



From the Desk
of the
Chief Economist

BANK ISLAM

DECEMBER TRAGEDY WORST FLOOD : MALAYSIA IS YET TO PREPARE, AGAIN

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ECONOMIC RESEARCH

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TABLE OF CONTENTS

 1	Overview	Page 3
 2	What's happening?	Page 5
 3	What are the impacts?	Page 10
 4	Impacts in the past events	Page 12
 5	Conclusion	Page 13

OVERVIEW

THE RISK OF FLASH FLOODS HAS BECOME ELEVATED

- ✓ Large floods usually occur in the Eastern states of Malaysia due to prolonged rainfall, especially in the month of December.
- ✓ However, the significant heavy rains which began in mid December last year had resulted in flooding in other states including Selangor, Johor, Pahang, Perak, Negeri Sembilan, Melaka and Sabah.
- ✓ This has caused destruction to properties and infrastructure, as well as loss of human lives and disruption in supply chain.
- ✓ According to the Department of Statistics Malaysia (DOSM), **the country suffered an overall loss of RM6.1 billion** due to the unusual floods that hit by the end of 2021 and in early 2022.
- ✓ **Such events expected to happen more frequently in the future, particularly in areas of rapid urbanisation* and increase the risk of floods in the country.**



Source: Irrigation and Drainage Department (IDD)

* <https://www.thesundaily.my/home/no-excuse-for-poorly-coordinated-disaster-management-XM8680462>

OVERVIEW

MAJOR FLOOD EVENTS IN MALAYSIA

Date / Year	Incident	Property, Material, Crop or Other Losses (in USD)
1926	Flood known as "The storm forest flood".	Thousands of hectares of forests destroyed.
1971	Known as "1971 Kuala Lumpur Flood".	More than USD65.2 million
December 1996	Floods brought by Tropical Storm Greg in Keningau (Sabah State).	USD300.0 million
2000	Floods caused by heavy rains in Kelantan and Terengganu.	Millions
December 2004	Asian Tsunami.	Millions
December 2006 & January 2007	Floods in Johor State.	USD489.0 million
2008	Floods in Johor State.	USD21.2 million
2010	Floods in Kedah and Perlis.	USD8.5 million (Aid alone)
2011 & 2012	La Nina in 2011 and 2012 which brought floods.	NA
December 2021	Heavy and continuous rainfall over two days which started on 17 December resulting in severe floods was said to be the worst in 50 years affected Hulu Langat, Shah Alam, Klang and other parts of the country.	Thousands of houses, cars and other properties were destroyed.

Sources: Various studies

WHAT'S HAPPENING?

RAINFALL DISTRIBUTION IN DECEMBER 2021 WAS AN ANOMALY

Malaysia experiences two monsoon* seasons:



Southwest Monsoon (SWM)- May to September

- ✓ Normally signifies relatively drier weather.



Northeast Monsoon (NEM)- November to March

- ✓ Brings heavy rainfall, specifically to the east coast states of Peninsular Malaysia such as Kelantan, Terengganu and Pahang.

*Monsoon is defined as a seasonal wind alteration accompanied by corresponding changes in precipitation.

December last year was an anomaly with flash floods occurred in many states, making it the worst flood since 1971.

Rainfall Distribution (mm) during 18 December

States	Year				Y-o-Y Change
	2018	2019	2020	2021	
	Dec-18	Dec-18	Dec-18	Dec-18	
Selangor	0.03	33.90	13.50	380.00	2714.81%
Selangor - Wilayah	0.04	33.86	13.53	316.50	2239.25%

