





PGI 2022

## Motivation for the PGI




**Economic growth & PSD**

Vietnam's economic growth and private sector development have been the envy of the world, lifting millions out of poverty and propelling the country to middle income status.




**Private Sector Cooperation**

Requires cooperation from private sector in behavior and financing.




**Climate Change & Pollution**

This economic dynamism has come at some cost. The country is experiencing unprecedented threats from climate change and pollution.



**VCCI's Initiative**

The PGI was initiated to reflect VCCI's concerns regarding environmental protection in Vietnam's growth trajectory.



**Sustainable Economic Model**

Government is aware of these issues and has begun the task of shifting toward a more sustainable economic model.

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## Organization of Today's Talk



The Methodology of the Provincial Green Index



Differences by Country of Origin and Sector



Are Improvements in PGI Correlated with Better Environmental Quality?



## The Methodology of the Provincial Green Index

The Three Cs Procedures, Four Sub-indices, Top 5 Provinces in Overall PGI, and  
Top 5 Provinces in Each Sub-index



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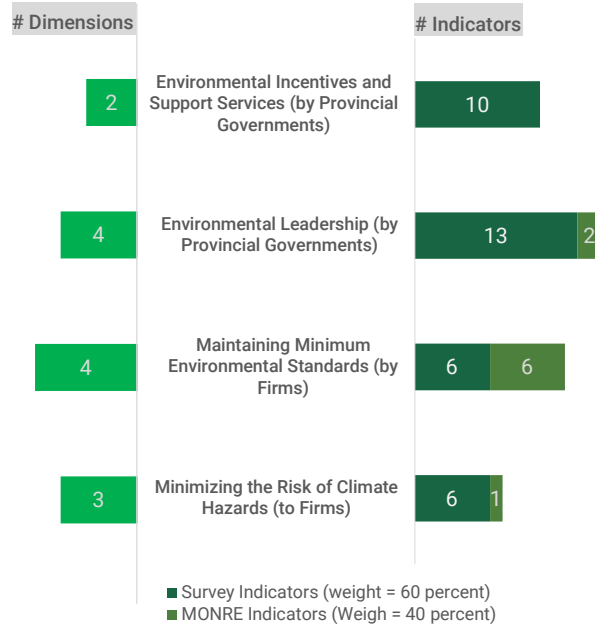
## Methodology of the PGI

Collect, Construct, Calibrate

### 4 Sub-indices

-  Minimizing the Risk of Climate Hazards (to Firms)
-  Maintaining Minimum Environmental Standards (by Firms)
-  Environmental Leadership (by Provincial Governments)
-  Environmental Incentives and Support Services (by Provincial Governments)

Equal Weights in Final PGI: 25%



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### Subindex 1:

## Minimizing the Risk of Climate Hazards

Measures the basic infrastructure and public services provided by provincial governments to reduce the risk to their businesses of pollution and climate change.

We measure these responsibilities in three dimensions

#### #1

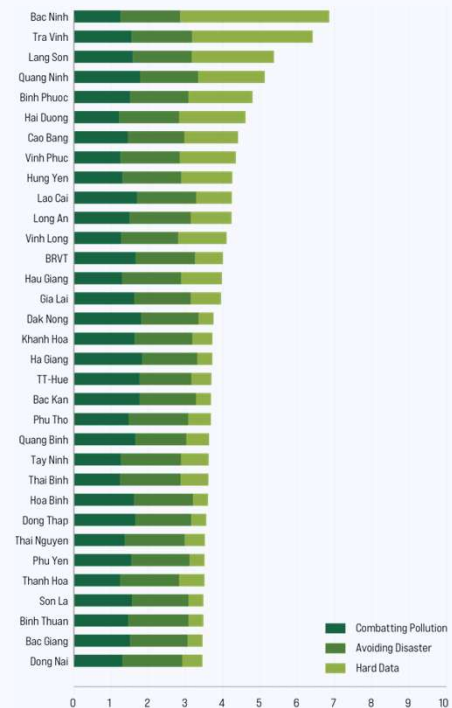
Firm assessments of provincial efforts to combat pollution

#### #2

Efforts to reduce or mitigate the negative effects of natural disasters.

