Macroprudential policy coordination: a theoretical perspective

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Context

- As popularity of macroprudential and capital flow management policies has increased over the past decade, theoretical literature providing foundations to these policies has emergned
- Normative literature exploits two types of externalities which can make financial decisions inefficient
  - Pecuniary externalities in incomplete market environment: Caballero & Krishnamurthy (2001), Lorenzoni (2007), Korinek (2010, 2013), Bianchi (2011), Bengui & Bianchi (2014), Bianchi & Mendoza (2016)
  - AD externalities in environment with nominal rigidities: Farhi & Werning (2012a, 2012b, 2014, 2016), Korinek & Simsek (2016), Schmitt-Grohe & Uribe (2016)

This Talk

Should macropru/CFM policies be coordinated? If so, why?

1. Bengui (2013) "Macroprudential Policy Coordination": pecuniary externality view
2. Acharya and Bengui (2015) "Liquidity Traps, Capital Flows": AD externality view

⇒ Common message across two papers:

- international coordination of macropru/CFM policies is crucial
- terms-of-trade manipulation motive may conflict with primary motive (financial or macro stability) of the policy

Paper 1: model sketch

Two-country version of 3 period model of liquidity demand à la Holmstrom and Tirole (1998), Caballero and Krishnamurthy (2001)

- Two symmetric countries: $j = A, B$
- 3 periods: $t = 0, 1, 2$
- Representative agent in each country, who maximizes $E[u(c_2)]$
- Endowment at $t = 0$, to be allocated between short asset and long asset
- Liquidity shocks hit at $t = 1$, sample space $\Omega = \{(i, i), (i, s), (s, i), (s, s)\}$

Paper 1: model sketch (cont.)

- Key margin: date 0 investment choice between short and long asset
  - short asset ℓ pays off safe return at $t+1$
  - long asset k pays off at $t=2$, may be hit by liquidity shock at $t=1$
- Markets are incomplete
  - No state-contingent securities
  - (International) spot market at $t=1$
    - Borrow d^ω (lend $-d^\omega$) at gross interest rate R^ω
    - Limited commitment: collateral constraint $R^\omega d^\omega \leq \kappa r k$
    - Market clearing: $d_A^\omega + d_B^\omega = 0$
- Compare alternative allocation mechanisms regarding date 0 investment choice
  1. Decentralized equilibrium
  2. Equilibrium with global regulation
  3. Equilibrium with national regulation

Paper 1: private vs. social asset valuations

How are short and long assets valued by private agents vs. planners?

- State *ii* and *ss*: no trade, valuations are identical
- States *is* and *si*: trade, planners internalize pricing functions (unlike private agents), e.g. $R^{is} = \frac{\kappa r k_B}{\ell_A}$

state *is*	Marginal valuation of ℓ_A	Marginal valuation of k_B
Global planner	$PV + \underbrace{\ell_A \frac{\partial R^{is}}{\partial \ell_A}\left(u_i' - \frac{\Delta}{R^{is}} u_s'\right)}_{+}$	$PV + \underbrace{\ell_A \frac{\partial R^{is}}{\partial k_B}\left(u_i' - \frac{\Delta}{R^{is}} u_s'\right)}_{-}$
National planner		

state *is*	Marginal valuation of ℓ_A	Marginal valuation of k_B
Global planner	$PV + \underbrace{\ell_A \frac{\partial R^{is}}{\partial \ell_A}\left(u_i' - \frac{\Delta}{R^{is}} u_s'\right)}_{+}$	$PV + \underbrace{\ell_A \frac{\partial R^{is}}{\partial k_B}\left(u_i' - \frac{\Delta}{R^{is}} u_s'\right)}_{-}$
National planner	$PV + \underbrace{\ell_A \frac{\partial R^{is}}{\partial \ell_A} u_i'}_{-}$	$PV + \underbrace{\ell_A \frac{\partial R^{is}}{\partial k_B}\left(-\frac{\Delta}{R^{is}} u_s'\right)}_{-}$

Paper 1: global (or coordinated) regulation

Proposition

A global planner chooses a more liquid investment portfolio than private agents in the CE, i.e. $k^{GR} < k^{CE}$ and $\ell^{GR} > \ell^{CE}$.

- Constrained inefficiency of decentralized investment decisions caused by pecuniary externality with incomplete markets
- Consequences of (optimal) global regulation
  - Higher welfare
  - Less risk-taking
  - Less severe financial crises (less liquidation, lower interest rate)

Paper 1: national (or uncoordinated) regulation

Proposition

National planners choose a less liquid investment portfolio than a global planner, i.e. $k^{GR} \leq k^{NR}$ and $\ell^{GR} \geq \ell^{NR}$ (strictly unless at corner).

