



Climate Change & Financial Stability in Jamaica



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Introduction

- **Climate related risks have become more prominent in development planning and economic policy in Jamaica.**
- **Early stages of developing a framework to incorporate climate risks in financial stability assessments.**
- **The main transmission channel is physical risks**
- **The exact pathways of transmission of climate change are uncertain and analysis is constrained by data gaps.**

Outline

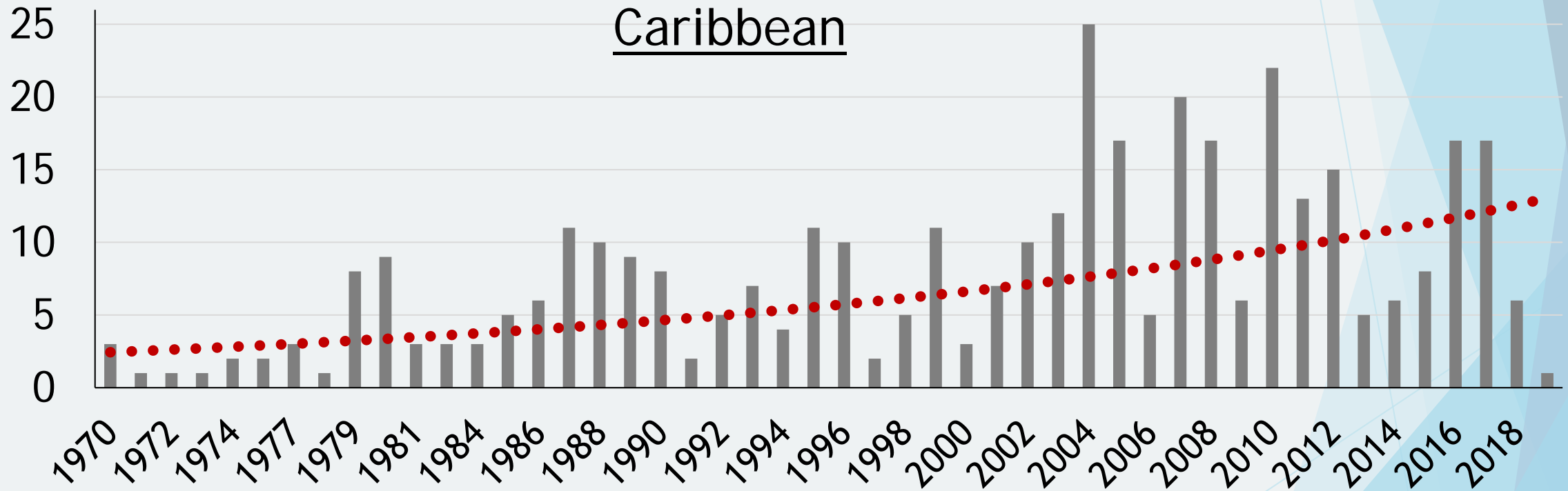
- 1. Climate related risks to Jamaica: Stylized Facts.**
- 2. The main transmission channels and exposure of financial system.**
- 3. Framework for assessing climate risks to financial stability.**

Outline

1. Climate related risks in Jamaica: Stylized Facts

There is a trend increase in the number and severity of environmental disasters in the region.

Number of Disaster Events Experienced in the Caribbean



Source: EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL) - CRED, www.emdat.be, Brussels, Belgium. Includes storm, drought, flood or earthquake in Caribbean island region.

Hurricanes are among the most frequent disaster events and can create significant economic impact.

Costs associated with Major Storm Events in Jamaica

EVENT	Year	Category	Cost (\$JB)	Impact (% GDP)
Hurricane Gilbert	1988	5	~8.3	65.0
Hurricane Michelle	2001	4	2.52	0.8
May/June Flood Rains	2002	-	2.47	
Hurricane Charley	2004	4	0.44	0.02
Hurricane Ivan	2004	3	36.9	8.0
Hurricanes Dennis & Emily	2005	4	5.98	1.2
Hurricane Wilma	2005	5	3.6	0.7
Hurricane Dean	2007	4	23.8	3.4

