, which constituted more than half of the investments for those who did.

In general, Java provinces are better than all provinces but North Sumatra



Note:
1. Higher score is better
2. Analysis using Indonesia Zone Assessment (2023) and WBES (2023)

Technology & Digitalization

Zone managers have little access to information on **tenants' R&D expenditures** and technological capabilities, likely reflecting the broader context of low R&D investment and technology adoption in the private sectors.

Social Performance & Inclusion

Significant **gender disparity**, with male full-time employees outnumbering females by three to one. Although occupational health and safety systems are in place, infra for individuals with disabilities is scarce.

Source: World Bank ISEZs; CMEA

Green performance of industrial agglomeration

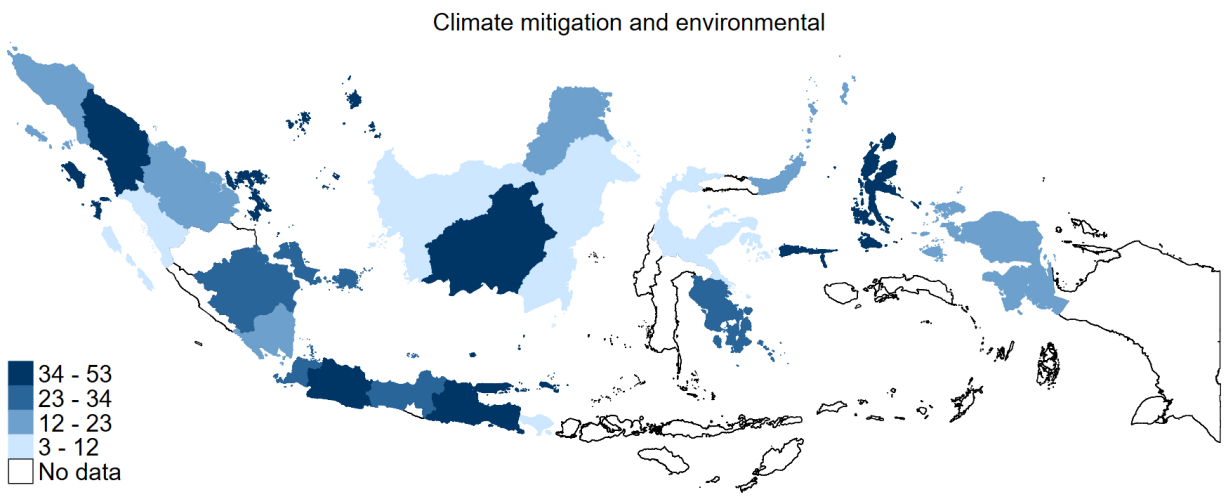
Climate Mitigation & Environment

Zones primarily use state-provided electricity (PLN) which is still largely fossil-fuel based, with **limited adoption of energy management systems** that are compatible with international standards.

Climate Adaptation & Resilience

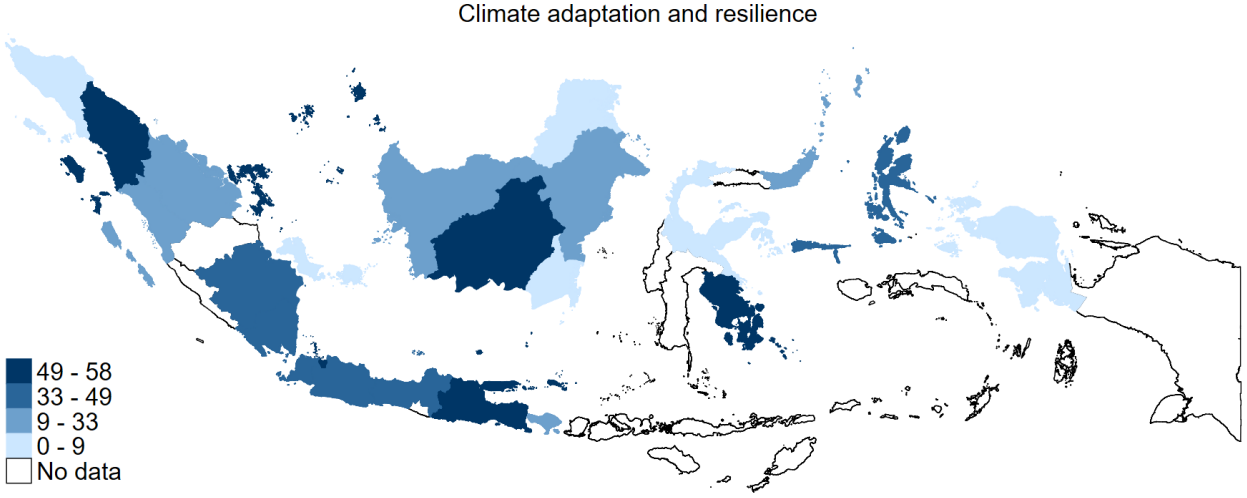
70 percent of zones have climate **adaptation management systems and/or disaster preparedness** plans (e.g., business continuity plans). Still, **few offer early warning systems** (22 percent provide relevant services).