Proposition

When risk-aversion is low, national planners choose a less liquid investment portfolio than private agents in the CE, i.e. $k^{CE} < k^{NR}$ and $\ell^{CE} > \ell^{NR}$.

- Pecuniary externality exploited by national planners strategically
- Consequences of national regulation
  - Lower welfare
  - More risk-taking
  - More severe financial crises (more liquidation, higher interest rate)

Paper 2: model sketch

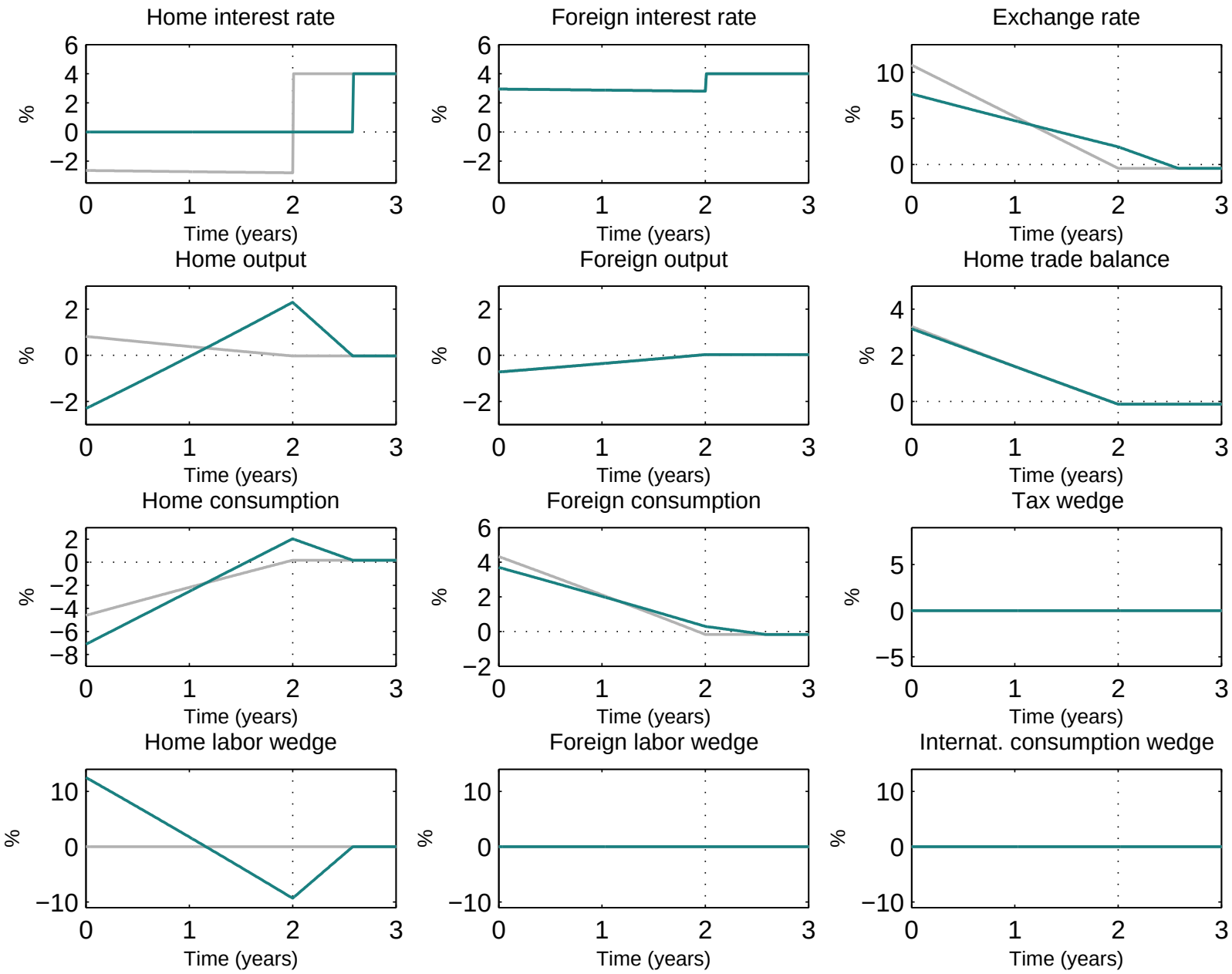
Two-country New-Keynesian environment

- Monopolistic competition
- Nominal rigidities
- Flexible exchange rates
- Explicit zero bound on nominal interest rates

Liquidity trap experiment

- Large demand shock pushes part of the world economy to ZLB
- Analysis of global macro adjustment under various capital flow regimes

