



SET Research Scholarship 2026

Honorary Award and Young Rising Star Award



Capital Market Implications of Climate Risk Exposure regarding Cost of Capital and Corporate Valuation: Evidence from Thai Listed Companies

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Climate Risk Has Significant Economic Implications for Thailand

Evidence from the 2011 Thailand Floods

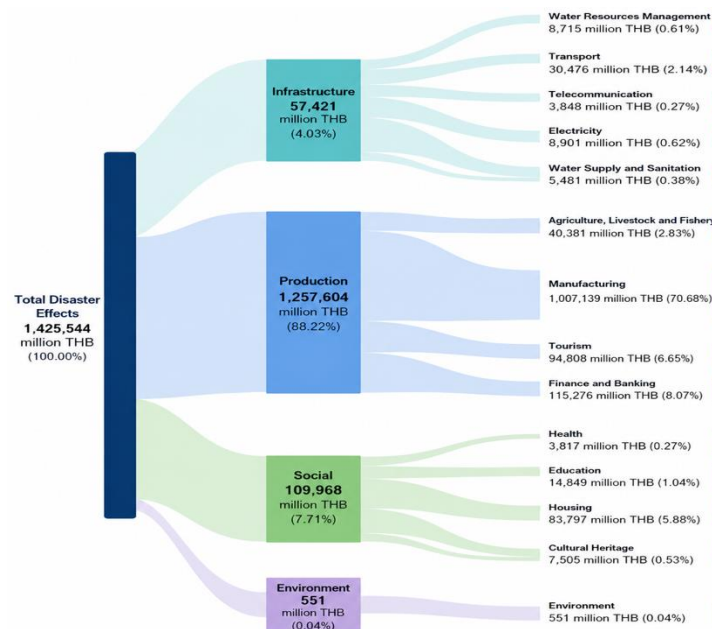


Source: Christophe Archambault/AFP/Getty Images.

Macroeconomic impact

12.6% of GDP

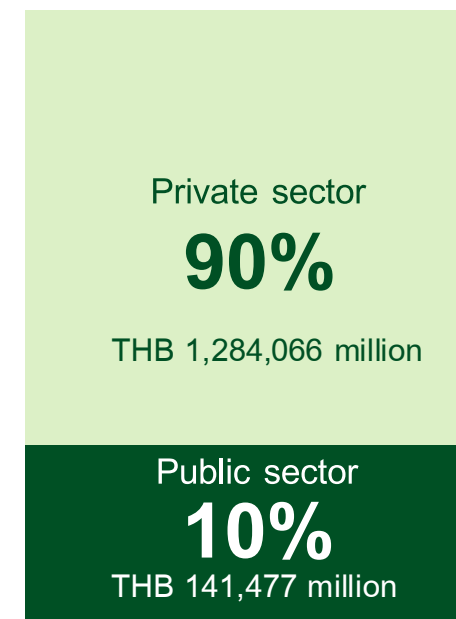
Source: World Bank (2023), *Thailand Economic Monitor: Coping with Floods and Droughts*, pp. 25.



Total damage and losses

THB 1.43 trillion

Source: DALA estimates, NESDB, and Ministry of Industry.



Manufacturing / private sector

70% / 90%

Source: World Bank (2023), *Thailand Economic Monitor: Coping with Floods and Droughts*, pp. 31.

From “Rain Bomb” to Economic Loss

Recent floods in Hat Yai and Nan demonstrate how extreme rainfall can rapidly escalate from a climate hazard into material socioeconomic disruption

Hat Yai 2025



Flood Depth

More than 3 meters

Estimated Income Loss

Southern Thailand

THB 15.7 billion

Business Recovery

More than 3 months



Source: Bank of Thailand, *Business Voices*, Issue No. 2, 23 Dec 2025.

Nan 2026



Flood Depth

3 meters

Preliminary Economic Damage

THB 500 million



Damage Concentrated in

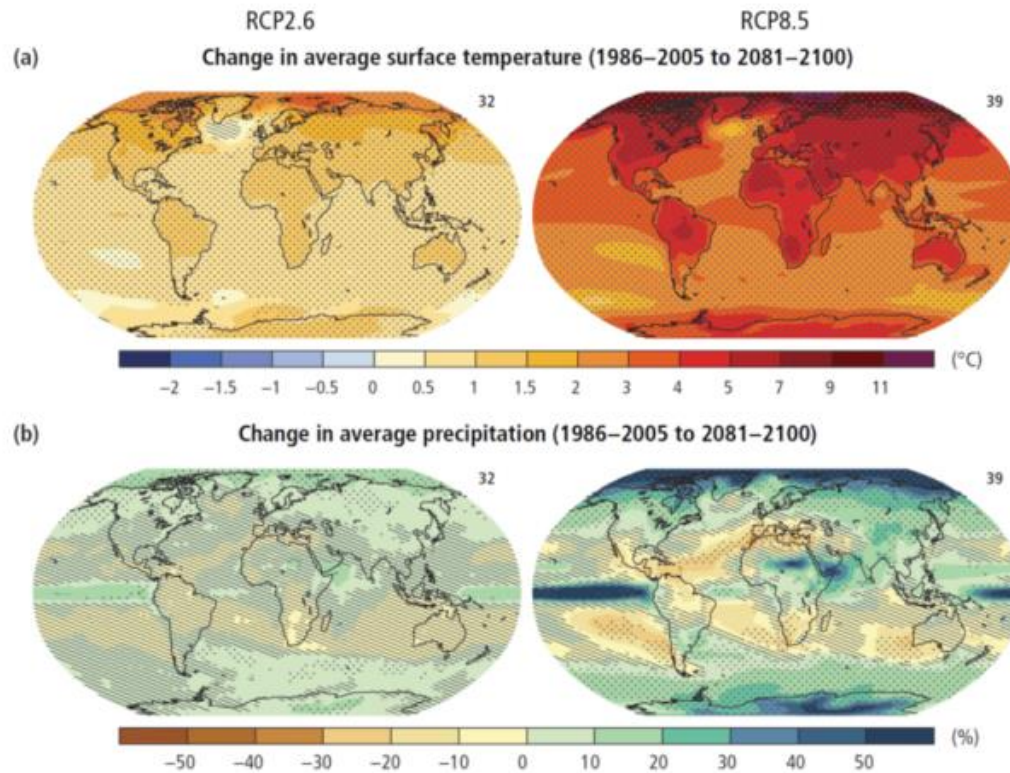
Pua & Tha Wang Pha

More than 70%

Source: Nan Chamber of Commerce, reported by *Prachachat Business*, 22 Aug 2026.