Source: Planning Institute of Jamaica

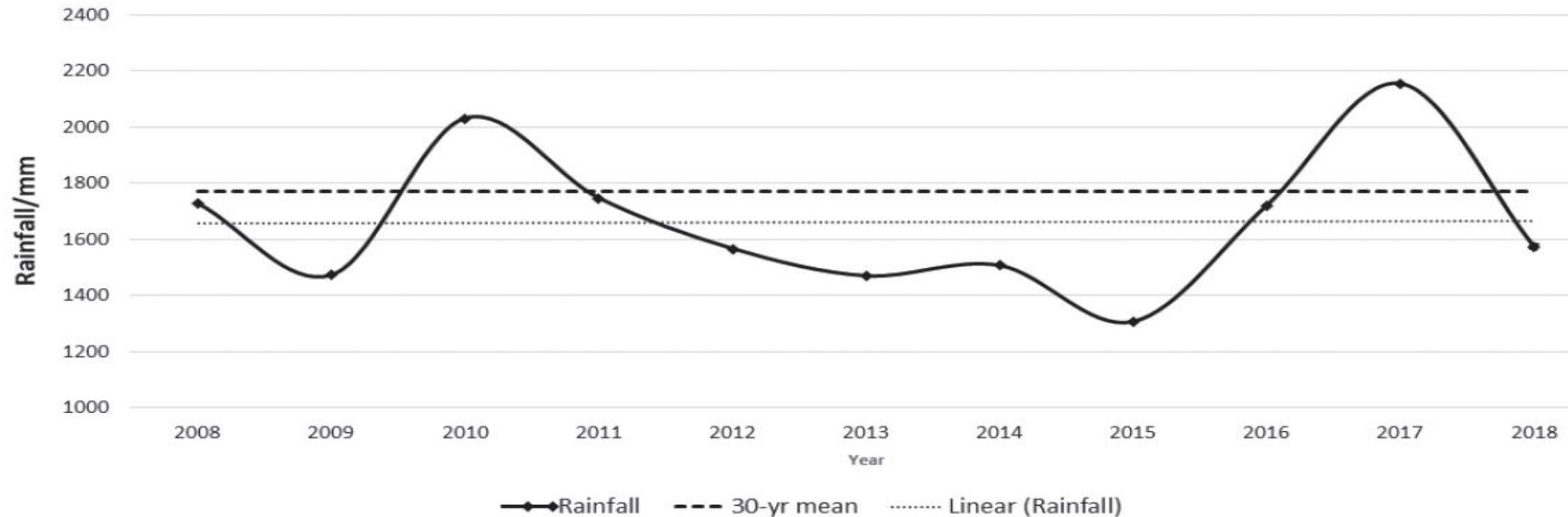
Intergovernmental Panel on Climate Change Report

Caribbean islands can expect:

- greater variation in precipitation between 2010 and 2039; and
- increasing air temperatures of 0.48-1.06 degrees Celsius by 2039.