Provinces in Java are generally better in climate mitigation and environment



Note:
1. Higher score is better
2. Analysis using Indonesia Zone Assessment (2023)

North Sumatera and East Java have better climate adaptation and resilience



Note:
1. Higher score is better
2. Analysis using Indonesia Zone Assessment (2023)

Source: World Bank ISEZs; CMEA

Other constraints to industrial agglomeration in Indonesia

Complex framework

Over **60 legal acts are active** in the ISEZ regulatory landscape despite Job Creation law to simplify business investment climate.

A **complex regulatory landscape can increase inefficiencies** in licensing both zones and businesses.

Strengthen licensing and non-licensing services through **one-stop shop (OSS) services**.

Coordination failures

Coordination with **broader policy reform agenda** and regional development plans

-Land right / land use-
-Climate and renewable energy policies, including the new carbon pricing mechanisms and renewable tariff-
-One Map Policy Initiative-

Coordination between **central and regional** / provincial agencies

Trade facilitation

30.8 percent of zone management have post-border custom facilities. The Enterprise Survey shows that Indonesian firms may still face substantial **costs complying with trade** regulations, compared regional peers.

Supply-driven approach

Improving regional income convergence is an important national priority.

However, the lessons from international experience is that SEZs and industrial parks become successful if they are built on **real business demand** and involve the private sector as developers / operators.

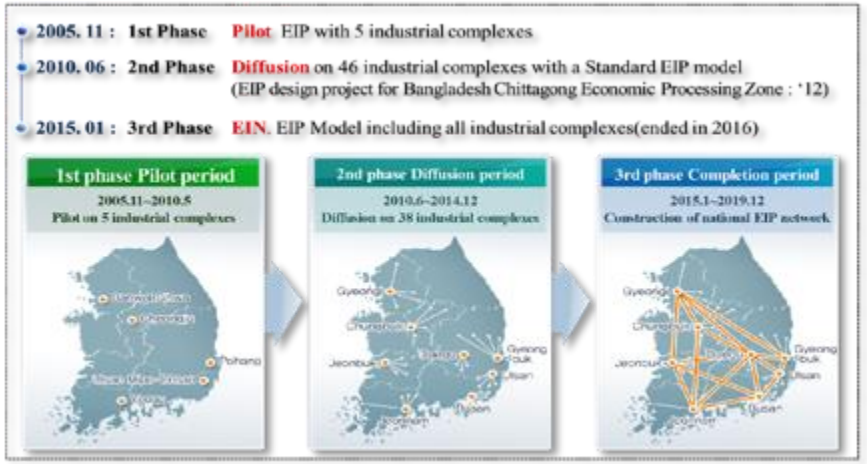
Source: World Bank ISEZs; CMEA

The demand for EIP is increasing rapidly globally and in the EAP region. EAP region accounts for 50% of EIPs. And of this, Indonesian EIPs account for 2.7 percent.