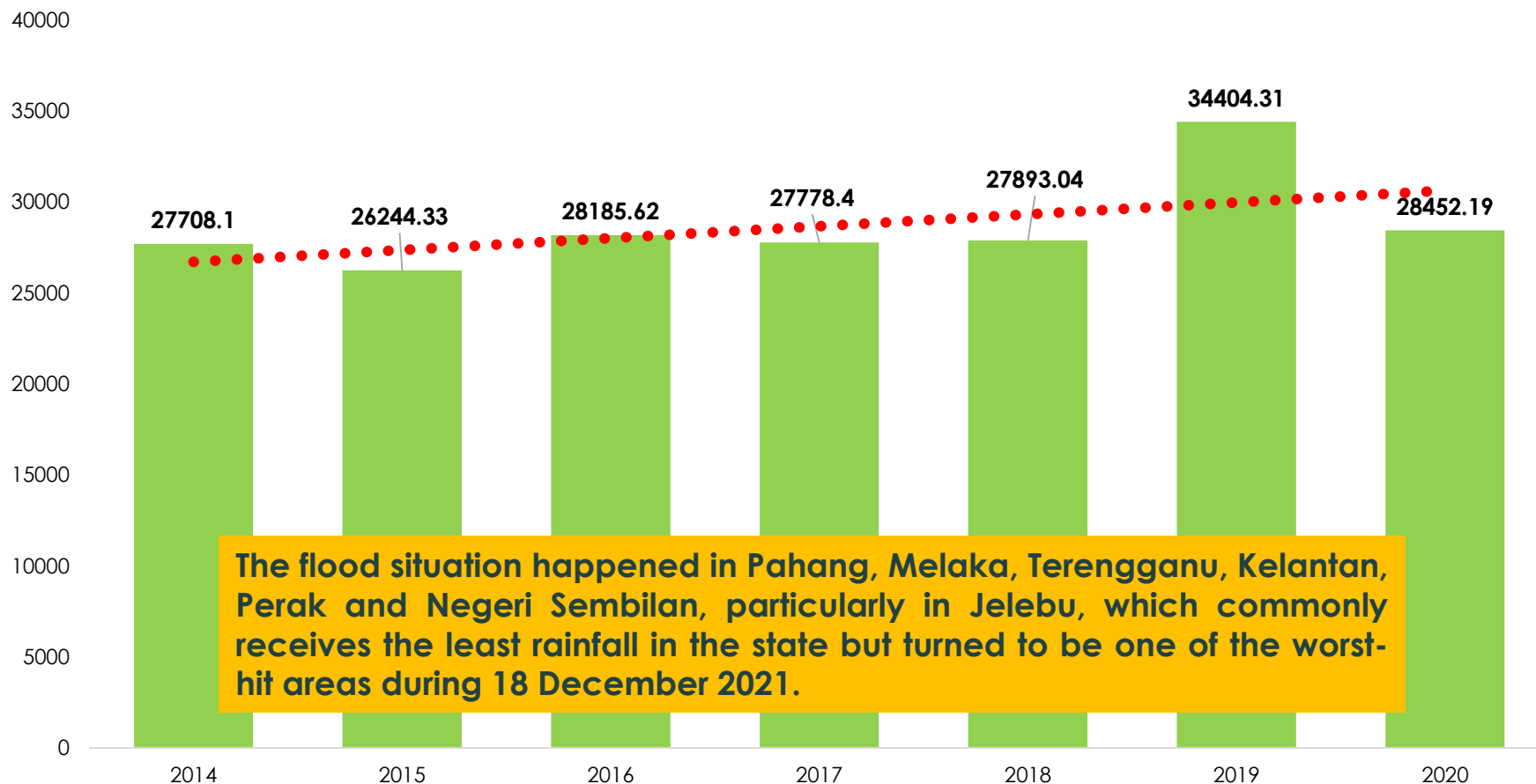
Sources: National Hydraulic Research Institute of Malaysia (NAHRIM) & News

The continuous downpour which lasted 24 hours over the weekend (i.e. 18 December) was equal to the average rainfall for a month.

WHAT'S HAPPENING?

RAINFALL DISTRIBUTION HAS BEEN ON AN UPTREND

Total of Rainfall in Peninsular Malaysia, mm



The flood situation happened in Pahang, Melaka, Terengganu, Kelantan, Perak and Negeri Sembilan, particularly in Jelebu, which commonly receives the least rainfall in the state but turned to be one of the worst-hit areas during 18 December 2021.

Source: National Hydraulic Research Institute of Malaysia (NAHRIM)

WHAT'S HAPPENING?