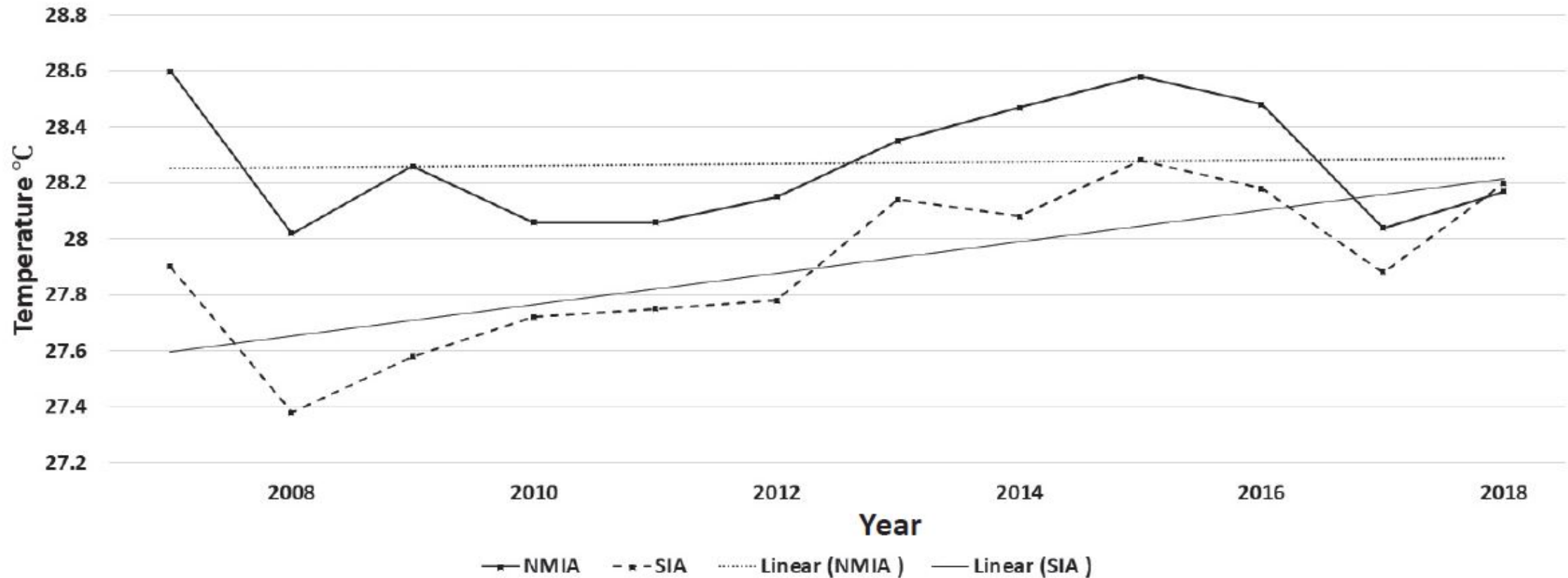
Climate change is expected to affect Jamaica mainly through more severe hurricanes, increases in heavy rainfall and longer periods of drought.

Average Annual Rainfall



The Intergovernmental Panel on Climate Change predicts increasing air temperatures of 0.48-1.06 degrees Celsius by 2039.

Average Annual Temperature



Source: PIOJ. Recordings from NMIA (Norman Manley International Airport) and SIA (Sangster International Airport)

Beaches eroded by an additional 0.3 per cent in 2018 compared to the previous year



Source: The Case of the Disappearing Shoreline: What Happened to Jamaica's Hellshire Beach? Top, Hellshire Beach, January 2009. Bottom, Hellshire Beach, January 2016.