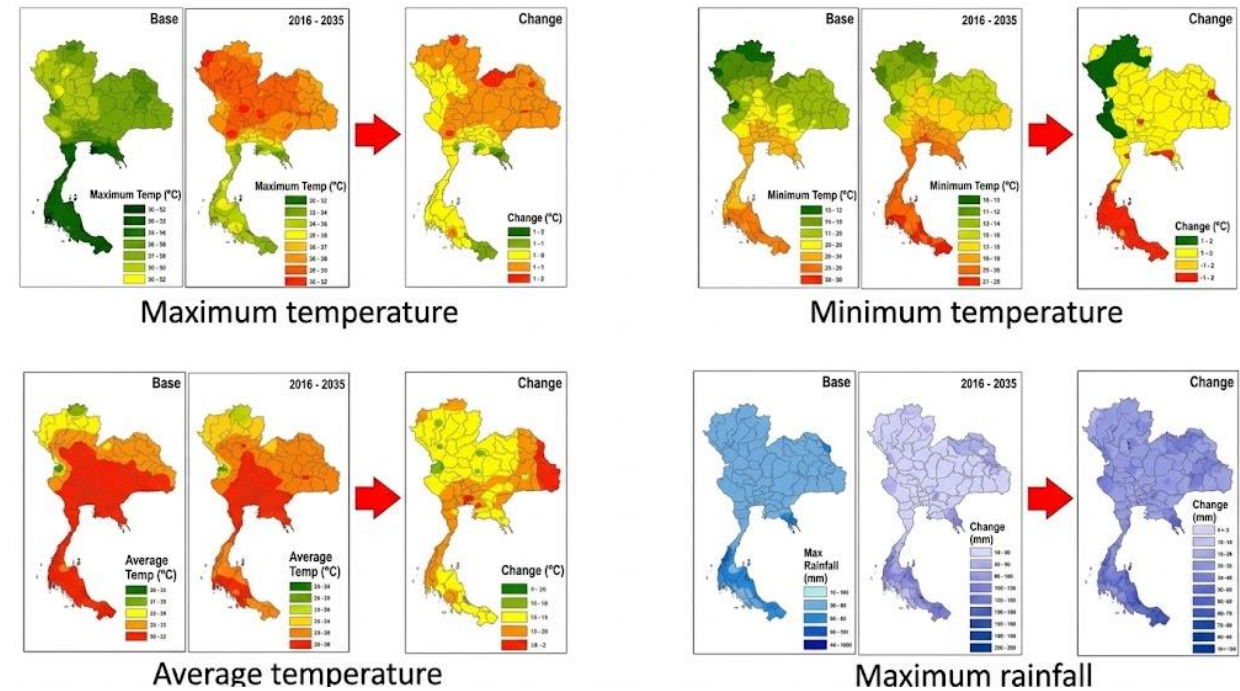
Thailand climate exposure is expected to intensify

Global average surface temperature change relative to 1850-1900



Source: IPCC (2023)

Climate Change Projections (2559-2578)



Source: ONEP (2017)

Purpose of study

This study extends the climate-finance literature by examining whether climate-risk exposure (CRE) disclosed in mandatory 56-1 One Reports is reflected in firms' cost of capital and valuation in Thailand

Research objective

1. To construct a replicable CRE intensity from 56-1 One Reports
2. To examine whether CRE is associated with firms' cost of capital
3. To investigate the relationship between CRE and corporate valuation

Practical Implications

Investors

Enhances the assessment of climate-related financial risk in long-term investment decisions

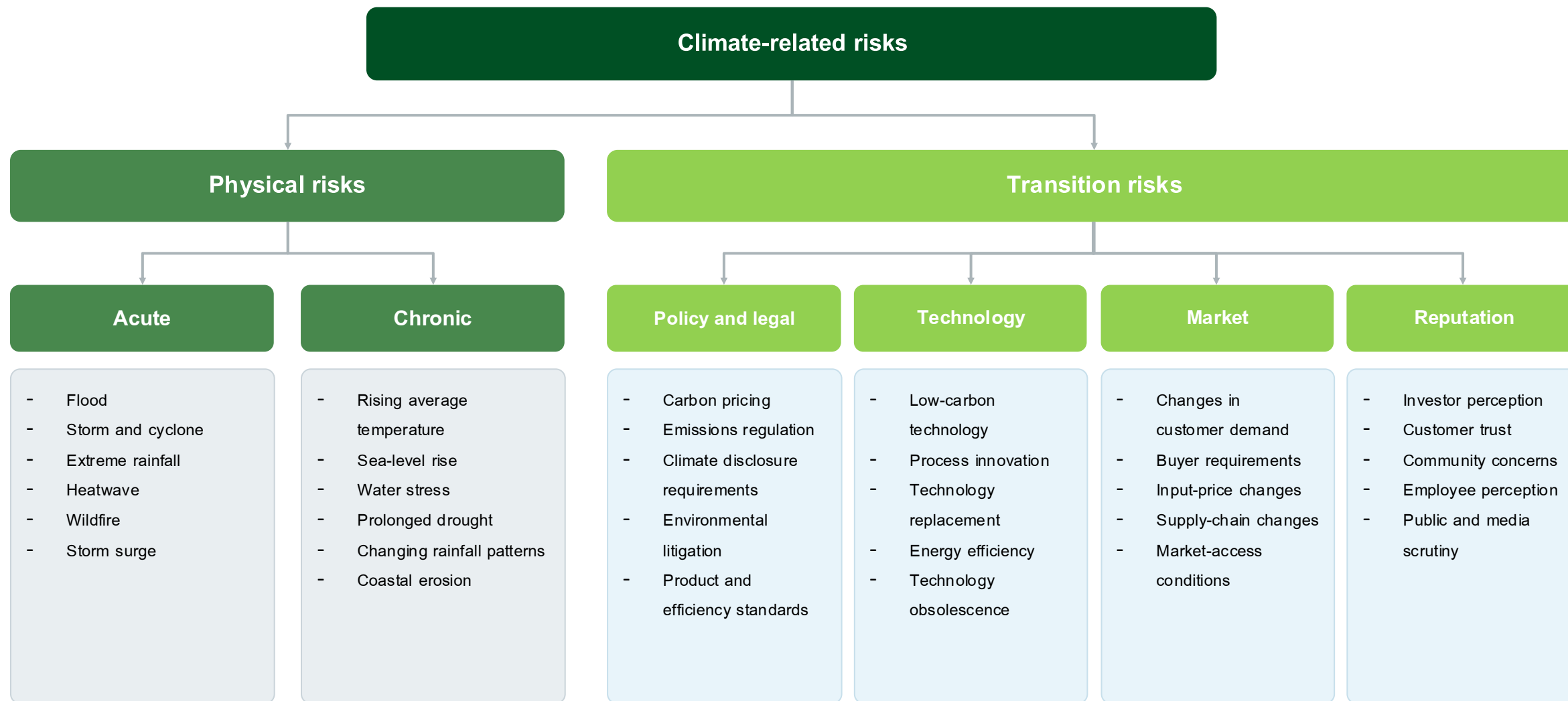
Firms

Support more decision-useful climate-risk disclosure and help firms understand how disclosed climate exposure may relate to financing costs and corporate valuation