UNPRECEDENTED FLOODS IN SELANGOR

- ✓ Many areas in **Selangor submerged in water**, rendering major roads impassable and forcing many victims to be evacuated to relief centres (PPS).
- ✓ The floodwaters in Taman Sri Muda, Shah Alam **subsided at a very slow rate due to jammed sluice gate** which was supposed to have a manual or hydraulic override to pump out water in the event of power failure.
- ✓ Experts reported that this was due to:
 - Continuous heavy rain
 - Unstructured urban planning
 - Poor maintenance of drainage system
 - Landslides
 - Monsoon transition



WHAT'S HAPPENING?

OLD DAM STRUCTURE IS ONE OF THE CAUSAL FACTORS

Dams in Malaysia

- ✓ **34 out of 103 dams are tagged as 'high' for natural disaster classification.**
 - ✓ Most of the dams were constructed between the year 1906 – 2012, having Bukit Merah Dam as the oldest and Bakun Dam as the latest.
 - ✓ Dams build in Malaysia are mainly operated for:
 - Water sources (61)
 - Hydroelectric (16)
 - Irrigation, drainage and flood mooring (16)
 - Agriculture (7)
 - Recreation (2)
-
- ✓ The flood that took place at Bertam Valley, Cameron Highlands has triggered concerns from many on the Emergency Response Plan (ERP) of the dam executed by TNB.
 - ✓ **Issues related to dam safety and management system include:**
 - Old dam structure
 - Climate change
 - Land use e.g., deforestation
 - Interference at dam water catchment areas
 - ✓ **Uncontrolled land use near the water catchment areas will cause:**
 - Landslides
 - Sedimentation that will reduce the capacity of a dam to hold water, and therefore, excessive water will overflow.

Tragedy Sultan Abu Bakar Dam, Ringlet

- ✓ In 2019, TNB was required to pay damages to 100 residents due to negligent in releasing water from the dam 3 times on the night of 23 October 2013.
- ✓ This has resulted in a disaster including the loss of 4 lives and property damages.
- ✓ TNB had only installed a water inflow measurement instrument at the dam after the incident, despite the dam having been built in 1963.



WHAT'S HAPPENING?

CLIMATE CHANGE IN SOUTHEAST ASIA

Impacts of Climate Change to Key Sectors in Malaysia

According to MOSTI (2020), by 2100, the following events will occur:



Prolonged Dry Spells

- Rice quality will be affected.
- Harms livestock health & productivity.
- Disrupts dairy production.
- A drop by 10% of rubber production.
- Fall in rice yields in the range of 5.9% - 30.9% if temperature increases by 2.0°C by 2050.



Rise in Sea Level & Sea Surface Temperature

- Saltwater intrusion & coastal erosion will occur and subsequently affects ports & jetties by 2050.
- Fish habitats & catches, and mangrove degradation will be affected.



Floods & Rise in Temperature

- Decreases palm oil production.
- Oil palm will be prone to floods, due to increase in area from 68,531 ha to 384,275 ha (+460%) in 2050.

ASEAN members conclude the following as the consequences of climate change*:

- ✓ High level of extreme poverty
- ✓ High dependency on sectors that are directly affected by climate change
- ✓ Pre-existing pressure from disasters
- ✓ High level of economic activity on coasts
- ✓ High propensity to migration
- ✓ High deforestation rate

* <https://asean.org/wp-content/uploads/2021/10/ASCCR-e-publication-Final-12-Oct-2021.pdf>

WHAT ARE THE IMPACTS?