Outline

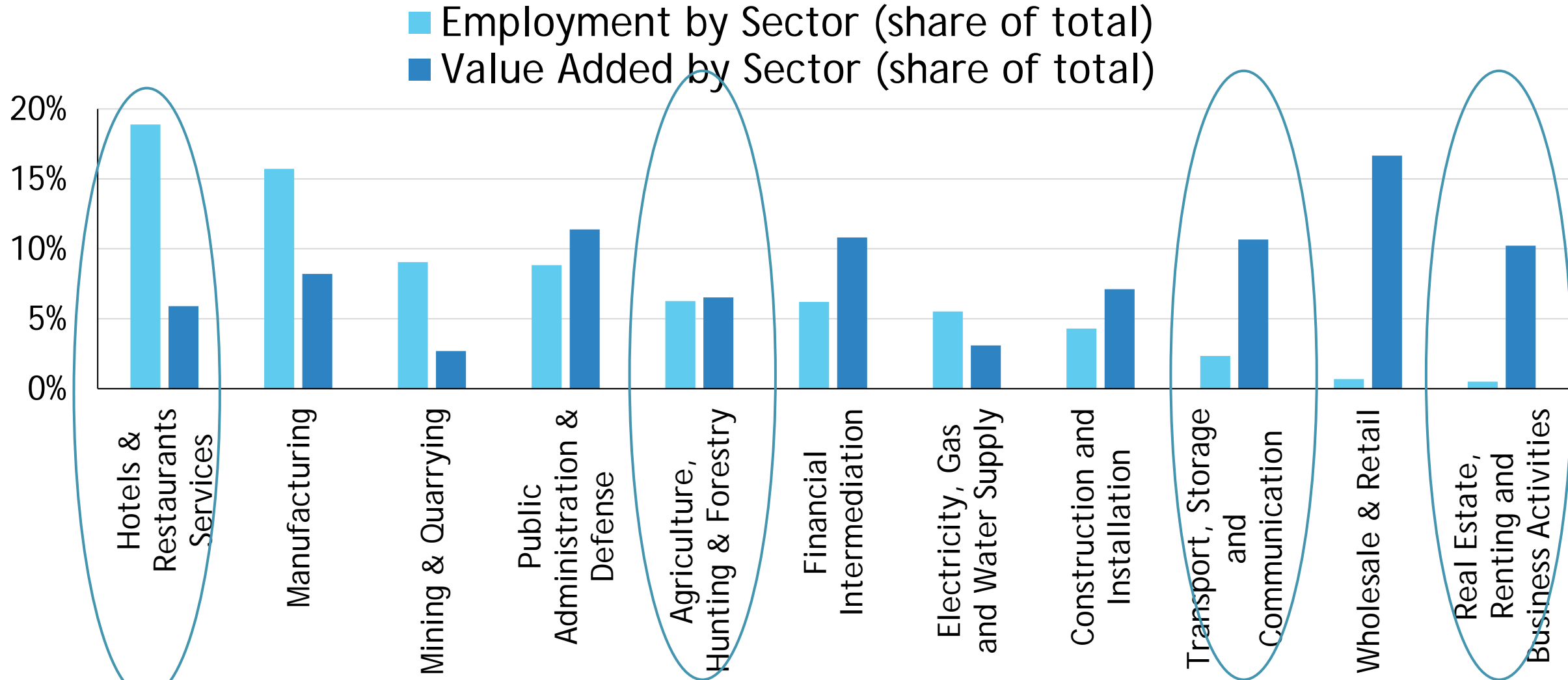
2. The main transmission channels and exposure of financial system

Climate Risk Exposures to the Financial Sector in Jamaica

Physical Risks	Economic Impact
<ul style="list-style-type: none">Increased frequency and severity of storms	Private and public sector costs to repair damage; lost revenue from decreased economic activity.
<ul style="list-style-type: none">Rising temperatures	Reduced agriculture output, higher energy cost.
<ul style="list-style-type: none">More frequent flood and drought	Volatility in agricultural output and prices, reduced tourism output
<ul style="list-style-type: none">Rising Sea Levels	Reduced tourism income and economic activity from coast line activities, increased infrastructure and housing cost.