EIPs help <u>reduce and minimize</u>

- Unsustainable use of raw materials, water, energy and chemicals
- Waste through resource circularity
- Greenhouse gas emissions (scope 1, 2, 3) and release of environmental pollutants
- Environmental, economic and social risks
- ESG compliance requirements from buyers and investors -> Export performance improves

Korea's national EIP program



In Korea, through a national program, more than 100 industrial parks introduced EIP measures between 2005 and 2015, **mitigating GHG emissions by more than 2 million tons CO2-eq, 36.8 million tons of wastewater reused/ recovered, and increasing energy saving 383,000 ToE;** and catalyzing **US$761 million** of private investments increasing economic benefits by US$ 2.4 billion (Park et al. 2018).

Höchst Industrial Park, Germany

In Germany, **Höchst Industrial Park, over 500,000 metric tons CO2 emissions are mitigated every year** through various EIP interventions such as improved energy efficiency and increased use of renewable energy sources within the park. It also **generated 6.65 bln Euro worth of investment and 22,000 jobs were created.**

<u>Source</u>: World Bank ISEZs; CMEA; Ministry of Industry; GIZ; UNIDO.

Policy directions relevant to Indonesia

Dos and Don’ts

Recommendations for the ISEZ program

Exports value chains

What, when, and how

Illustrative ETM roadmap

The Dos and Don’ts of industrial agglomeration

Dos

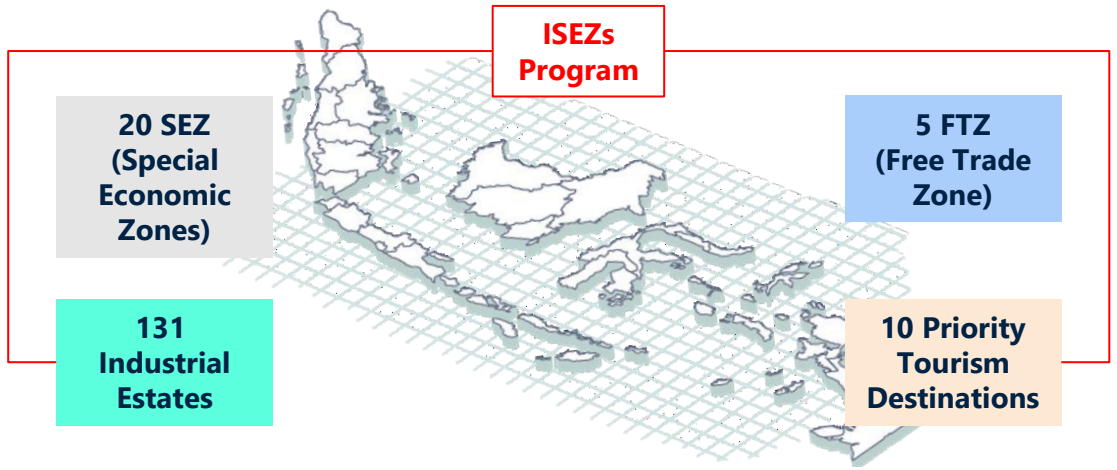
- Ensure good logistics
- Foster a conducive business environment with a reform-oriented mindset (use zone to pilot policy reforms)
- Increase the market contestability through a rigorous market demand assessment and private sector participation
- Maximize the positive spillovers through an inclusive and sustainable approach

