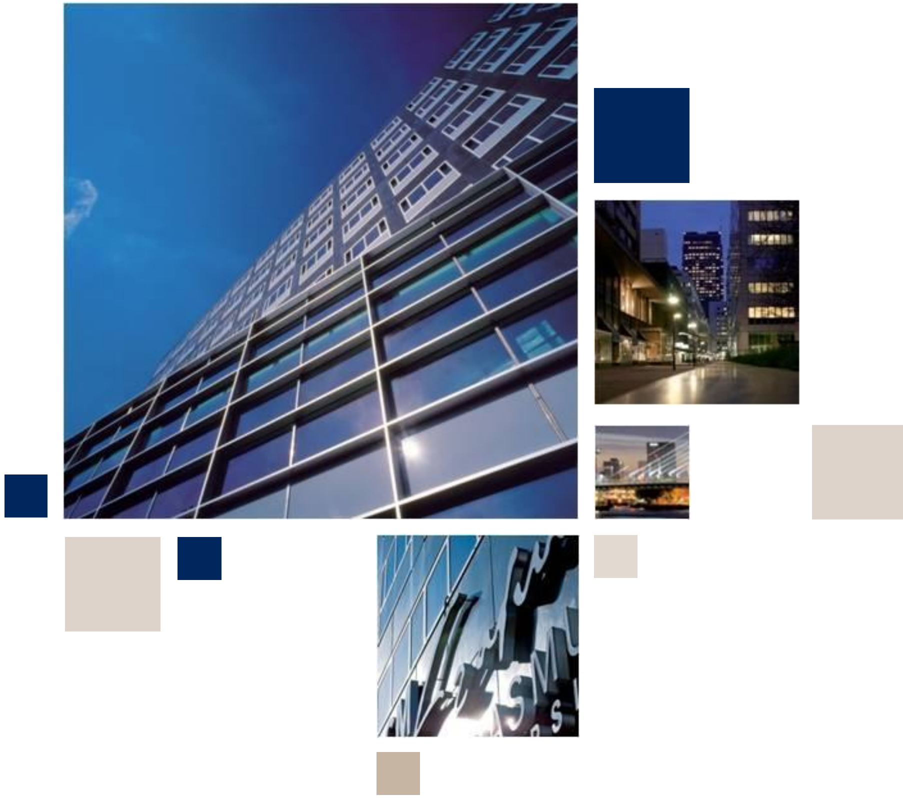
ROTTERDAM SCHOOL OF MANAGEMENT
ERASMUS UNIVERSITY

# Greening Monetary Policy



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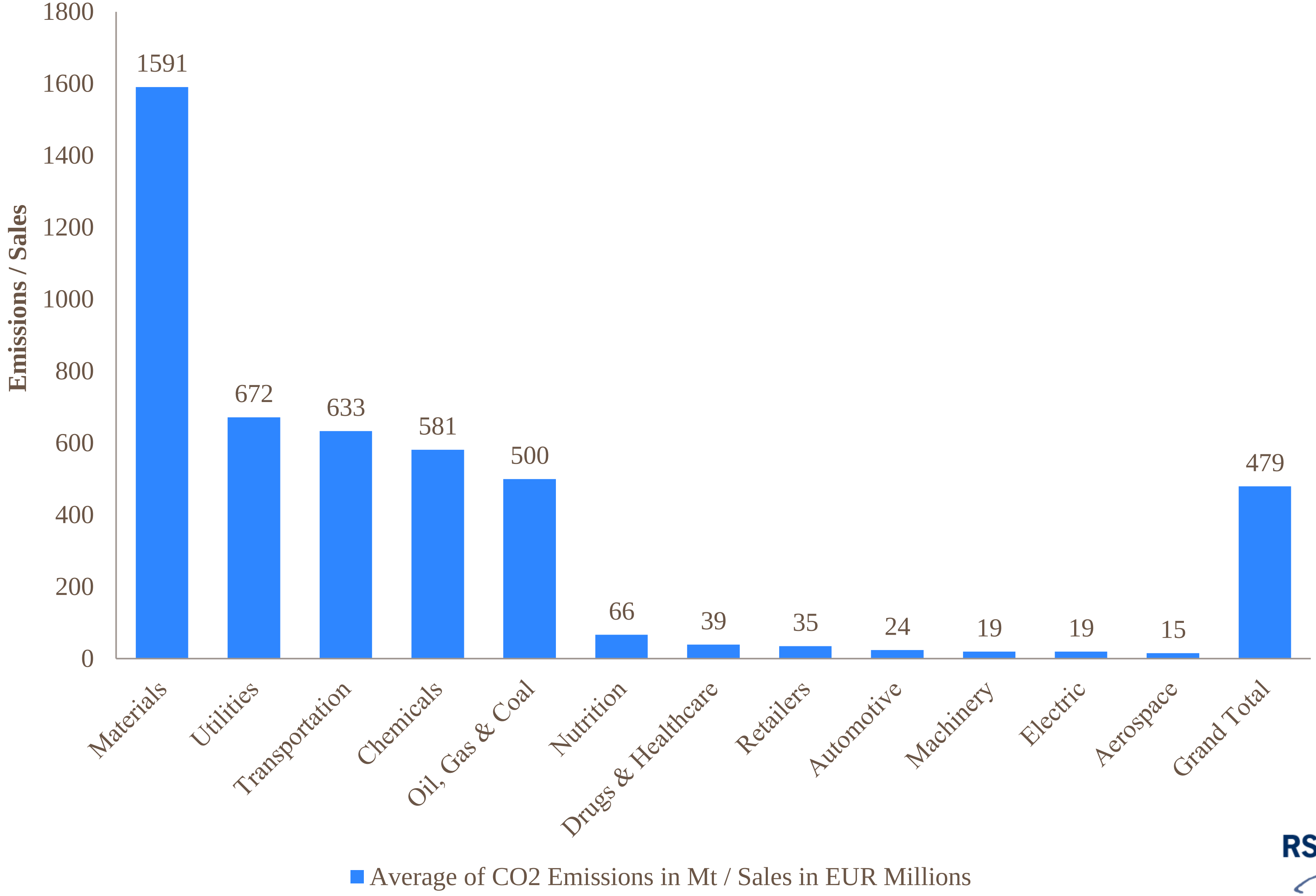
# Agenda

