Stranded Assets Networking Event
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Stranded Assets and Environment-related Risks

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What are stranded assets in the environmental context?

- Unanticipated or premature write-down, devaluation or become liability.
  - Creative destruction
  - Technology and regulation
  - Extreme events

- Confluence of new risks may make some assets more prone to stranding.
  - Significant and accelerating

- Rarely understood or considered in decision making, especially amongst investors.

- Significant benefits associated with managing these risks.

Environmental challenges (e.g. climate, water, biodiversity)

Litigation & changing statutory interpretations (e.g. directives, state-aid, carbon liability, fiduciary duty)

Changing resource landscapes (e.g. shale, fertilisers)

Falling clean technology costs (e.g. solar and onshore wind)

New government regulations (e.g. carbon pricing, air pollution regulation)

Evolving social norms (e.g. divestment) and consumer preferences

Climate change

Loss events worldwide 1980 – 2013

Number of events

- Geophysical events (Earthquake, tsunami, volcanic eruption)
- Meteorological events (Tropical storm, extratropical storm, convective storm, local storm)
- Hydrological events (Flood, mass movement)
- Climatological events (Extreme temperature, drought, forest fire)

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Climate change

Prices and resource availability

Commodity prices have increased sharply since 2000, erasing all the declines of the 20th century
Government regulations

- Over the past decade climate change regulations globally have increased rapidly.

- According to Globe International, 88% of global CO2 emissions come from 66 countries.

- These countries currently have 487 laws pertaining to climate change, up from <100 in 2002, and <40 in 1997.

New technologies – clean vs fossil generation investment (bn $)

Source: Globe International, Globe Climate Legislation Study 8th edition

Source: Bloomberg New Energy Finance
New technologies – LCOE Q2 2009 vs Q1 2013, per MWh

Source: Bloomberg New Energy Finance

New technologies – EU Utility Share Prices

Source: Bloomberg
Technologies move faster than projections

Global share of renewables in electricity generation


Why do stranded assets matter?

- **Size of potential VaR and risk at variety of levels, sectors and geographies**
  - e.g. listed and unlisted, equity, debt, sovereign, business models, and development strategies

- **Stranded assets are beginning to have real impacts today**
  - Firms in many sectors have been left with significant asset impairments and write-downs, necessitating changes in strategy

- **Asset stranding is occurring in unexpected and counterintuitive ways in some sectors**
  - Domino effect and correlation

- **Asset stranding may increase the costs of achieving sustainable and resilient economies, for firms, governments, and society**
  - Potential negative impacts on efficient transitions to sustainable business models, the ability of governments to facilitate effective low-carbon transitions, and the stability of the global economy and financial system
Stranded assets – A developing literature

'Unburnable Carbon' – significant attention, what impacts?

- Implications of "carbon bubble" imposed by climate policy for the value of fossil-fuel industry has inspired debate

Nuanced perspective?

Components of value, sectoral and geographic approaches

- Acknowledgement of environment-related risks
- Increasing involvement of actors: Banks, Analysts, Universities, IGOs
- Examination of more detailed risk, impact, and response profiles
- Shift beyond equity to examining debt, capex, cost of capital
- Differentiation among assets, projects, products – move to cost-curve approach

Mixed actions and responses across the investment chain

- Increasing public awareness and concern in different countries/regional markets
- Development of fossil-fuel divestment campaigns in the US and EU
- Shareholder resolutions, notable divestment actions, pressure for increased performance

Criticisms and counter arguments

- "Short term valuations insulate investors from these long term risks."
  - Counter argument: Some environment-related risk factors are actually quite immediate, with complex relationships emerging.

- "Markets already appropriately value environmental risks."
  - Counter argument: Vast quantities of evidence show that global financial markets are mispricing or ignoring these risk factors.

- "This is just the same as creative destruction elsewhere in the economy, why care?"
  - Counter argument: Confluence of related risk factors is significant; drivers, consequences and responses to such stranding are still not understood.

- "Even if there are stranded assets, markets will have time to readjust."
  - Counter argument: Flexibility depends on time horizons; exits always appear bigger than they actually are and liquidity could be a major problem under certain scenarios.
Systemic risk?

- Levels of exposure across different parts of the financial and economic systems likely to be very significant.
  - Listed equities are the only area where we currently have ok data.

- Bank of England tests:
  - Exposures of financial institutions to carbon-intensive sectors are large relative to overall assets;
  - Impact of policy and technology is not already being priced into the market, either through lower expected returns or higher risk premia;
  - Subsequent correction would not allow financial institutions to adjust their portfolios in an orderly manner.

- What could central bankers and financial regulators do?
  - Track exposure; stress testing; macro-prudential tools to deflate exposure.

Managing risk

- Need to understand whether risks are material and when they might be material.
- Monitor, measure, track.
- Scenarios and stress testing.
- Time horizons, sequencing and correlations.
- Quantitative vs qualitative (risk vs uncertainty).
- Embed in credit risk/due diligence processes.
Application depends where you are in the investment chain

- Government / Regulators
- Asset Owners (Trustees, Beneficiaries, etc.)
- Investment Managers
- Companies
- Beneficiaries
- Citizens
- Customers / Employees

Source: Russell Investments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.
Panel Discussion

Discussion:

Where might the risks of asset stranding increase, from the actions of governments or others to mitigate climate change, from litigation and/or from investor/consumer concerns?

How should we help our clients to understand and respond to the risk?
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