Regulators

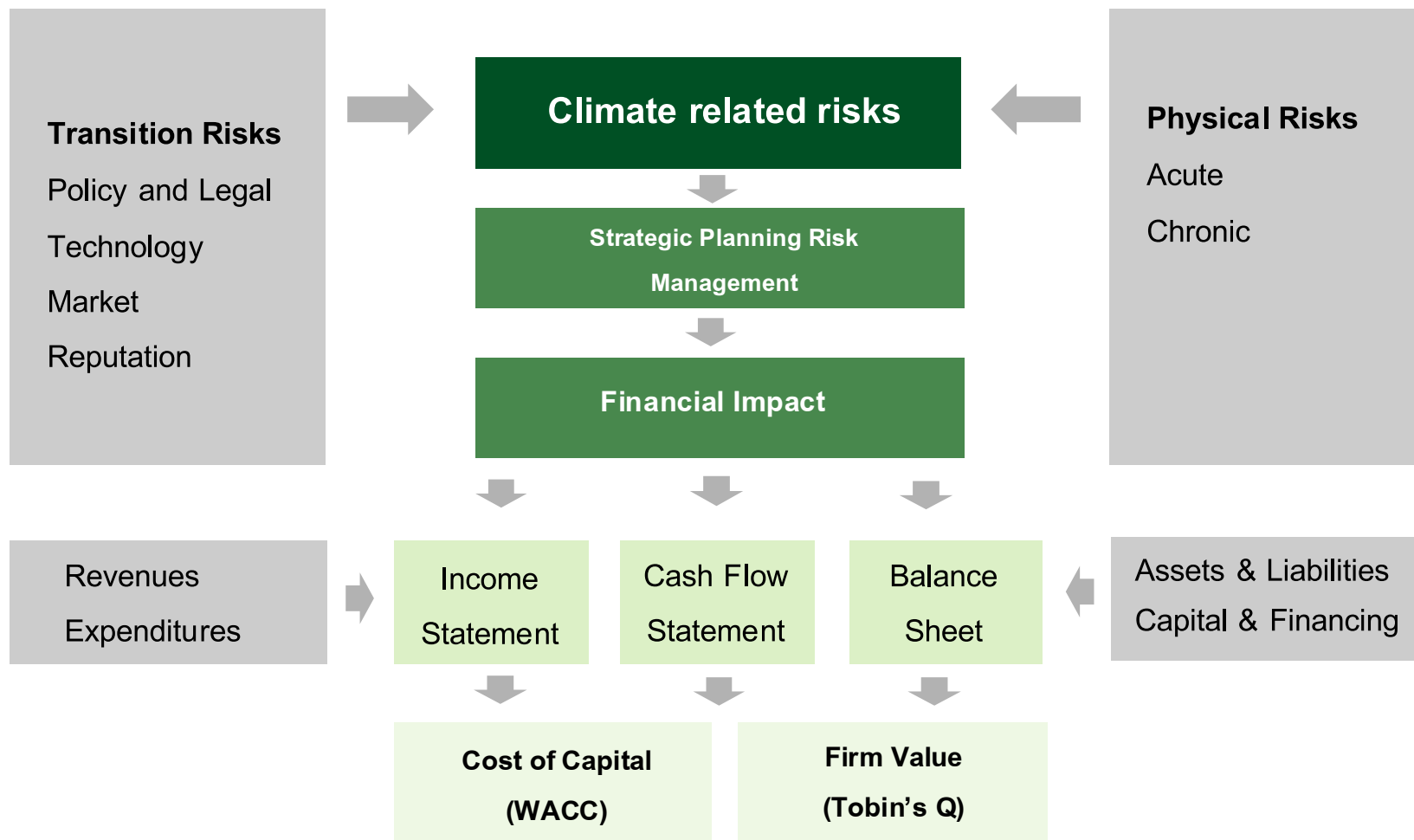
Provides empirical evidence to support the development of climate-related disclosure requirements and Thailand's alignment with IFRS S2

How Are Climate-Related Risks Classified?