Don'ts

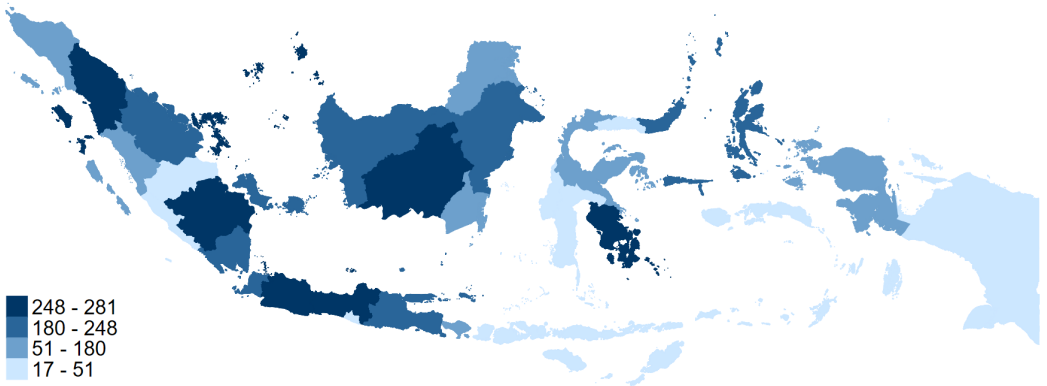
- Lack of strategic planning and demand-driven approach
- Fail to address the critical market and government failures (such as infrastructure and government coordination)
- Poor policy and legal environment and weak implementation capacity
- Inability to mitigate the environmental and social risks

Source: World Bank

Policy recommendations specific to Indonesia Strategic Economic Zones (ISEZ) program



Composite Index of SEZ

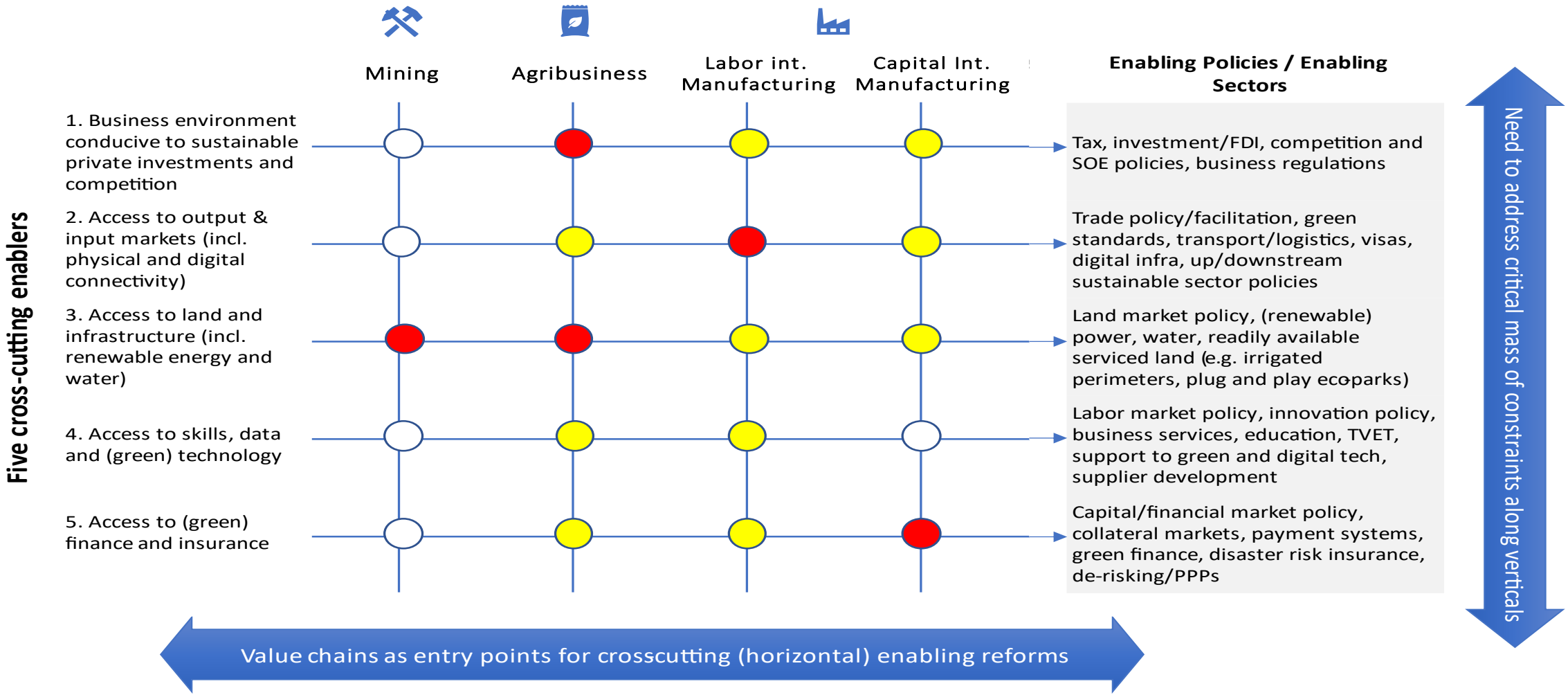


Note:
1. Higher score is better
2. Analysis using Indonesia Zone Assessment (2023) and WBES (2023)