#### #3

Hard data on these approaches (*air quality monitors per 10,000 citizens*)



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## Subindex 1:

## Minimizing the Risk of Climate Hazards

| Indicator   | National Average | Minimum Score | Maximum Score |
|---|------------------|---------------|---------------|
| PGI 1: Minimizing the Risk of Climate Hazards (to Firms). | 3.73             | 3.07          | 6.85          |
| PGI Dimension 1.1. Combatting Pollution                   | 1.38             | 1.06          | 1.83          |
| PGI Dimension 1.2. Avoiding Environmental Disaster        | 1.57             | 1.34          | 1.65          |
| PGI Dimension 1.3. Hard Data                              | 0.78             | 0.40          | 4.00          |
| Environmental quality is good or v. good (%)              | 51.2%            | 27.1%         | 76.3%         |
| No or low pollution (% agree)                             | 30.5%            | 12.2%         | 57.9%         |
| Pollution is no problem (% agree)                         | 37.2%            | 19.2%         | 71.8%         |
| Enterprises cause pollution (% agree)                     | 59.1%            | 28.1%         | 84.7%         |
| Chose location to avoid natural disasters (% agree)       | 0.6%             | 0.0%          | 2.7%          |
| Natural disasters are an obstacle (% agree)               | 6.8%             | 0.9%          | 23.6%         |
| MONRE: Air Quality Monitors per 10,000                    | 0.06             | 0.00          | 0.52          |

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## Subindex 2:

## Maintaining Minimum Environmental Standards (by Firms)

Measures efforts by provincial officials to uphold environmentally safe standards through high quality regulations, reasonable inspections, and enforcement against polluters

The subindex is divided into four dimensions

## #1

Firm assessments of provincial leaders' willingness to hold polluters accountable.

## #3

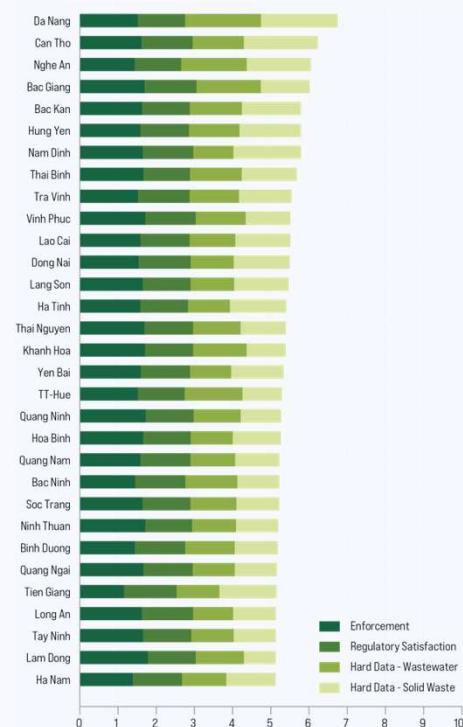
MONRE PEPI assessment of business compliance with wastewater regulations

## #2

Quality of environmental regulation.

## #4

MONRE PEPI assessment of business compliance with solid waste regulations



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## Subindex 2:

## Maintaining Minimum Environmental Standards

| Indicator   | National Average | Minimum Score | Maximum Score |
|---|------------------|---------------|---------------|
| PGI 2: Maintaining Minimum Environmental Standards (by Firms)               | 5.07             | 4.03          | 6.74          |
| PGI Dimension 2.1. Enforcement Against Polluters                            | 1.54             | 1.07          | 1.78          |
| PGI Dimension 2.2. Satisfaction w/ Environmental Regulation                 | 1.28             | 1.21          | 1.41          |
| PGI Dimension 2.3. Hard Data - Waste Water                                  | 1.16             | 0.51          | 1.99          |
| PGI Dimension 2.4. Hard Data - Solid Waste                                  | 1.09             | 0.20          | 2.00          |
| Province has measures to prevent pollution (% agree)                        | 74.0%            | 47.8%         | 87.3%         |
| Province takes timely action to address pollution incidents (% agree)       | 72.9%            | 47.8%         | 87.3%         |
| Province punishes polluters (% agree)                                       | 75.9%            | 50.0%         | 89.2%         |
| Selected environmental protection as a troublesome procedure (%)            | 5.2%             | 0.0%          | 11.9%         |
| Environment Inspectors  | 6.1%             | 1.4%          | 13.4%         |
| Informal charge for Environment Inspectors                                  | 1.8%             | 0.0%          | 6.8%          |
| MONRE: Urban domestic wastewater treated in compliance with regulations (%) | 15.8%            | 0.0%          | 88.2%         |
| MONRE: Business establishments that have a wastewater treatment system (%)  | 88.3%            | 0.0%          | 100.0%        |
| MONRE: Domestic solid waste that is separated at source (%)                 | 15.5%            | 0.0%          | 80.0%         |
| MONRE: Domestic solid waste treated in compliance with regulations (%)      | 80.0%            | 0.0%          | 100.0%        |

