Optimal Sustainability-Linked Collateral Policy

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Discussion: Optimal Sustainability-Linked Collateral Policy

- Very timely and policy-relevant paper.
- Brings together climate policy, collateral frameworks, financial frictions, and sectoral macro-financial transmission.

- Key insight:
  - Sustainability-linked collateral policy is **not automatically stabilizing**.
  - Whether it resembles the optimal policy depends crucially on the **persistence** and **interpretation** of the climate-policy shock.

What the paper does

- Builds a **DSGE model** with:
  - energy and non-energy sectors;
  - risky corporate debt;
  - banks that value eligible collateral;
  - a central bank setting collateral haircuts.

- Central bank faces a **trade-off**:
  - more lenient collateral policy improves banks' liquidity management;
  - but it increases exposure to risky collateral.

- **Climate policy uncertainty** is modeled as shocks to the emissions tax.

Main result

- The optimal collateral response depends sharply on **shock persistence**.

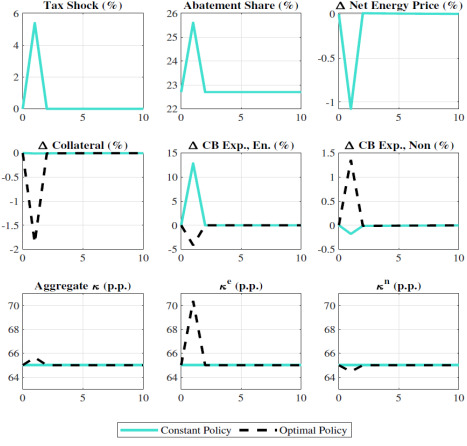

Figure 2: Impulse Response to an i.i.d. Emission Tax Shock. This graph displays impulse response to a 58/tCO2 emission tax shock with a persistence of $\rho_\tau = 0$. The solid line reflects the constant baseline collateral framework $\kappa_t^e = \kappa_t^n = \kappa^{ss_m} = 65\%$. The dashed line reflects the optimal collateral policy response.

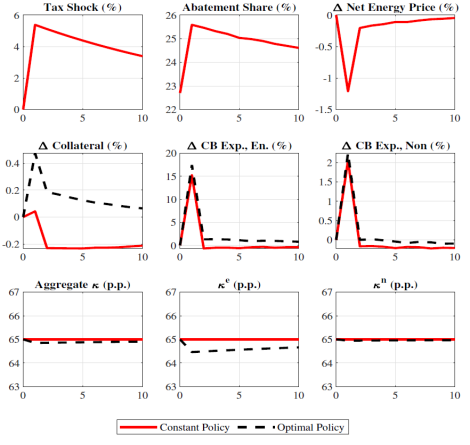

Figure 3: Impulse Response to a Persistent Emission Tax Shock. This graph displays impulse response to a 58/tCO2 emission tax shock with a persistence of $\rho_\tau = 0.99$. The solid line reflects the constant baseline collateral framework $\kappa_t^e = \kappa_t^n = \kappa^{ss_m} = 65\%$. The dashed line reflects the optimal collateral policy response.

Why the result is interesting

- The paper does not simply say that “green collateral policy” is **desirable**.
- Instead, it shows that the sign of the optimal policy response depends on the nature of the **shock**.
- Sustainability-linked collateral policy, **SLCP**:
  - resembles the optimal policy when shocks are **persistent**;
  - has the wrong sign relative to optimal policy when shocks are **transitory**.
- This is the **central contribution** and the most policy-relevant message of the paper.

Comment: Parellel between uncertainty and persistance

- The paper motivates the analysis through **climate-policy uncertainty** and operationalizes it as emission-tax shocks.
- This raises a **conceptual** question:
  - uncertainty is usually associated with the **variance** or **volatility** of shocks;
  - **persistence** captures how long a shock lasts once it occurs.
- In the current paper, the distinction between these two dimensions could be made clearer:
  - ⋆ σ_τ captures the size/volatility of climate-policy shocks,
  - ⋆ ρ_τ captures their persistence.
- Are transitory and persistent shocks meant to represent **different degrees of uncertainty**, or different types of climate-policy shocks?

Comment: Sensitivity to ρ_τ

- The paper would benefit from showing the optimal policy and SLCP performance over the full range of **shock persistence**.
- A useful exercise would be a heat map over ρ_τ:
  - optimal response of the energy-sector haircut;
  - optimal response of the non-energy haircut;
  - welfare loss from using SLCP relative to the optimal rule;
  - welfare gain from SLCP relative to a constant collateral framework.
- This would answer two important questions:
  - at what level of ρ_τ does the optimal energy haircut response change sign?
  - at what level of ρ_τ does SLCP become close to optimal?
- This would turn the persistence result into a sharper policy message.

Comment: How strong is the SLCP transmission channel?

- The SLCP mechanism is elegant:
  - cleaner energy firms receive better collateral treatment;
  - banks value their debt more;
  - financing conditions improve;
  - firms abate more.
- But quantitative effects appear small:
  - abatement share rises only modestly;
  - welfare gains are below 0.01 percent in consumption equivalents.
- This raises an interpretation question:
  - Is SLCP mainly a climate-mitigation tool?
  - Is the administrative and informational cost of implementing firm-level emission-linked collateral treatment justified?

Minor comments: Calibration and reporting inconsistencies

- The model fit is promising, but some calibration and reporting issues should be corrected.
- First, the firm default target appears inconsistent:
  - Table 1 reports a default-rate target of 0.9%;
  - Text later refers to a target of 1.7% (*corporate default rate*);
  - Table 2 again reports 0.9% in both model and data.
- Second, the tax-shock calibration appears inconsistent:
  - Table 1 reports $\rho_T = 0.9$ and $\sigma_T = 0.01$ (*persistent shock?*);
  - Text estimates $\rho_\tau = 0.09$ from EU ETS data (*i.i.d. shock? baseline)*;
  - Text then treats this as statistically indistinguishable from zero and sets $\sigma_\tau = 0.0015$.

To sum up

- Very exciting work, using a rich DSGE framework with banking frictions to study how **central bank collateral policy** should respond to **climate-policy shocks**
- Very interesting and policy-relevant result: the optimal collateral response depends crucially on the **persistence** and interpretation of the shock
- Clear implications for the design of **sustainability-linked collateral frameworks**, financial-risk management, and the broader debate on green central banking

Thank you!

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