- Streamline and harmonize **regulatory and institutional frameworks** to improve certainty and efficiency
- Streamline and improve **coordination** of ISEZ strategic planning processes
- Consider **private sector demand** in the region
- Improve **incentive schemes** in line with international good practices
- Promote the **technology adoption** (including green and digital technologies)
- Accelerate the **green transition** and address social risks

Source: World Bank ISEZs; CMEA

Four main types of industrial value chains driving exports and the five cross-cutting enablers

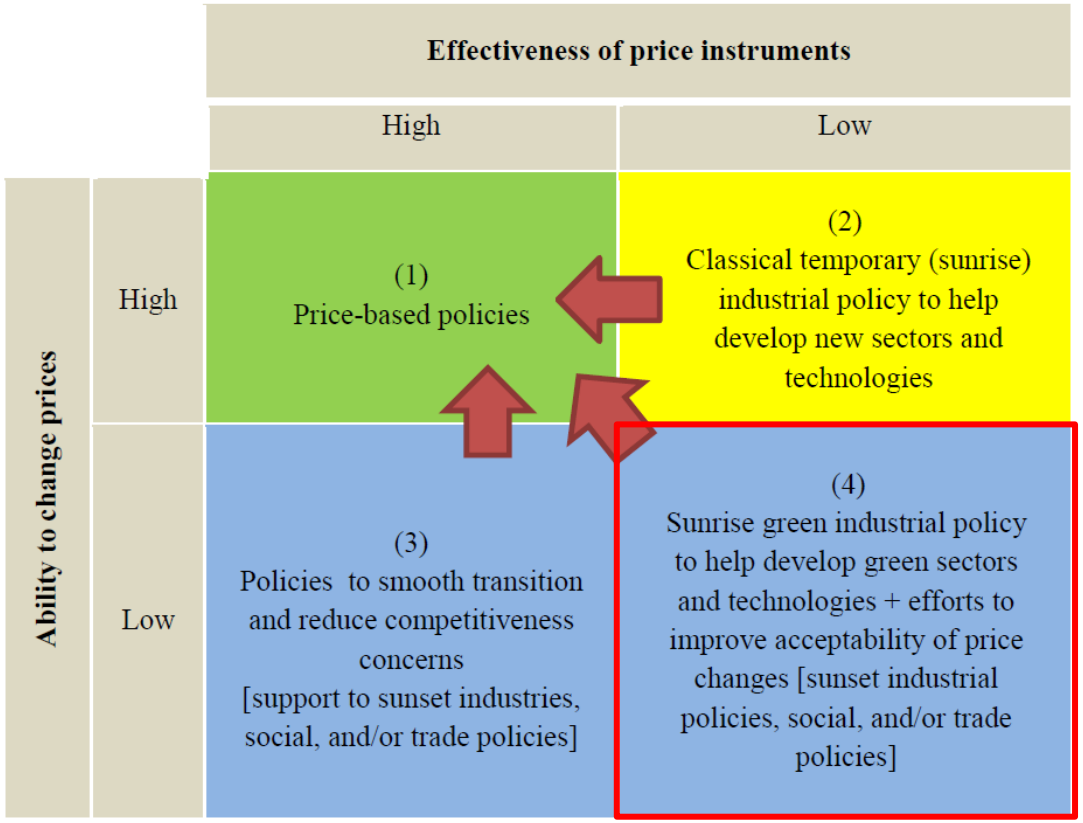


Source: World Bank ISEZs; CMEA

What countries should do at different stages of development, and the when and how of green industrial policies