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## Subindex 3:

Environmental Leadership  
(by Provincial Governments)

Environmental leadership of provincial governments

We measure these responsibilities in three dimensions

## #1

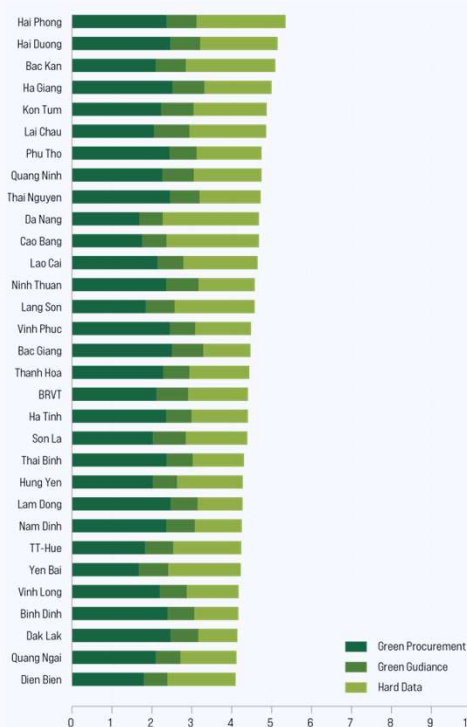
Experience with government practices in green procurement

## #2

Reception of guidance on sustainable practices from their provincial government.

## #3

MONRE PEPI on the amount of financial and human resources provincial governments devote to environmental protection work.



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## Subindex 3:

## Environmental Leadership

| Indicator   | National Average | Minimum Score | Maximum Score |
|---|------------------|---------------|---------------|
| PGI 3: Maximizing Green Benefits from Core Provincial Government Activities     | 4.11             | 2.98          | 5.35          |
| PGI Dimension 3.1. Green Procurement  | 2.01             | 1.19          | 2.60          |
| PGI Dimension 3.2. Green Regulatory Guidance                                    | 0.67             | 0.46          | 0.89          |
| PGI Dimension 3.3. Hard Data  | 1.43             | 0.68          | 2.41          |
| Provincial government prioritizes purchasing from green firms (%)               | 66.1%            | 34.0%         | 85.2%         |
| Provincial government pays premium for green goods//services (%)                | 60.5%            | 29.0%         | 85.2%         |
| Received guidance on environmental regulations (%)                              | 43.2%            | 13.5%         | 83.4%         |
| Received guidance on conserving energy (%)                                      | 12.5%            | 6.1%          | 24.6%         |
| Received guidance on using renewable energy (%)                                 | 8.6%             | 3.5%          | 19.5%         |
| Received guidance on producing renewable energy (%)                             | 5.4%             | 1.6%          | 16.9%         |
| Received guidance on minimizing plastics (%)                                    | 10.4%            | 2.6%          | 19.1%         |
| Received guidance on investing in solid waste management (%)                    | 5.1%             | 0.6%          | 10.5%         |
| Received guidance on limiting water pollution (%)                               | 16.5%            | 4.8%          | 31.2%         |
| Received guidance on using water economically (%)                               | 17.2%            | 4.3%          | 29.0%         |
| Received guidance on reducing air pollution (%)                                 | 13.4%            | 3.2%          | 27.0%         |
| Received guidance on reforestation (%)  | 6.0%             | 0.6%          | 21.0%         |
| MONRE: Proportion of state budget allotted to environmental protection work (%) | 1.8%             | 0.2%          | 6.2%          |
| MONRE: Governmental officials in protection work/1 Million                      | 147.01           | 44.43         | 380.39        |

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## Subindex 4:

Incentives and Support Services  
(by Provincial Governments)

Describes the availability and the reach of government instruments aimed at improving the private sector's environmental performance