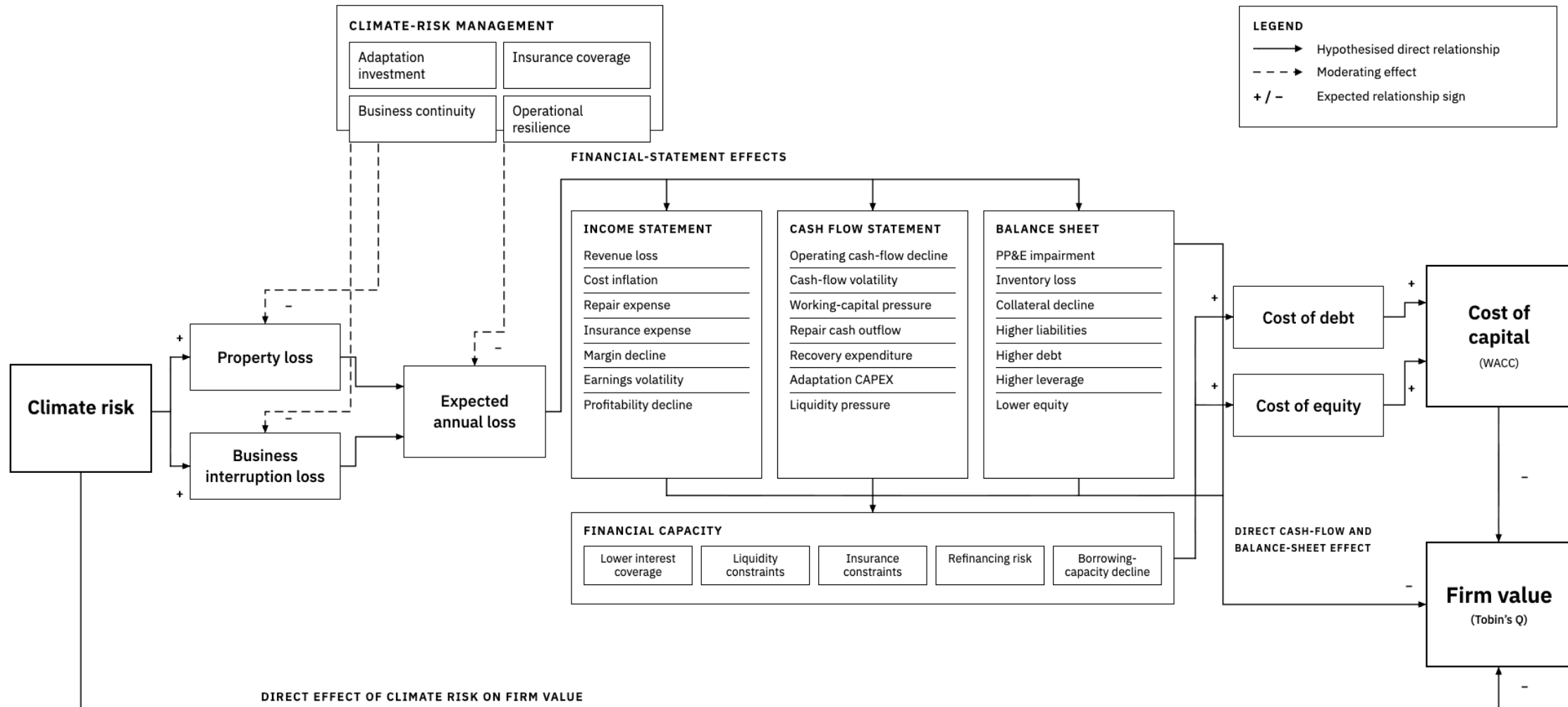


How Does Climate Risk Translate into Capital-Market ?

A TCFD-based transmission framework linking climate risk exposure to WACC and firm value