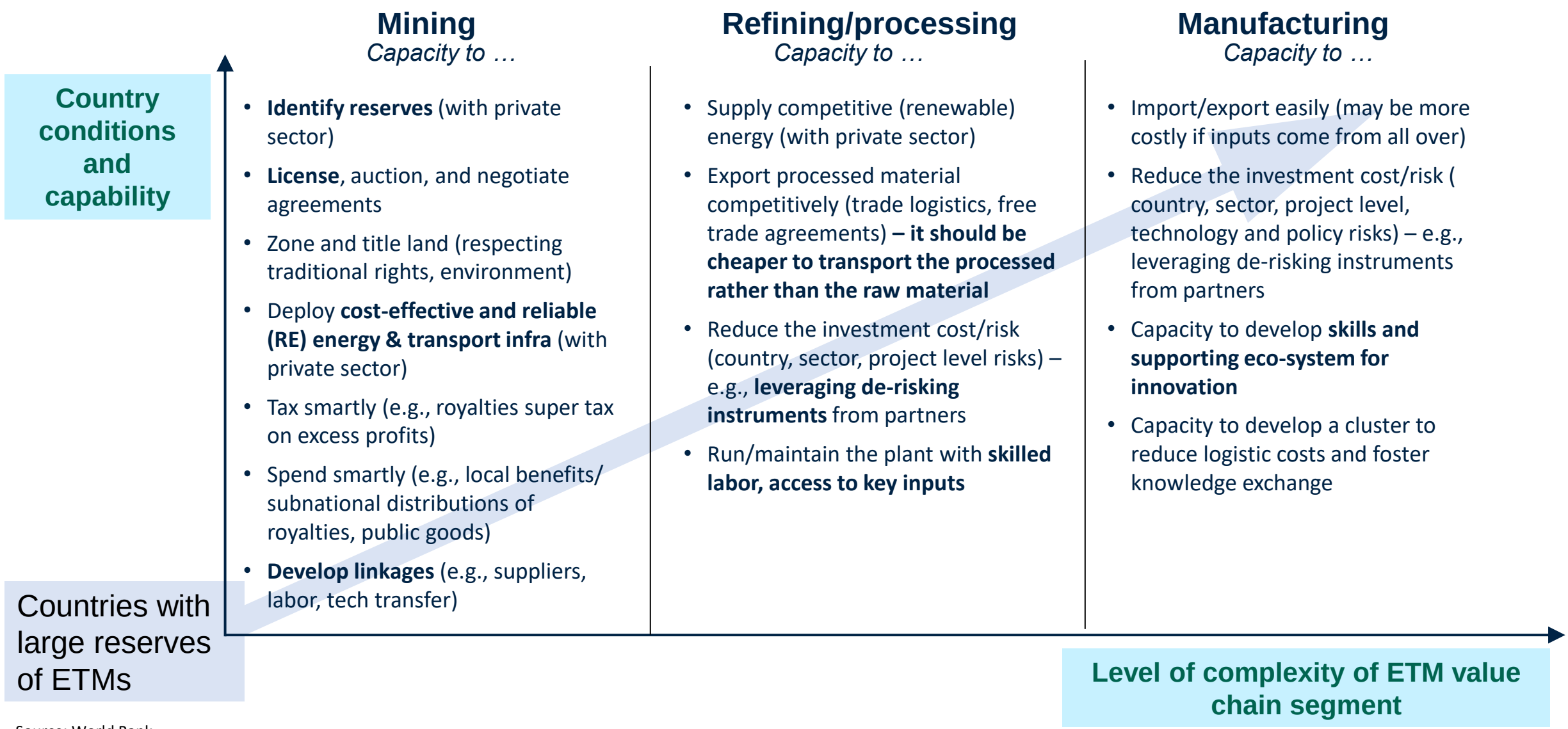
	LOW-INCOME COUNTRIES 1*i*: Investment	LOWER-MIDDLE-INCOME COUNTRIES 2*i*: Investment + Infusion	UPPER-MIDDLE-INCOME COUNTRIES 3*i*: Investment + Infusion + Innovation
Enterprise	• Improve the investment climate to increase domestic and foreign investment.	• Discipline market leaders through integration into globally contestable markets. • Diffuse global technologies with fluid factor and product markets. • Reward value-adding firms to stimulate business dynamism.	• Deepen capital markets and expand equity financing. • Strengthen antitrust regulation and competition agencies. • Protect intellectual property rights.
Talent	• Invest in human capital by broadening foundational skills and improving learning outcomes.	• Discipline elites by providing equal opportunities for women, minorities, and disadvantaged groups. • Improve allocation of talent to task. • Develop links among local and globally leading universities. • Allow emigration of educated workers whose skills are not valued in domestic markets.	• Strengthen industry-academia links domestically. • Expand programs to connect with diaspora in advanced economies. • Enhance economic and political freedoms.
Energy	• Increase investment in expanding access and grid networks. • Reform regulatory frameworks to attract private investment and ensure fair competition.	• Discipline SOEs by hardening budget constraints. • Use international coalitions to encourage advanced economies to ease protection of domestic incumbents. • Aid adoption of energy-efficient practices. • Enhance economic efficiency by reflecting environmental costs in energy prices.	• Lower the cost of capital for low-carbon energy by reducing risks involving technology, markets, and policy. • Increase multilateral finance for very long-term investments.