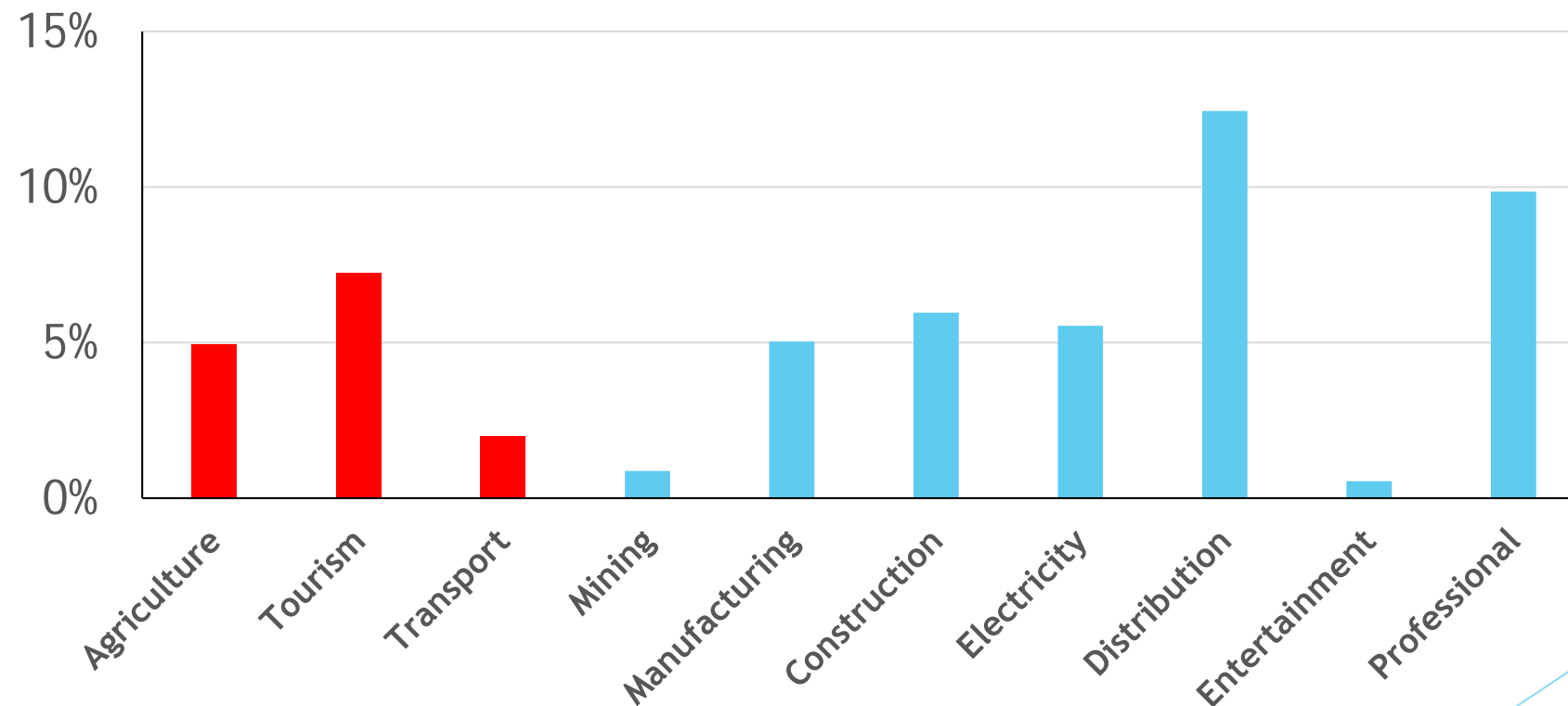
Transition risks are viewed to be low as we don't expect immediate or sudden changes in asset values from a shifting of investor or consumer preferences.

Climate related risks can have broad-based impact on various economic assets and activity.



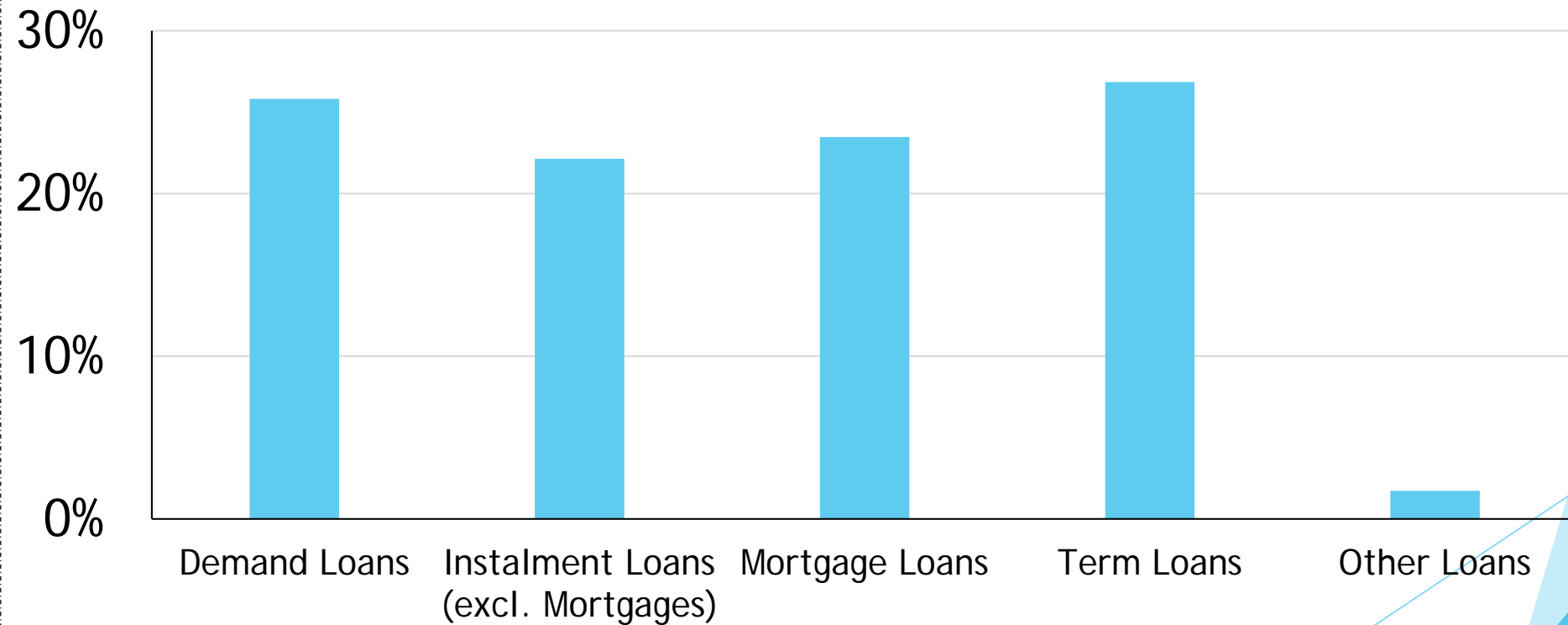
Banks' asset exposure to climate risk sectors are not insignificant.