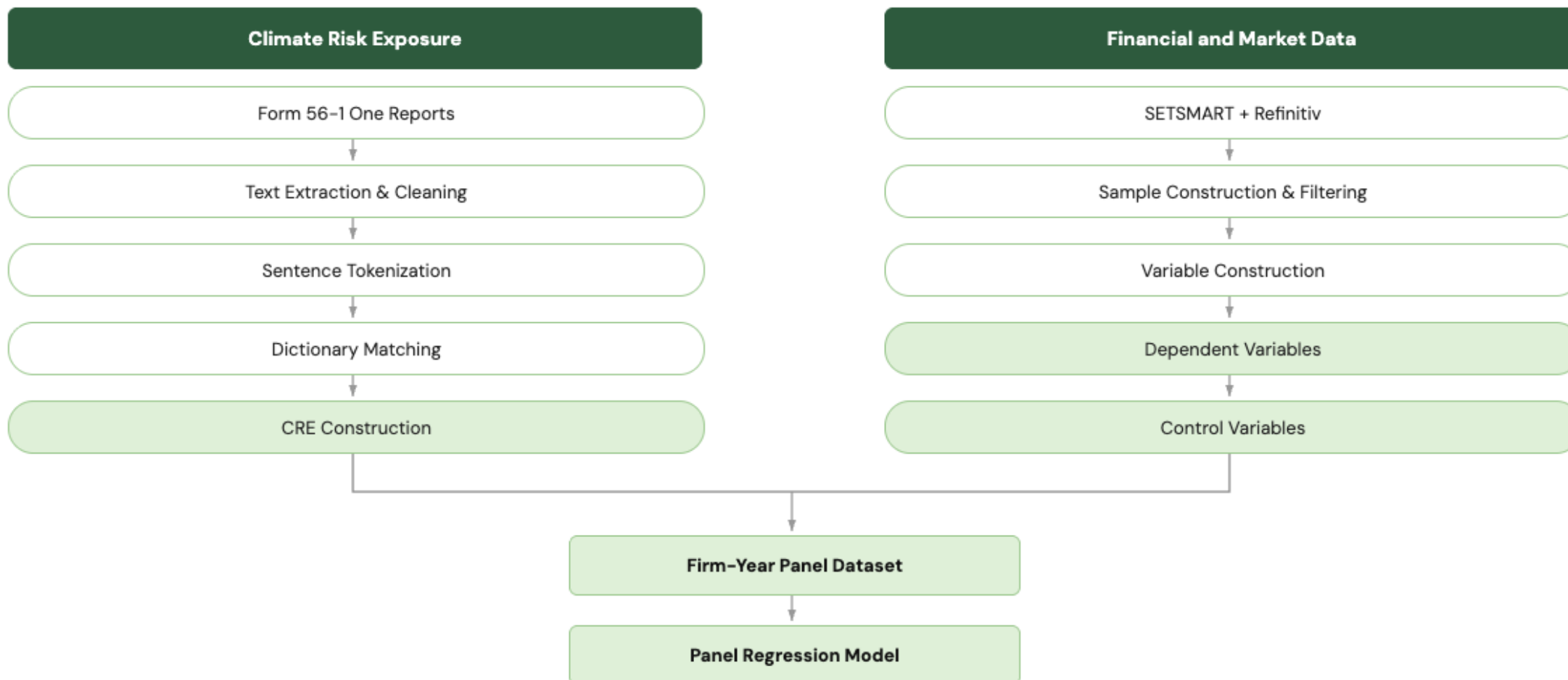


Climate Risk, Cost of Capital and Firm Value



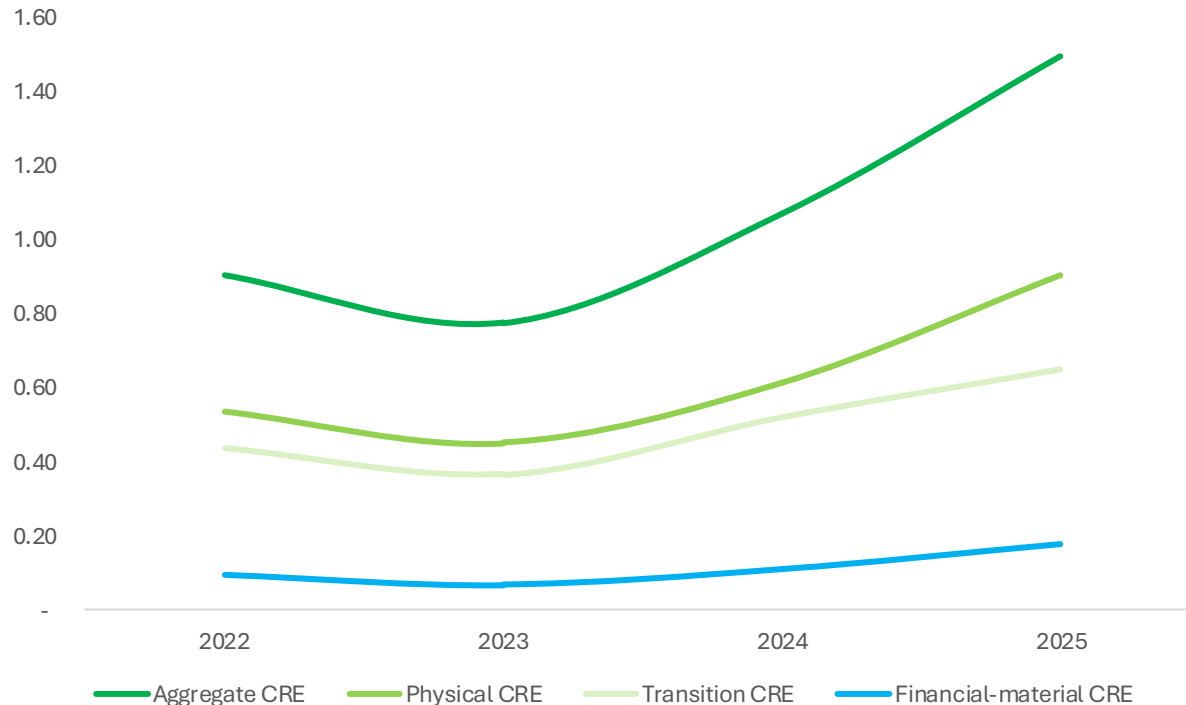
Research Design

Two data streams merged into a firm-year panel



Empirical Results

Climate-Risk Exposure Intensity Trend



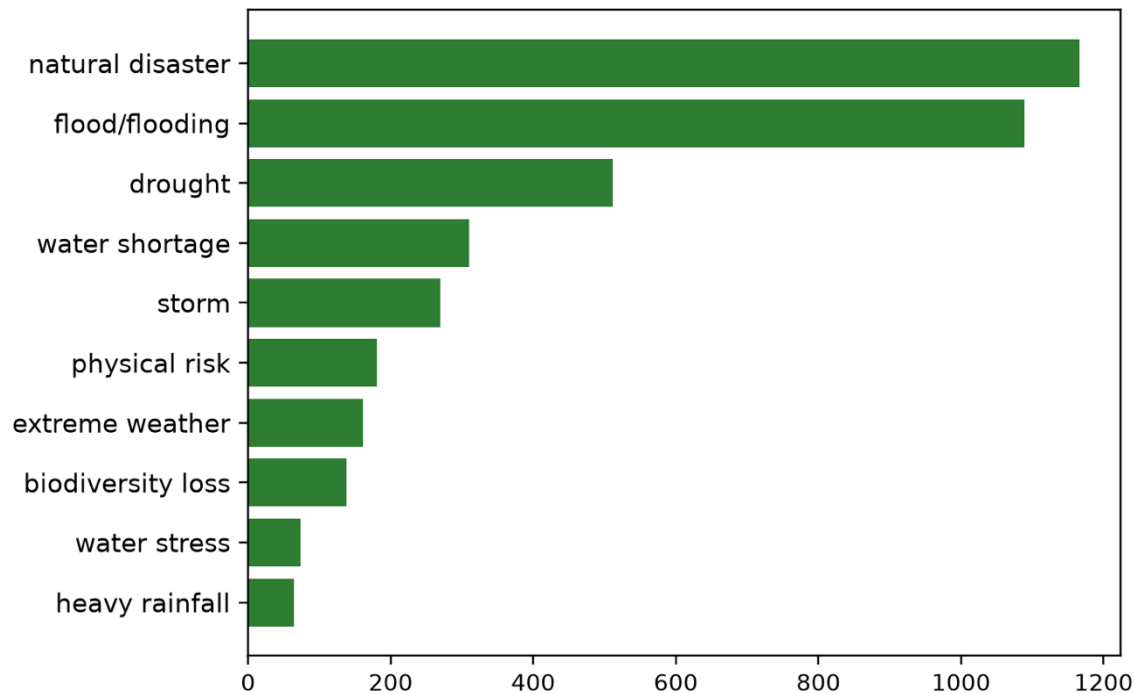
Since mandatory sustainability disclosure began in 2022, disclosed Climate Risk Exposure has increased overall

Physical risk dominates, reflecting Thailand's exposure to floods, droughts and asset disruption

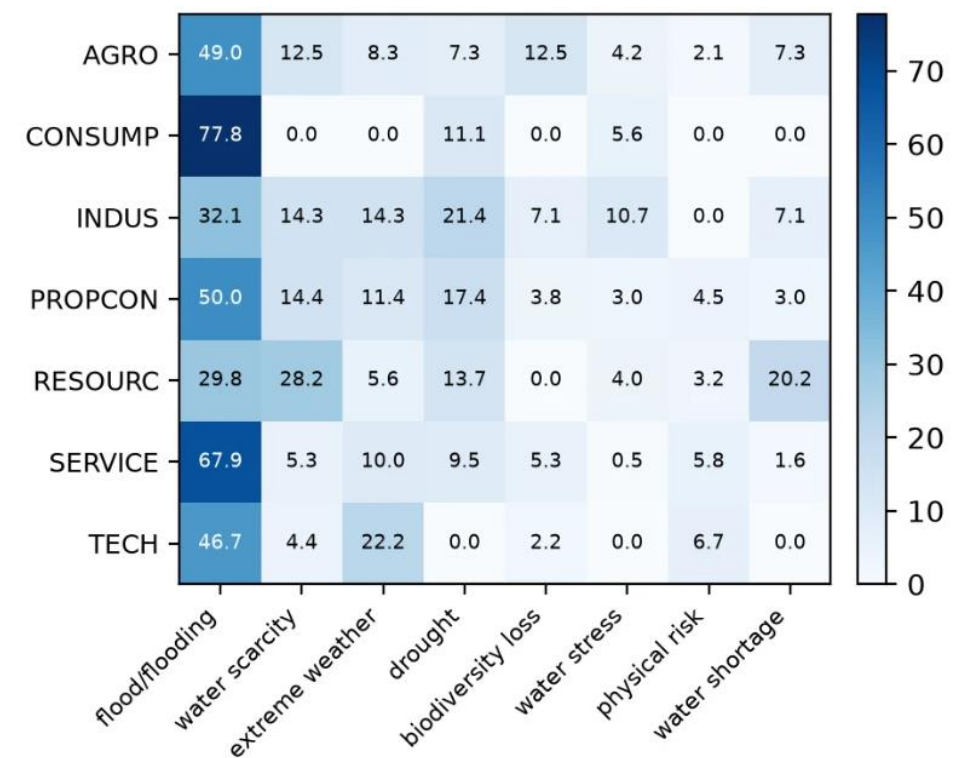
Transition risk is rising alongside emissions, regulatory and decarbonization pressures