A framework to determine when and how to deploy green industrial policies

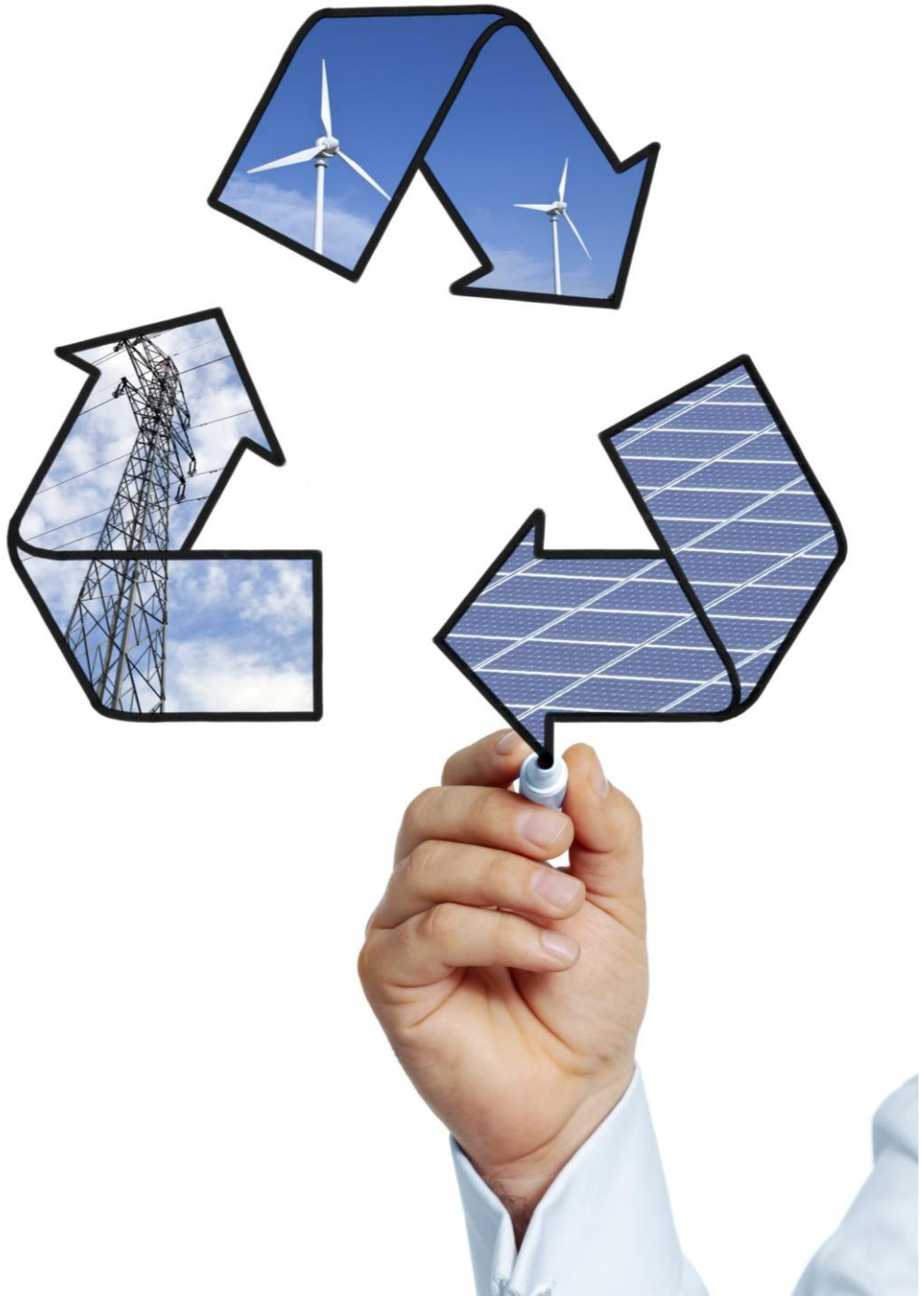


Source: 2024 World Development Report; Green Industrial Policies.

Country roadmap for Energy Transition Minerals (ETM): Countries face changing and increasing policy demands along their value chain upgrading trajectory



Source: World Bank

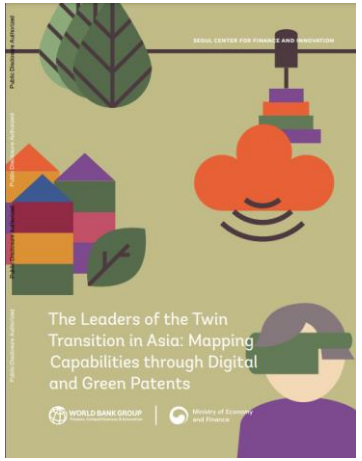


Annex

Recent World Bank publications on private sector development