Composition of Non-personal Loans



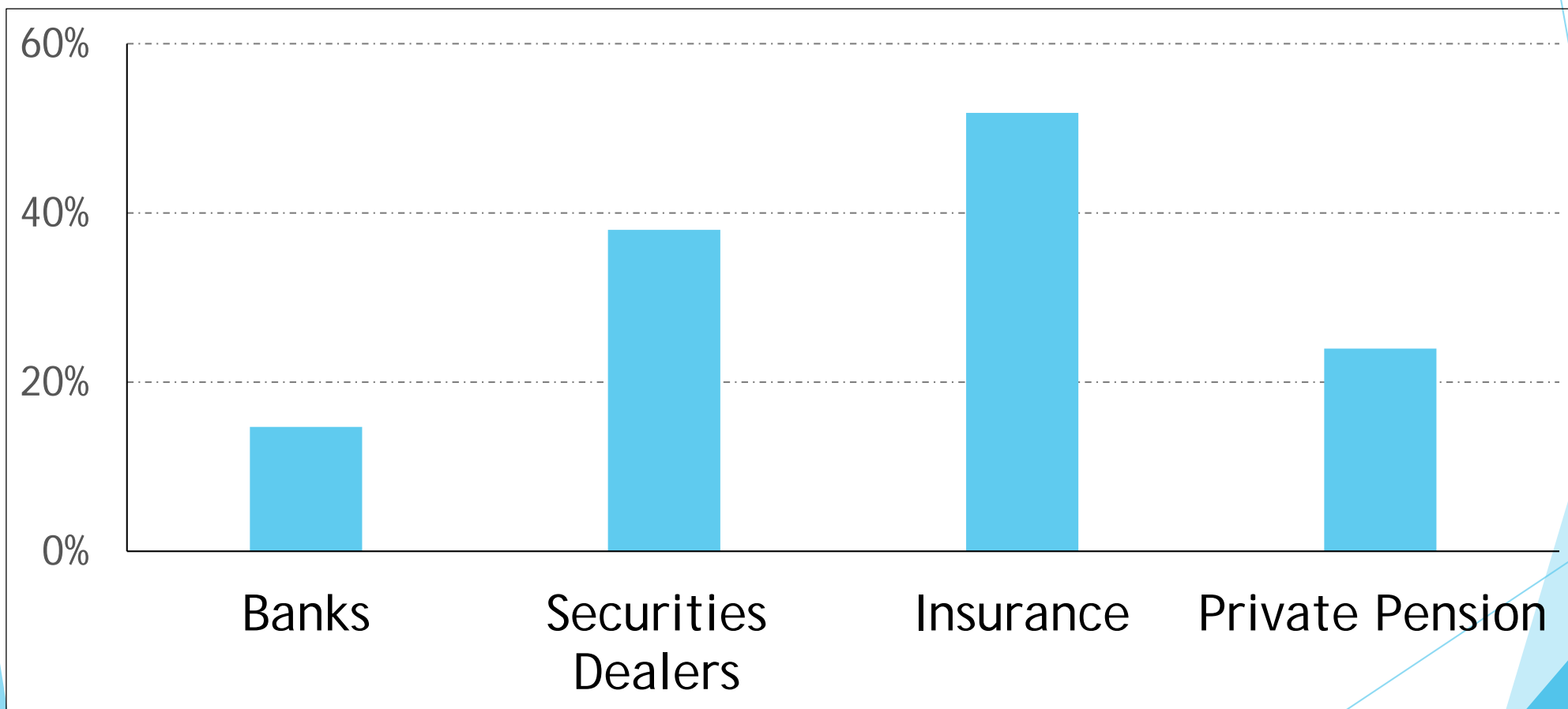
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Loan Profile of Deposit Taking Institutions



