Finance and climate change:
What role for central banks and financial regulators?

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Outline of the talk

- The rationale
  - Why should central banks care about climate change in the first place?
  - Climate-induced damages and transition financial risks
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- Two main potential contributions:
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  1. Research:
     - Empirical assessment of exposure to climate-related risks
     - Assessment of wider socioeconomic implications

  2. Policy:
     - Disclosure of climate-related risks by companies and investors
     - Align policy toolkit to climate-related objectives
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- Conclusions
  - It’s a matter of mandate: high-income vs emerging economies
  - Looking forward
Climate-related financial risks

▶ Climate-induced disruptions
  ▶ Economic losses, destruction of physical assets, financial instability
  ▶ Transition to low-carbon society required
Climate-related financial risks

- Climate-induced disruptions
  - Economic losses, destruction of physical assets, financial instability
  - Transition to low-carbon society required
- Transition risks
  - Large-scale structural shift to new technologies and process
  - A network of assets at risk of stranding
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The quest for a rapid and smooth transition

A smooth transition won’t happen by itself → Policies needed
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Is there any role for central banks and financial regulators?
1. Research

First objective: assess the relevance of the issue

How exposed is the financial system to climate-related risks?

What could be the wider socioeconomic implications of these risks?

Develop methodologies to measure climate-related risks

Central banks (DNB, BoE); academic research (Battiston et al. 2017); think-tanks (2dii)

Rating agencies mainly focusing on ESG risks

Issues: deep uncertainty; lack of empirical data; developing methods

Develop modelling tools to study socioeconomic impacts

What impacts on growth, employment, distribution?

Current modelling (DSGE, IAMs) unable to grasp transition complexity

Alternatives: Stock-Flow Consistent models and Agent-based Modelling (Burgess et al. 2016; Turrell et al. 2016)
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- Two areas of potential intervention:
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  - Mitigate transition financial risks
  - Facilitate low-carbon financing
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<table>
<thead>
<tr>
<th>Concept</th>
<th>Current applications</th>
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</table>
| Assessment of climate-related risks | De Nederlandsche Bank\textsuperscript{3,29}  
Bank of England\textsuperscript{32} |
| Disclosure of climate-related risks | Task Force on Climate-related Financial Disclosures\textsuperscript{33}  
French Energy Transition Law\textsuperscript{65} |
| Climate-aligned prudential regulation policy | Banque du Liban\textsuperscript{69}  
Banco Central do Brasil\textsuperscript{69} |
| Green central bank financing | Bangladesh Bank\textsuperscript{69} |
| Lending quotas | Reserve Bank of India\textsuperscript{69}  
Bangladesh Bank\textsuperscript{69} |
| ESG factors in asset eligibility criteria | Only for own purchase, e.g. De Nederlandsche Bank\textsuperscript{67}, Norges Bank\textsuperscript{48} |
| Green Quantitative Easing | Only indirectly through development banks’ assets, e.g. European Investment Bank bonds\textsuperscript{51} |
Disclosure of climate-related risks

- Develop standardised methods of climate-related risk reporting
- Task Force for Climate-Related Financial Disclosures
- French Energy Transition Law (Art. 173)
- Industry-led initiatives

Availability of good data essential and fits with the neutrality narrative

However:
- Enough to achieve smooth transition?
- If systemic risks found; what then?
- Financial markets may not fully internalise risks into asset prices
- Central banks not setting example to follow
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2. Climate-aligned financial regulation

- Macro- and micro-prudential regulation
  - Reserve, liquidity, and capital requirements; loan-to-value ratios; ceilings on credit growth; others
- Several central banks now in charge of financial regulation
- Negative impact on sustainable investment?
- Climate-aligned prudential regulation
  - Differentiate prudential tools depending on lending destinations
  - Include climate-related risks in risk-weighted prudential tools
- Some applications in emerging economies
  - Banque du Liban: differentiated reserve requirements
  - Banco Central do Brazil: banks to incorporate ESG criteria in capital requirements
- Some political traction in high-income regions
  - EU High-Level Expert Group on Sustainable Finance
  - European Supervisory Agencies to include ESG criteria
- Central banks questioned (recent Draghi/Carney responses)
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- Potential contrast with prudential objectives
- Avoid a 'green bubble'
- Calibrate the wedge between high-carbon/low-carbon requirements
- Needs to be implemented at investment level
- Incentives to fossil-based companies willing to shift
- Would prudential regulation really act as a constraint?
- Reserve requirements don’t in high-income economies
- Capital requirements?
- But: would fit with the financial instability argument
- If climate financial risks relevant, this would justify intervention
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3. Climate-aligned central bank policies

- Align central bank policies to climate-related goals
  - Focus shifted more to financing objective
  - Monetary policy (QE), collateral framework, liquidity, credit

  - Two shades of ‘Green QE’:
    1. CBs to purchase low-carbon financial assets
    2. Incorporate climate-related risks in asset eligibility criteria

- Mandate limits, overburden, risks to price/financial stability
- But: indirect green QE possible through development banks
  - E.g. 10% ECB purchases in supranational entities

- Collateral framework: eligibility criteria affect asset desirability

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- Emerging economies proactive in pushing low-carbon financing
  - Financing schemes
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  - ‘Lending priority sectors’, including ‘environment and energy businesses’
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- Reserve Bank of India
  - Credit quotas to ‘priority sectors’ (include renewable energy)
- Bangladesh Bank
  - Preferential refinancing lines to commercial banks for their green loans
  - Minimum 5% lending quota to green sectors
Some conclusions

Form and strength of interventions will depend on:

- Mandate of the central bank
- Interpretation given to the mandate
- Willingness of central banks to push its boundaries

High-income economies:
- Neutrality; limited mandates and policy tools
- Internalise risk and limit transition disruptions
- Disclosure, risk assessment, stress testing

Emerging economies:
- Alignment to development goals; broader mandates and tools
- Facilitate financing low-carbon activities
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▶ In high-income economies: no way around neutrality
▶ No winner-picking, except when seriously needed
▶ Climate crisis precondition for intervention?
▶ Risk assessment is neutral
▶ Develop methodologies of climate-related risk assessment
▶ Exposure and socioeconomic implications
▶ If risks found, include them in normal central banking operations
▶ Prudential requirements, collateral framework, asset purchases
▶ At the moment: no comprehensive climate risk assessment methodology
▶ Rating agencies: timid advances on ESG risk; climate risks are different
▶ Is it possible to create reliable assessment? Data availability issue
▶ Lack of macroeconomic modelling up to the task
▶ Could this be the main role of central banks?
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