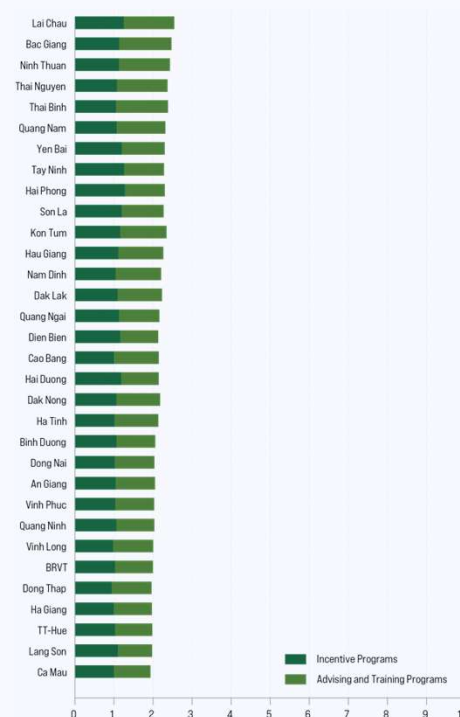
We measure these responsibilities in three dimensions

## #1

Firms' access to local government-sponsored programs that incentivize businesses to adopt environmentally sustainable practices.

## #2

Public advisory and training services to increase uptake of sustainable approaches of doing business.



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## Subindex 4:

## Environmental Incentives and Support Services

| Indicator  | National Average | Minimum Score | Maximum Score |
|--|------------------|---------------|---------------|
| PGI 4: Environmental Incentives and Support Services (by Prov. Government)   | 1.92             | 1.39          | 2.59          |
| PGI Dimension 4.1. Incentive Programs  | 0.97             | 0.70          | 1.28          |
| PGI Dimension 4.2. Advising and Training Programs                            | 0.95             | 0.68          | 1.34          |
| Incentive program for energy saving and efficiency (0-4)                     | 1.03             | 0.31          | 2.02          |
| Incentive program for clean/renewable energy (0-4)                           | 0.31             | 0.07          | 0.74          |
| Incentive program for air pollution mitigation (0-4)                         | 0.54             | 0.17          | 1.15          |
| Incentive program for water pollution mitigation (0-4)                       | 0.46             | 0.19          | 1.07          |
| Incentive program for water plastic reduction (0-4)                          | 0.40             | 0.13          | 0.73          |
| Incentive program for waste recycling (0-4)                                  | 0.24             | 0.06          | 0.50          |
| Incentive program for disaster resilience (0-4)                              | 0.17             | 0.04          | 0.46          |
| Incentive program for reforestation (0-4)                                    | 0.18             | 0.00          | 0.59          |
| Province offers advisory services to improve environmental performance (0-4) | 0.54             | 0.22          | 1.23          |
| Province offers training services to improve environmental performance (0-4) | 0.25             | 0.09          | 0.61          |

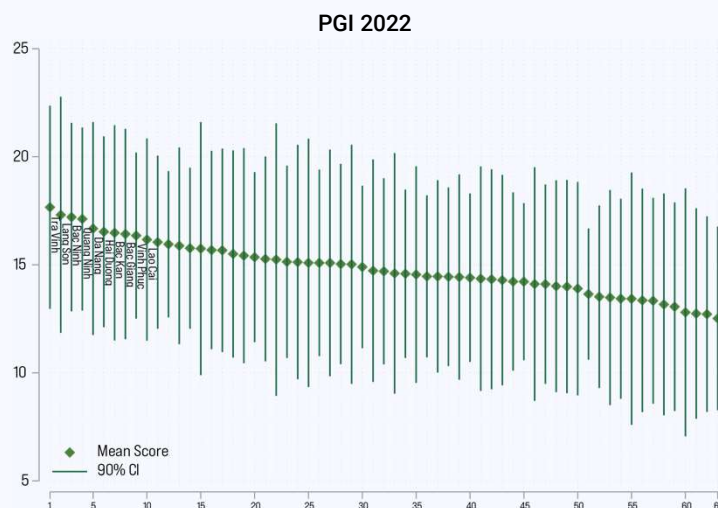
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## Top 5 Provinces in Overall PGI