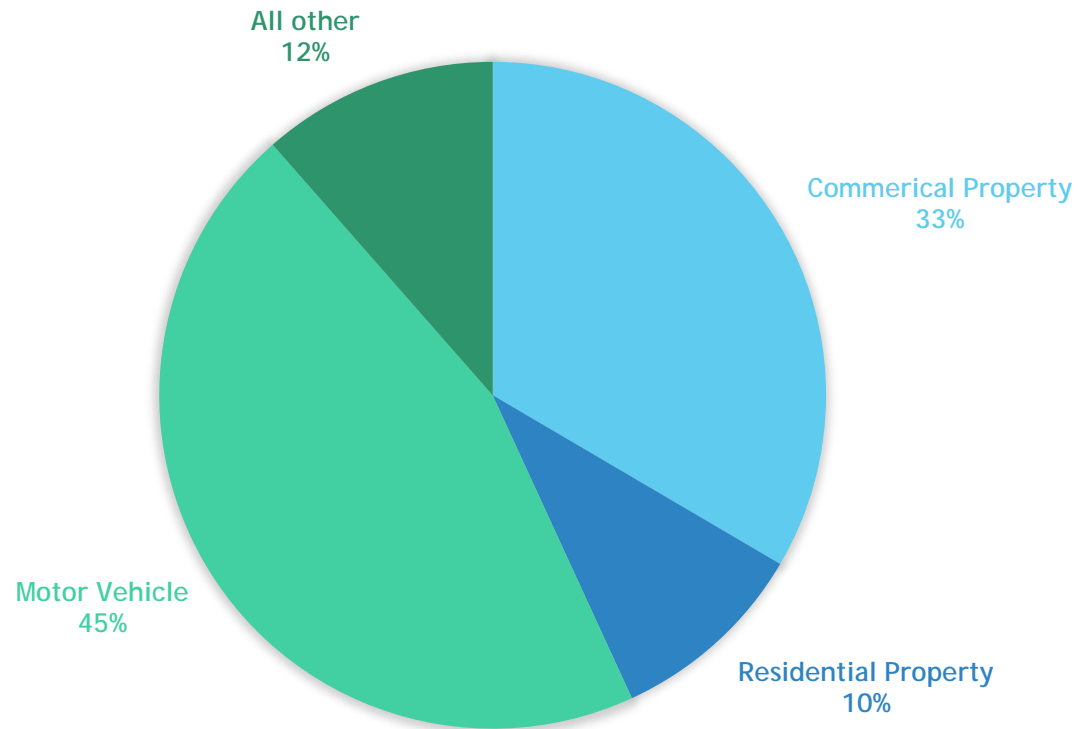
There is some exposure to sovereign risk.