Empirical Results

Physical Topic Terms



Physical Topic Terms By Sectors

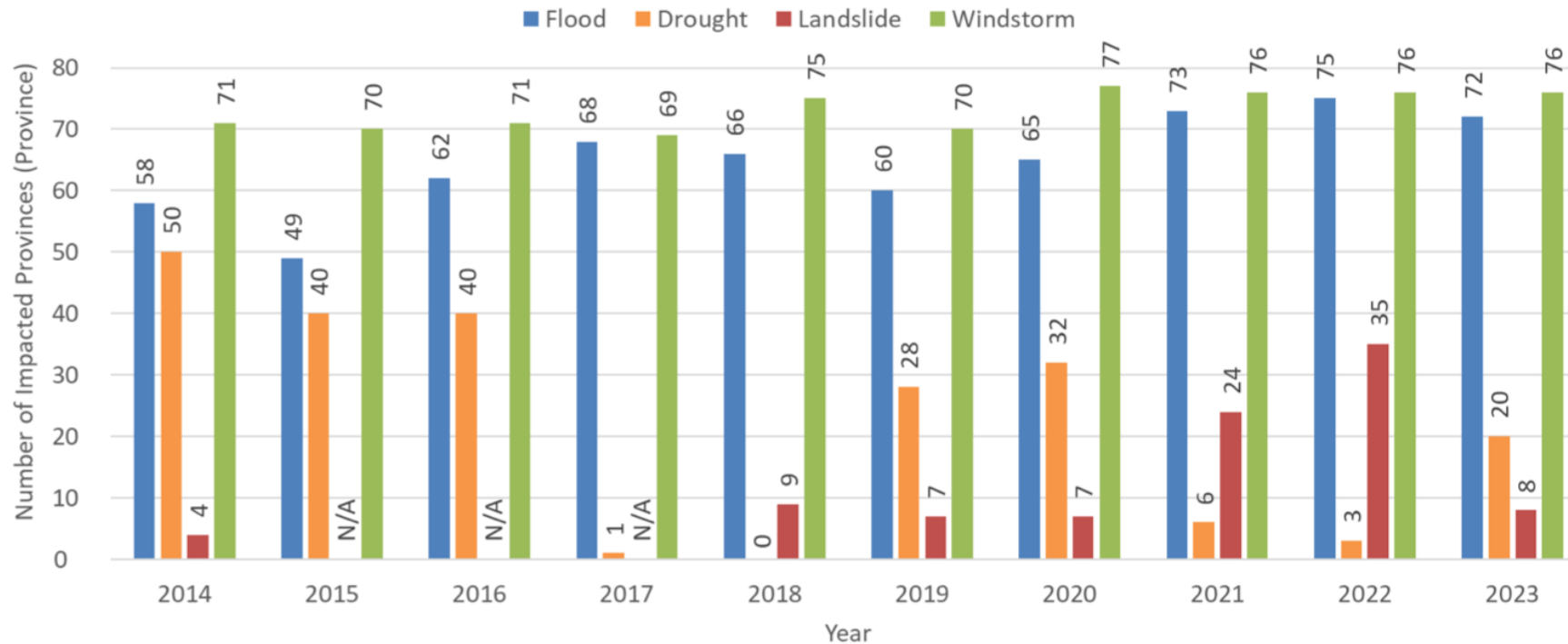


Flood dominates physical-risk disclosure across every sector (30–78%); Resources is the outlier, with water scarcity and shortage rivaling flood reflecting water-intensive operations rather than flood exposure

Ground-Truthing Physical Risk: A Decade of Flood and Drought Impact



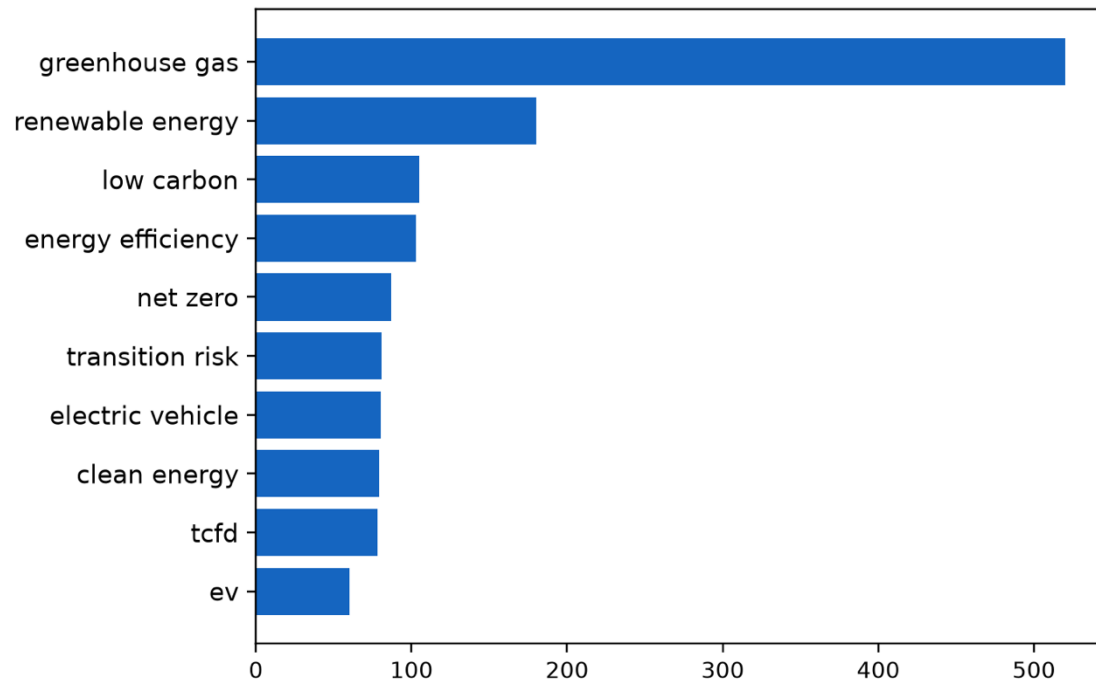
Disasters Statistics in the Dimensions of Impacted Areas over the Last 10 Years



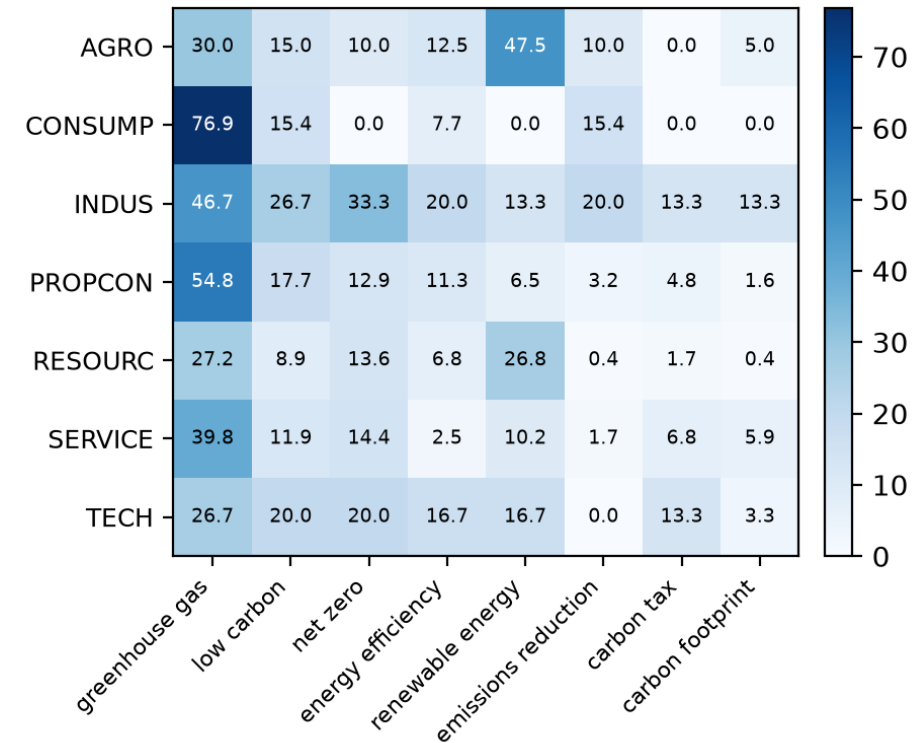
Flood and drought account for **92% of affected households**,
while generated the largest reported **financial damage (USD 183 million)**