The mean score with 90 percent confidence intervals

- 1 TRA VINH
- 2 LANG SON
- 3 BAC NINH
- 4 QUANG NINH
- 5 DA NANG

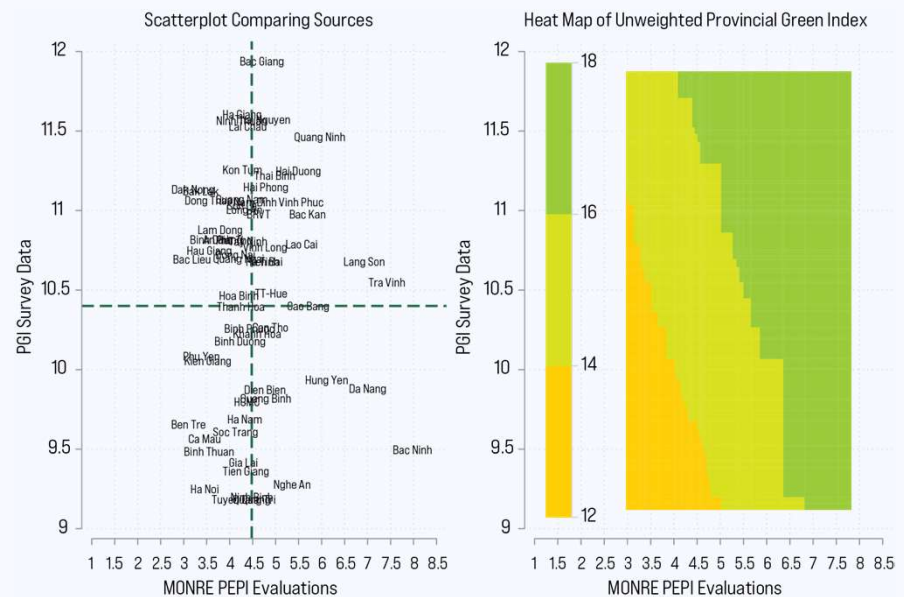




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## Correlation and Predictions from Hard and Soft Indicators

Survey and administrative measures of green policies are not correlated, but performing well requires either outstanding performance on one or very good performance on both.



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## Top 5 in Each PGI Subindex

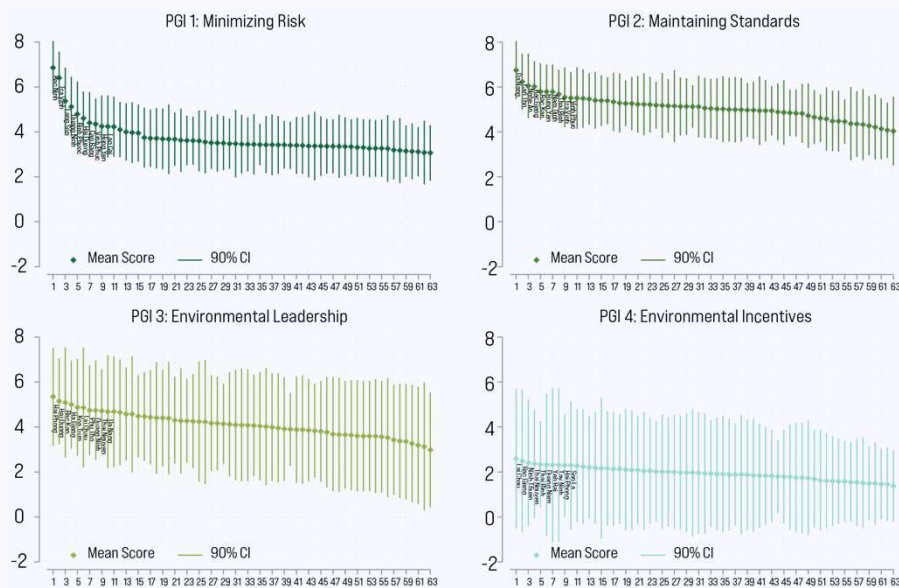
|   | 1. Minimizing the Risk of Climate Hazards (to Firms) | 2. Maintaining Minimum Environmental Standards (by Firms) | 3. Environmental Leadership (by Provincial Governments) | 4. Environmental Incentives and Support Services (by Provincial Governments) |
|---|--|---|---|--|
| 1 | BAC NINH   | DA NANG   | HAI PHONG   | LAI CHAU   |
| 2 | TRA VINH   | CAN THO   | HAI DUONG   | BAC GIANG  |
| 3 | LANG SON   | NGHE AN   | BAC GIANG   | NINH THUAN   |
| 4 | QUANG NINH   | BAC GIANG   | HA GIANG  | THAI NGUYEN  |
| 5 | BINH PHUOC   | BAC KAN   | KON TUM   | THAI BINH  |