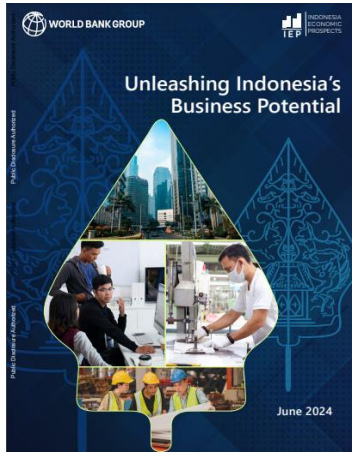
World Bank publications on Eco-Industrial Parks

Recent World Bank publications on private sector development



June 2023

December 2023



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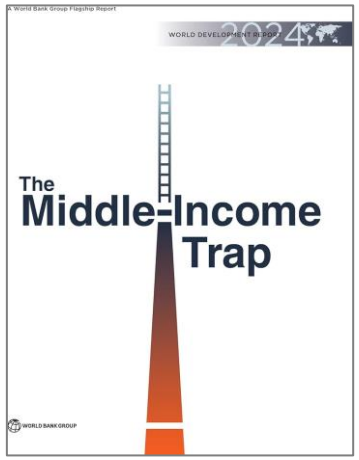

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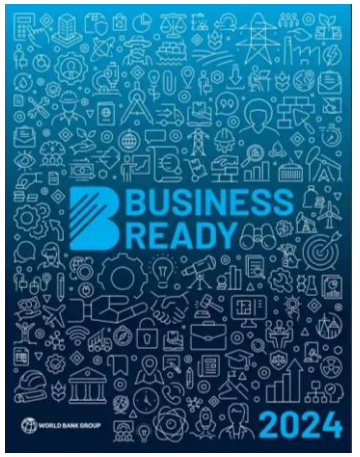

October 2024

World Bank publications on Eco-Industrial Parks