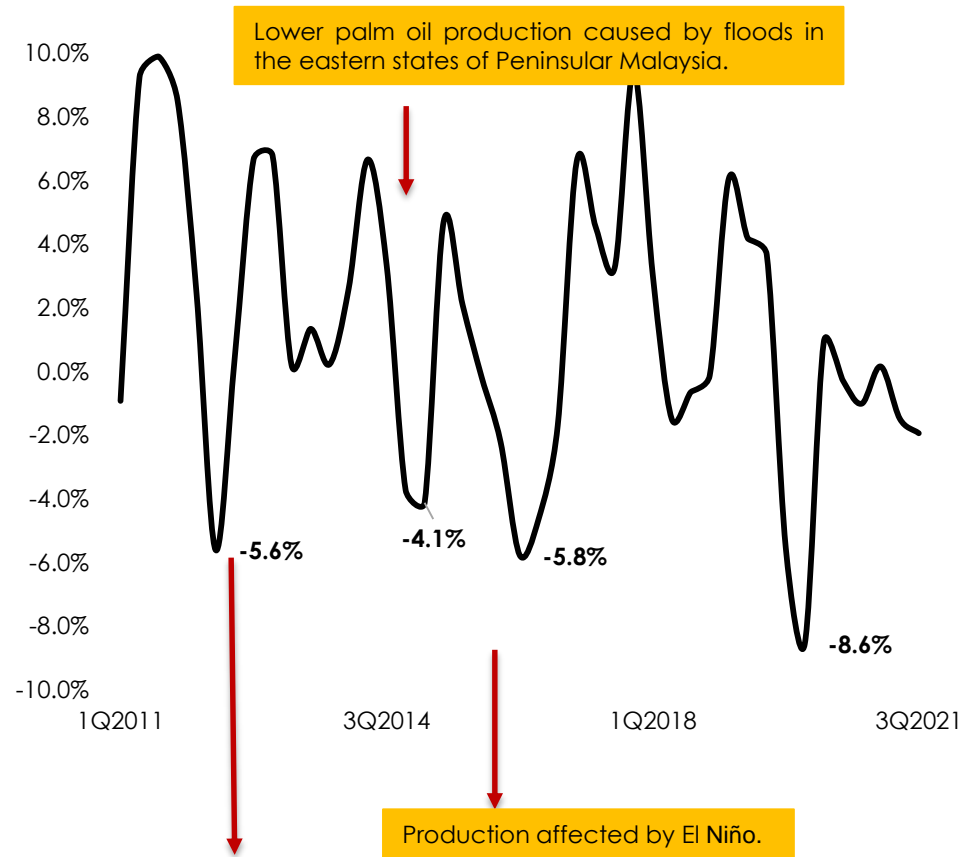
1. ECONOMIC SHOCKS

- ✓ **A clear indication of climate change-** The rainfall data reveals an increasing trend of rainfall in Malaysia (refer to page 6).
- ✓ Experts foresee that as global temperature rise, much more rain will fall in extreme downpours.
- ✓ **The warmer the atmosphere, the more moisture it can hold, which means rainfall will be greater and more intense.**
- ✓ **Severe flooding due to heavy rainfall-** Thus inflict a huge negative impact to the economy, society (public properties damage, death), businesses, as well as industrial activities.



Giant supermarket was among the businesses in Shah Alam which suffered extensive flood damage.

GDP: Agriculture, y-o-y%



Adverse weather conditions and plant disease, as well as ageing tree population.