## Differences by Country of Origin and Sector

Variance within Each Subindex, Differences between Foreign and Domestic Investors,  
Differences by Sector

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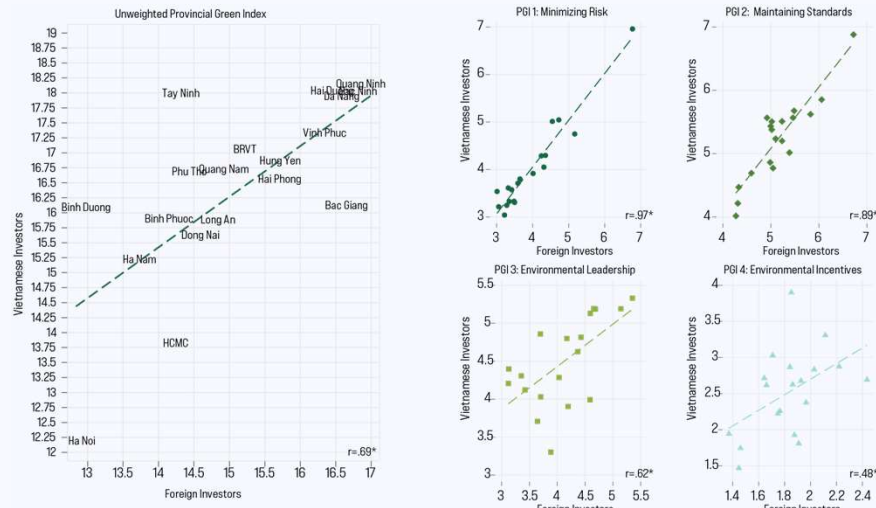
### High Variance within Each Subindex



The range bars depict 90 percent confidence intervals around the mean score

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## Differences between foreign and domestic investors

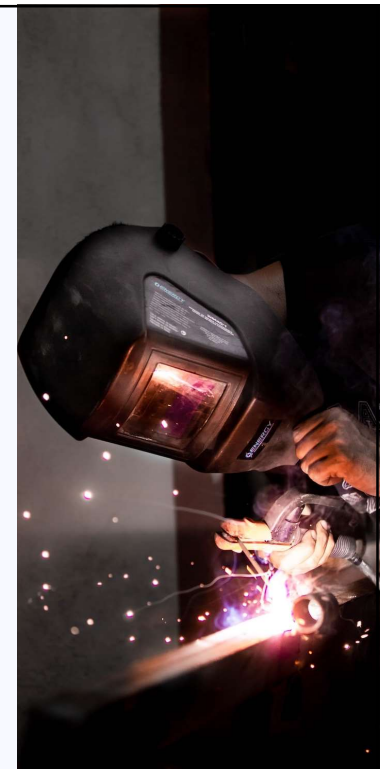


Foreign and domestic investors **agree** on their environmental assessments

Foreign firms generally **more positive** except in efforts to combat pollution.

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## Differences by sector only visible for foreign investors



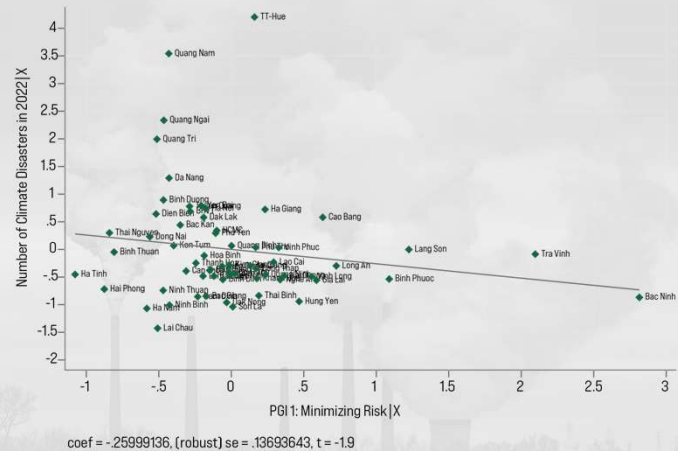
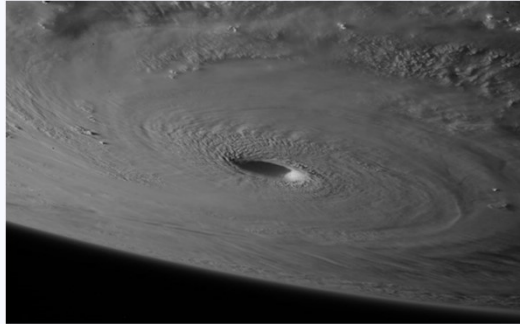