Financial Sector Exposure to Government



General insurers account for 2.0 percent of financial system assets

GENERAL INSURANCE COVERAGE



Outline

3. Framework for Assessing Risk to Financial Stability

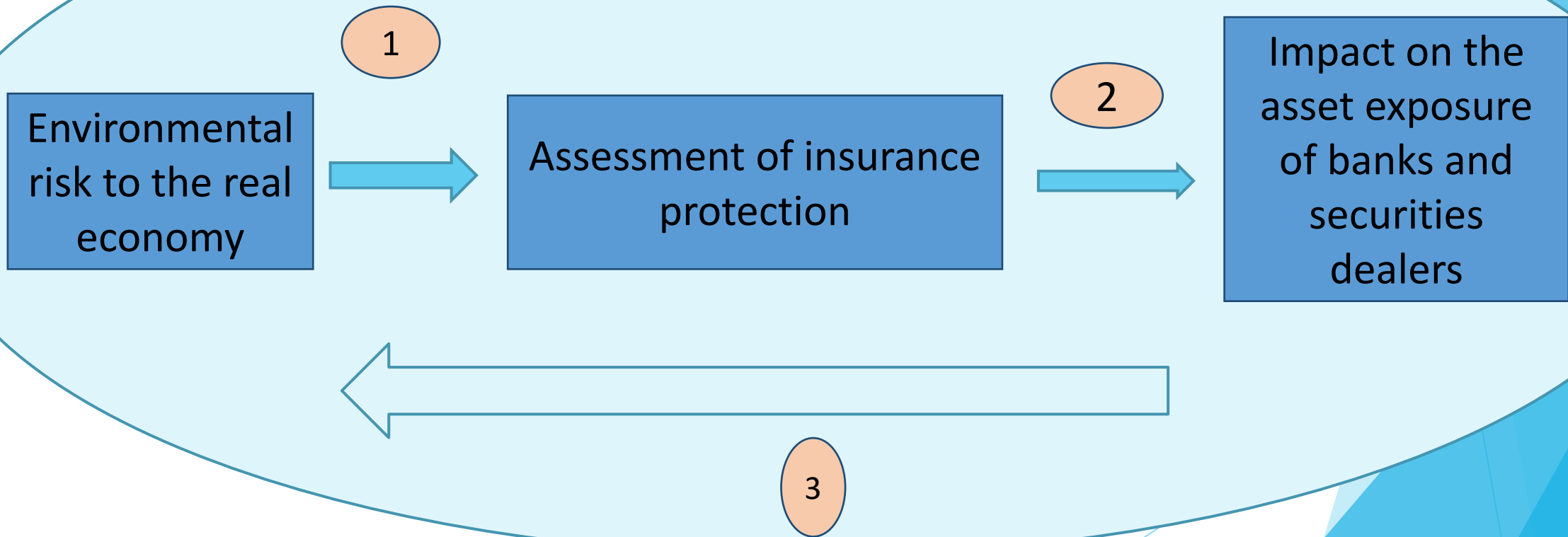
Framework for Assessing Risk to Financial Stability

- Environmental risk assessment has been based on scenario analysis and the stress testing of financial institutions.
- The impact of a category 5 hurricane on GDP, consumer prices, equity prices, interest rates and deposit withdrawals are simulated and fed through the balance sheet of securities dealers and banks.
- The impact on government debt we assume will be moderate with the implementation of the government's National Disaster Risk Finance programme. We also assume that monetary policy will not respond to the supply shock.

Sample Stress Test Results from Environmental Scenario

Pre-shock non-performing loans (\$000's)	\$363,054
Post-shock non-performing loans (\$000's)	\$381,612
Pre-shock CAR (%)	16.2
Post-shock CAR (%)	16.2

Next steps.....



Next steps.....

COASTAL VULNERABILITY TOPOGRAPHICALLY LOW-LYING REGIONS



Data Gaps

- Forward looking estimates of the valuation effects of climate change.
- Loans and investment data based on geographic location.
- More detailed information on insurance coverage by risk type and location.



Thank You

Recommendations by the Network for Greening the Financial System	Comments
1. Monitoring climate related risks	Understand and obtaining more precise projections and measurements of environmental risks to the various sectors through collaboration with University.
2. Developing taxonomies	Begin to identify financial exposures to climate risk related assets.
3. Promoting disclosures	Look to assess standards and rules for the development of financial instruments to encourage more investment in 'green' assets and other forms of environmentally sustainable economic activity.
4. Including climate related risk into prudential frameworks	Ensuring awareness by the financial industry of the implications of environmental risks and on the developments in global markets related to green finance. This could include providing information on the internationally established principles of responsible banking, investment and insurance.