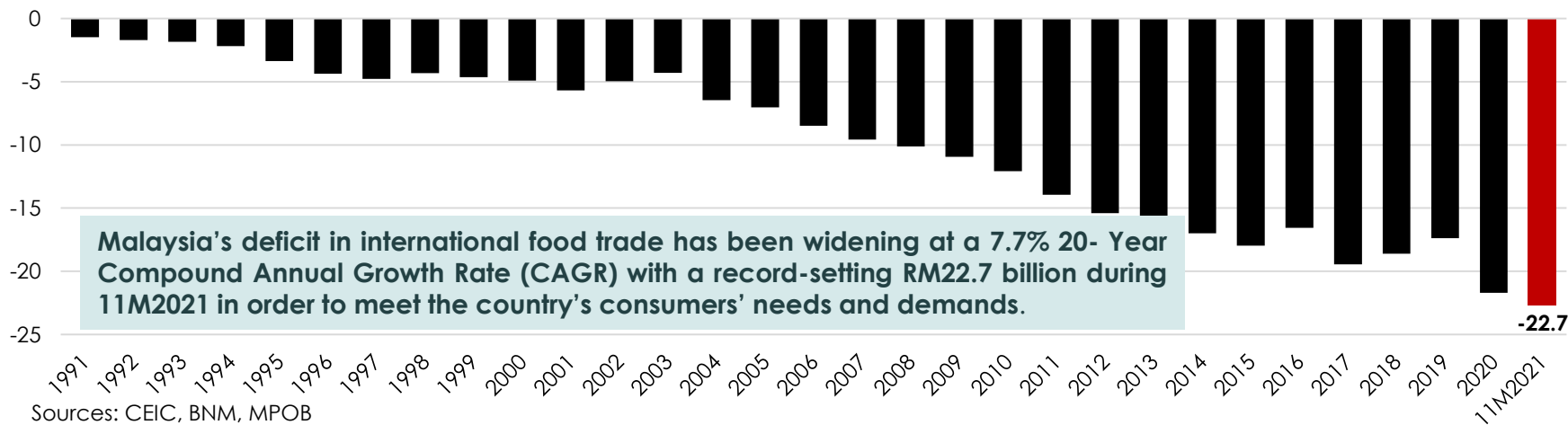
WHAT ARE THE IMPACTS?

2. RISING COSTS OF PRODUCTS



- ✓ Hence, the prices of goods could rise even higher at a time when **businesses are transferring their surging production costs to consumers following higher demand conditions and transportation costs.**
- ✓ Based on our computation, there is a positive correlation between consumer prices and rainfall distribution in Malaysia which currently stands at 64.0%.
- ✓ Apart from that, the ongoing pandemic has amplified the food price shocks by severely hampering food production and distribution.
- ✓ Therefore, severe flood events may increase the risk to the nation's food security at a time when the country is constantly relying on food imports for domestic consumption.

Trade Deficits of Foodstuff, RM Billion



THE IMPACTS OF MAJOR FLOOD

PAST EVENTS

Around 15 major flood events which took place since 1998, the “**December 2021 major flood**” event was one of the worst hydrological disaster to ever hit the country.

The intensity and frequency of natural disasters occurring throughout the world have been increasing at an alarming rate.

The risks are likely to amplify towards the well-being of society, environment and most importantly the economy.

Government needs to spend huge amount of resources to mitigate the issues.....

- ✓ To recall, the region affected by the flood which happened in 2014 suffered approximately RM 2.9 billion loss.
- ✓ A total of RM800.0 million of government allocation was needed for repairs and reconstruction of critical infrastructure such as schools, hospitals, roads and bridges.
- ✓ Already, **the allocation to mitigate flood events has risen significantly from RM3.0 million per year during 2MP (1971-1975) to RM16.0 billion during 12MP (2021-2025).**

CONCLUSION

WHAT DO WE THINK ABOUT THIS?

The importance of disaster management and mitigation:

- ✓ Even though the area of disaster management has received considerable attention due to the previous experiences, Malaysia is still not prepared for it due to poorly coordinated management.
- ✓ The recent flood has highlighted the need for better coordination among the government agencies, NGOs and businesses in order to ensure such calamities will be mitigated effectively.

Prepare for the impacts of climate change:

- ✓ In a grand scheme of things, the recent calamities would highlight the importance of adhering the Environmental, Social and Governance (ESG) principal, be it from economic policies and corporate strategy.
- ✓ The transition towards ESG is a lifelong journey as policy makers are still grappling with the common playbook that will be adopted by the industry players.
- ✓ Thus far, the investing community is at the forefront in respect to adopting the ESG principles. Based on the latest, United Nation Principles for Responsible Investment (UNPRI) statistics, the number of the signatories have increased more 4300 globally in 2021. This goes to show that accessing funds from the institutional investors may have to take the ESG matrix into consideration whenever a company decides to undertake a cash call exercise.
- ✓ We believe the Islamic Financial Institutions (IFIs) have the upper hand in this regard. Clearly, the ESG principles are very much in tune with the 5 Maqasid Shariah (Protection of Religion, Life, Property, Health and Lineage) that talks about 5 key principle. So it is almost a natural progression for the IFIs.