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## Provinces that do well on Subindex 1 experienced less climate disasters in the past year

Subindex 1 Negatively Correlated with Climate Disasters in Controlled Regression

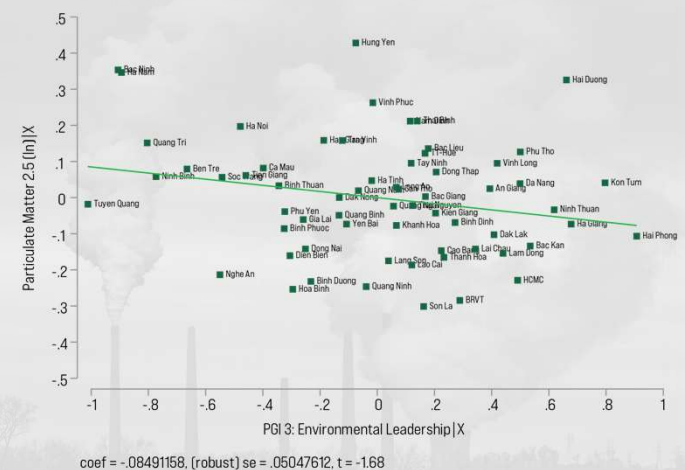


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## Provinces that do well on Subindex 3 experience lower pollution (PM 2.5)

Subindex 3 Negatively Correlated with Pollution in Controlled Regression



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## Summary of Critical Findings

Provincial Green Index 2022

### #1

The four subindices of the PGI are not strongly associated with one another. The same province can excel in one facet of green policies and lag on another.

### #2

Survey and administrative measures of green policies are not correlated, but performing well requires either outstanding performance on one or very good performance on both.

### #3

Foreign investors in a province are generally more pleased with provincial green policies than their domestic counterparts.

### #4

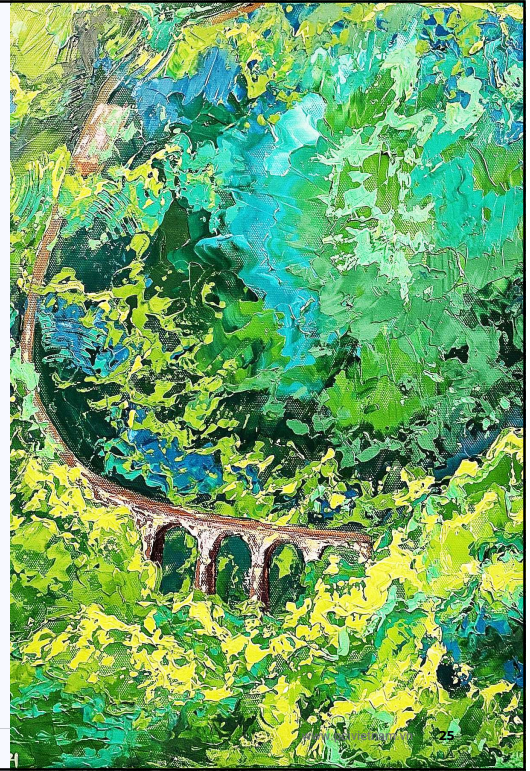
Green perceptions of foreign investors differ widely by broad sector. Foreign manufacturing firms are far more likely to evaluate provincial green standards as positive.

### #5

As this is a baseline measure of green policies, we do not yet find a strong association between the overall PGI and any of the measures.

### #6

Improvements on Subindex 1 are associated with reductions in environmental disasters. Changes in Subindex 3 are strongly correlated with reductions in PM 2.5.



## NEXT STEPS

1

Large scale expert evaluation of methodology, scientific rigor, and policy evaluations.

2

Engage with provincial leaders to understand policy innovations and trade-offs.

3

Deeper qualitative assessment in leading provinces to extract best practices.







# THANK YOU!

## Introducing the New Provincial Green Index

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Leader of PCI Research Team