1. Market neutrality

2. How to do it?
   - No interference with price stability
   - Greening operations: tilting approach

3. Concluding reflections

# Average carbon emissions by industry



# Proposal

- Technical approach towards asset / collateral framework
  - Eligibility criteria for assets and collateral
  - Example: fully accepted that CBs have a credit risk policy in operations
  - Similarly, CB can adopt a low carbon policy in operations

# No interference with price stability

- Tinbergen rule – one policy objective for each instrument
  - ➢ Stage 1: policy decision is taken (interest rate, currency composition reserves or collateral)
  - ➢ Stage 2: implementation following operational procedures (e.g. eligibility criteria for assets and collateral)

- Two conditions to avoid disruptions in transmission mechanism
  1. No adjustments in asset mix, currency denomination and maturity
  2. Keep list of eligible assets as broad as possible to minimise impact on markets

# Greening operations

- Support general policies EU: transition to low carbon economy
- Indicator is carbon emissions of company *i* : $CI_{i,t} = Emissions_{i,t} / Sales_{i,t}$
- Which general ESG method?
  1. Negative screening
  2. Best in class
  3. Portfolio tilt towards low carbon
- We take 3. tilting approach as objective is to move to low carbon economy without being distortive (i.e. keep broad asset base)

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# Tilting towards low carbon

- Tilting portfolio shares: $S^{cb}_i = (\mathbf{1 + pt_i})\, S^m_i$ (pt is tilting factor: $\Sigma_i\, pt_i = 0$)
- Additional haircut $a_i$ on collateral: $V^c_i = (1 - (\mathbf{1 + a_i})\, h_i)\, V^m_i$

| Carbon category | Portfolio tilt (pt) | Additional haircut (a) | Carbon intensity | |
|---|---|---|---|---|
| | | | Companies (tertile) | Houses (eco-label) |
| **Low** | 0.75 | 0 | Bottom | A, B |
| **Medium** | -0.25 | 0.1 | Middle | C, D, E |
| **High** | -0.50 | 0.2 | Top | F, G |

# Tilting of corporate bond portfolio

| Carbon category | Carbon intensity | Fraction in market portfolio | Carbon intensity market portfolio | Fraction in central bank portfolio | Carbon intensity central bank portfolio |
|---|---|---|---|---|---|
| Low | 79.5 | 0.33 | 26.5 | 0.58 | 46.4 |
| Medium | 692.3 | 0.33 | 230.8 | 0.25 | 173.1 |
| High | 3,916.6 | 0.33 | 1,305.5 | 0.17 | 652.8 |
| Portfolio | | 1.00 | 1,562.8 | 1.00 | 872.3 |
| Reduction | | | | | 44.2% |

# Outcome

- Would low carbon bias support the general policies of the EU (i.e. speed up transition to low carbon economy)?
  - Yes, increased eligibility assets or relatively lower haircut collateral generates liquidity premium lowering cost of capital low carbon companies

- Equilibrium effect
  - If higher cost of capital > cost of reforming, then reform
  - Fraction of green investors > 20% needed to induce reform
  - By greening operations, CB would add to this fraction

# Concluding reflections

- Eurosystem should support general policies EU, including transition to low carbon economy

- Technically possible without interference with smooth conduct monetary policy

- But are central bankers prepared to cross the Rubicon?
  - ➢ Other sectors (accountants, investors) have done so after discussions
  - ➢ Central banks could/should also do it and stick to a general approach
  - ➢ Stay away from specific projects / sectoral targets; that is for government

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