Empirical Results

Transition Topic Terms

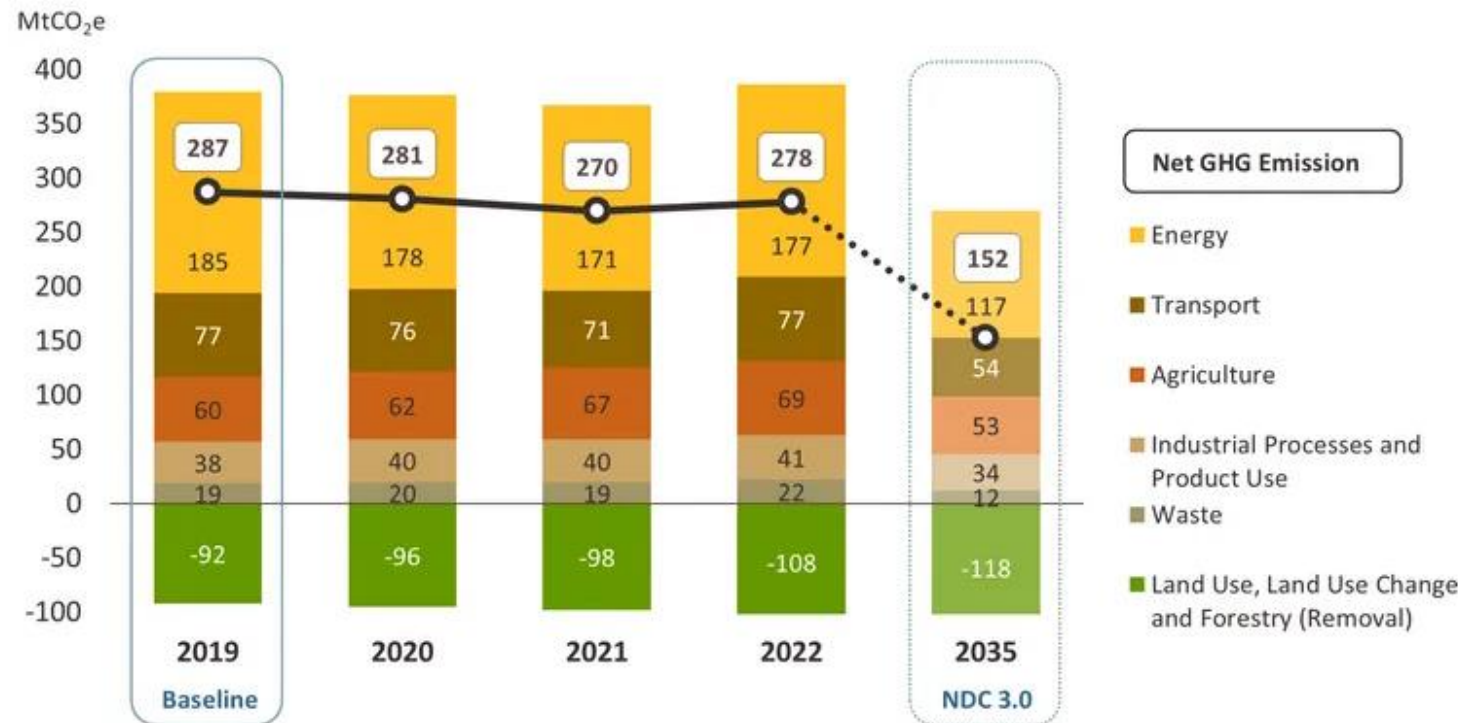


Transition Topic Terms By Sectors



Greenhouse gas leads overall, but Agriculture and Resources skew unusually toward renewable energy language
 Industrials is the only sector engaging meaningfully with policy terms like carbon tax

Thailand announced a net-zero greenhouse gas emissions target for 2050

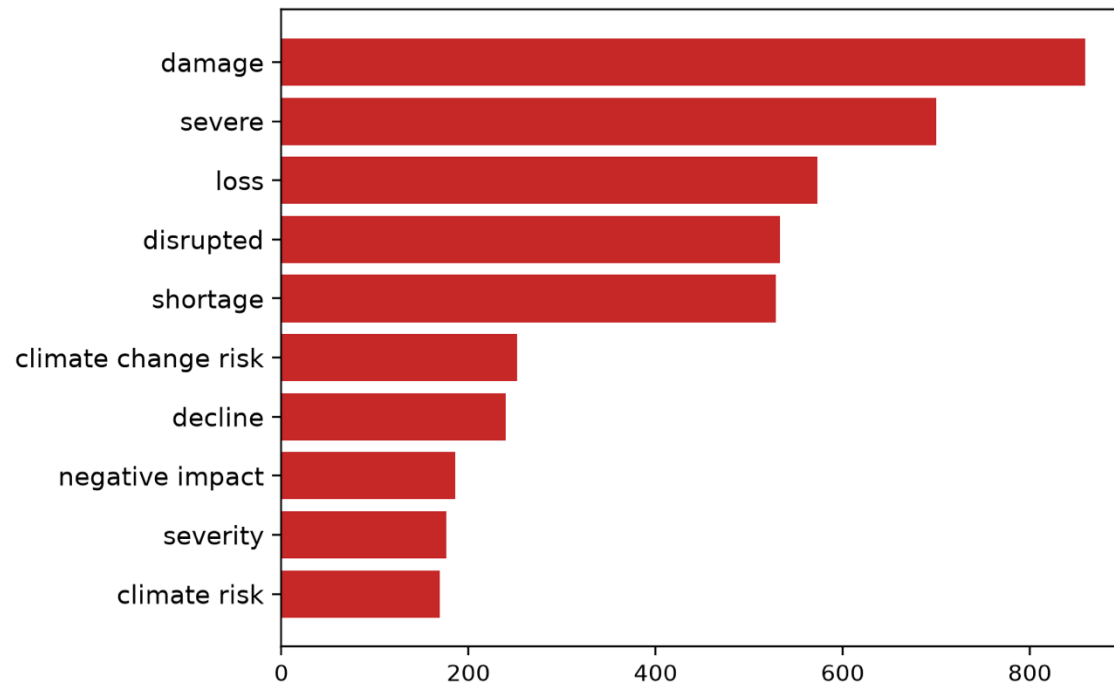


Source: The Department of Climate Change and Environment (DCCE), NDC3.0, and Krungsri Research