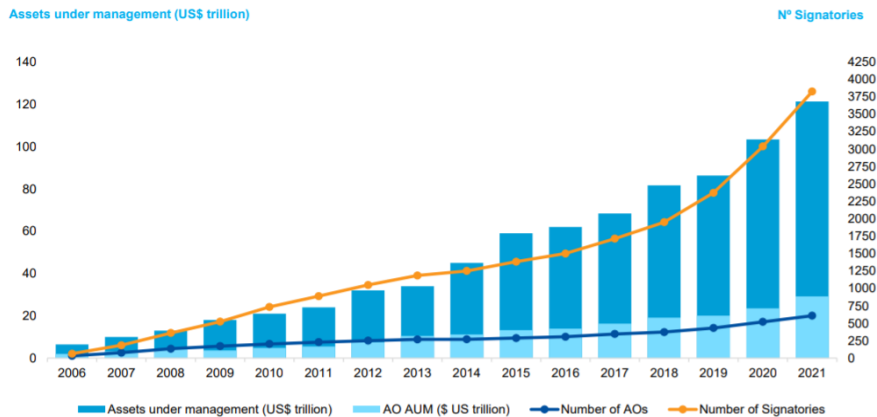
CONCLUSION

WHAT DO WE THINK ABOUT THIS?

Rising number of PRI signatories globally indicate higher adoption of ESG principles:

PRI signatory growth in 2020 - 2021

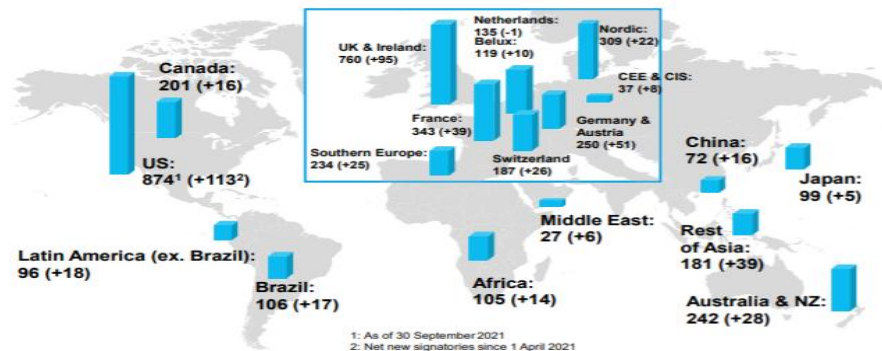
AUM, total number of signatories and number of asset owner signatories all increase



*Total AUM include reported AUM and AUM of new signatories provided in sign-up sheet that signed up by end of March of that year.

More than 4,300 investors worldwide

Have signed the Principles for Responsible Investment



1: As of 30 September 2021
2: Net new signatories since 1 April 2021

UNPRI signatories in Malaysia

Institution	Signature Date
Bintang Capital Partners	29-Dec-21
Bee Alternatives Limited	24-Aug-21
Pheim Asset Management Sdn Bhd	17-Aug-21
Crea8 Capital	13-Oct-20
Principal Asset Management (SEA)	3-Dec-19
Singular Asset Management	10-Oct-19
BIMB Investment Management Berhad	26-Jun-19
Employees Provident Fund	1-Apr-19
Xeraya Capital	23-Mar-18
Navis Capital Partners Limited	21-Feb-18
Retirement Fund (Incorporated) (KWAP)	7-Feb-18
Khazanah Nasional Berhad	1-Feb-17
Corston-Smith Asset Management	6-May-08

✓ ESG has become the integral part of investing principle. If the companies decided not to address the ESG risks, they may find their business operations, financing costs and share price performance will be impacted in a profound manner.

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An aerial photograph of a city skyline at sunset, with a prominent pink bar at the bottom. The sky is filled with soft, golden light and scattered clouds. The city features numerous high-rise buildings, with a particularly tall, slender skyscraper on the left. A highway with traffic is visible in the foreground, winding through the city. The overall mood is warm and serene.

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