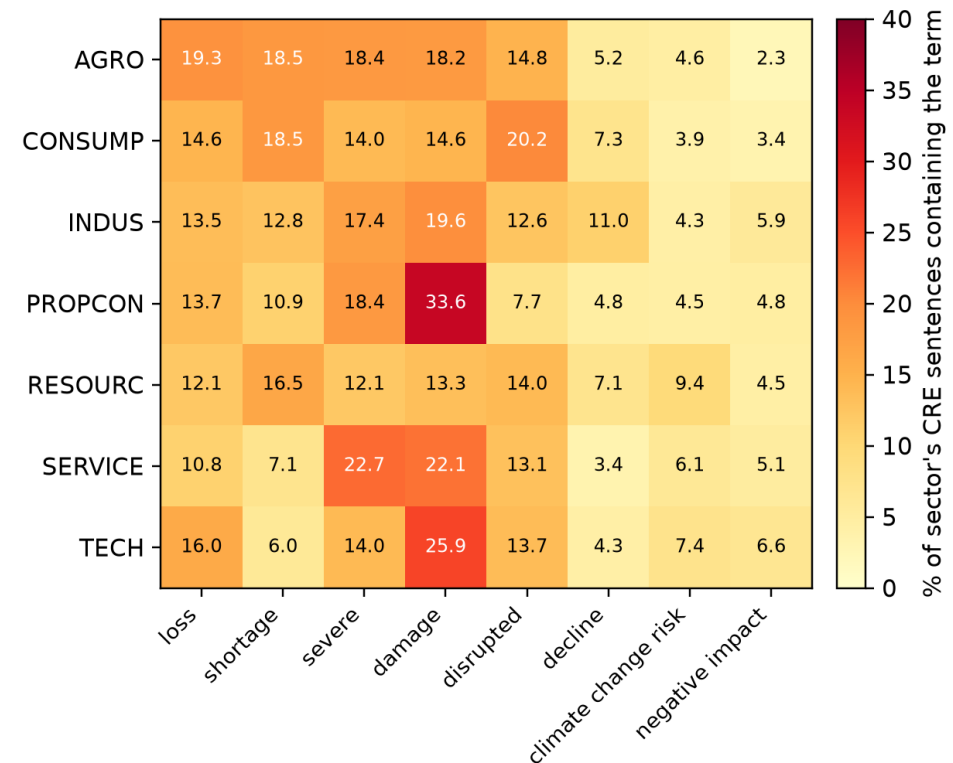
Thailand commits to reducing net GHG emissions by **47% from 2019 levels**, limiting emissions to **152 MtCO₂e by 2035** on the pathway to net zero by 2050.

Empirical Results

Strong Risk Terms



Strong Risk Terms By Sectors



"Damage" is the dominant risk term everywhere and peaks in Property & Construction (33.6%).
Disclosure consistently favors concrete, realized-consequence language over abstract risk framing

Key Findings

Variable	Tobin's Q				WACC			
	(1) CRE Total	(2) CRE Physical	(3) CRE Transition	(4) CRE FinMaterial	(5) CRE_Total	(6) CRE_Physical	(7) CRE_Transition	(8) CRE_FinMaterial
Climate Risk Exposure	0.0169 (0.0167)	0.0201 (0.0269)	0.0435 (0.0263)	0.0235 (0.0566)	0.0284** (0.0135)	0.0301* (0.0178)	0.0231 (0.0181)	0.0441 (0.0417)
Size	-0.4495*** (0.1027)	-0.4436*** (0.1052)	-0.4678*** (0.1014)	-0.4535*** (0.1027)	0.0046 (0.0698)	0.0131 (0.0686)	-0.0073 (0.0698)	-0.0025 (0.0685)
Leverage	0.6395* (0.3827)	0.6321 (0.3945)	0.6826* (0.3752)	0.6584* (0.3816)	0.0429 (0.2226)	0.0355 (0.2207)	0.0892 (0.2205)	0.0745 (0.2206)
ROA	1.4488* (0.7406)	1.4383* (0.7376)	1.4616* (0.7402)	1.4374* (0.7378)	-0.3527 (0.4132)	-0.3710 (0.4146)	-0.3621 (0.4163)	-0.3713 (0.4149)
CAPINT	0.5356 (0.4319)	0.5225 (0.4339)	0.5430 (0.4311)	0.5065 (0.4267)	0.0778 (0.2216)	0.0513 (0.2204)	0.0390 (0.2183)	0.0304 (0.2172)
Constant	11.0022*** (2.4718)	10.8668*** (2.5376)	11.4396*** (2.4311)	11.1230*** (2.4676)	-2.8563* (1.6863)	-3.0459* (1.6601)	-2.5388 (1.6846)	-2.6437 (1.6563)
Within R-squared	0.1444	0.1438	0.1504	0.1419	0.0319	0.0244	0.0180	0.0158
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector and Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	310	310	310	310	310	310	310	310

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$, two-sided raw.

Firm valuation

no effect

Share prices haven't moved on disclosed climate risk yet

Cost of capital

higher

Financing costs already higher, driven by physical risk

Climate risk is already priced into borrowing costs, before it shows up in share prices.

Significance for the capital market and policy recommendations

Investors



- Incorporate CRE intensity into due diligence and valuation models as a forward-looking complement to ESG ratings, which largely reflect current and historical performance, sharpening estimates of a firm's true cost of capital
- Exploit the pricing lag this study identifies: financing costs already reflect physical climate risk while equity valuations have not yet adjusted, an information edge for investors positioned ahead of the eventual re-rating

Firms



- Embed climate-risk assessment into enterprise risk management to evaluate resilience gaps and climate-linked opportunity, not disclosure alone
- Financing cost already responds to physical-risk disclosure, quantifying it strengthens the case for funding through JUMP+'s Climate and Emissions Plan

Policymakers



- Physical risk is priced, transition risk is not a comparability gap mandatory IFRS S1 and S2 adoption next year will force firms to close
- Sequence JUMP+'s Climate and Emissions Plan, CGR, and Corporate Value Up review together as complementary bridges toward a smooth transition



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