Paper 2: macro adjustment under free capital mobility



Paper 2: efficient (coordinated) CFM

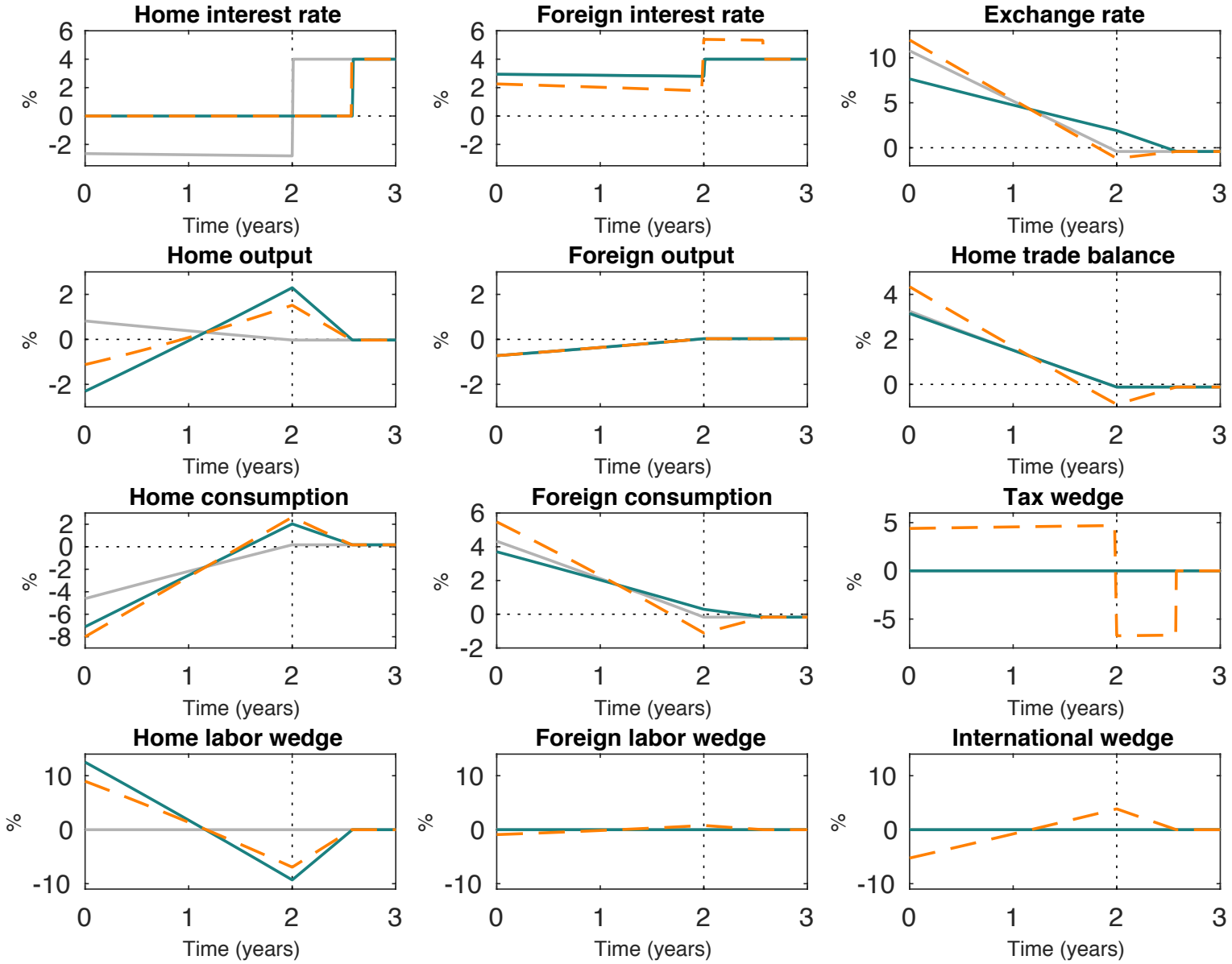
Is capital efficiently flowing across countries in liquidity trap?

Proposition (Constrained efficient regime)

In a constrained efficient CFM regime, the global planner subsidizes capital flows out of Home during the liquidity trap.

- Constrained inefficiency of savings decisions caused by AD externality with impotent monetary policy
- Consequences of (optimal) global CFM
  - Higher welfare
  - Smoother real adjustment

Paper 2: macro adjustment under coordinated capital flow regime



Paper 2: uncoordinated CFM

Are gains from CFM achievable without coordination?

- When national planners optimally manage their capital account, they also respond to dynamic terms-of-trade (dToT) manipulation motives (Costinot et al. 2014), which tend to restrict capital flows in a liquidity trap

Proposition (Nash vs constrained efficient regime)

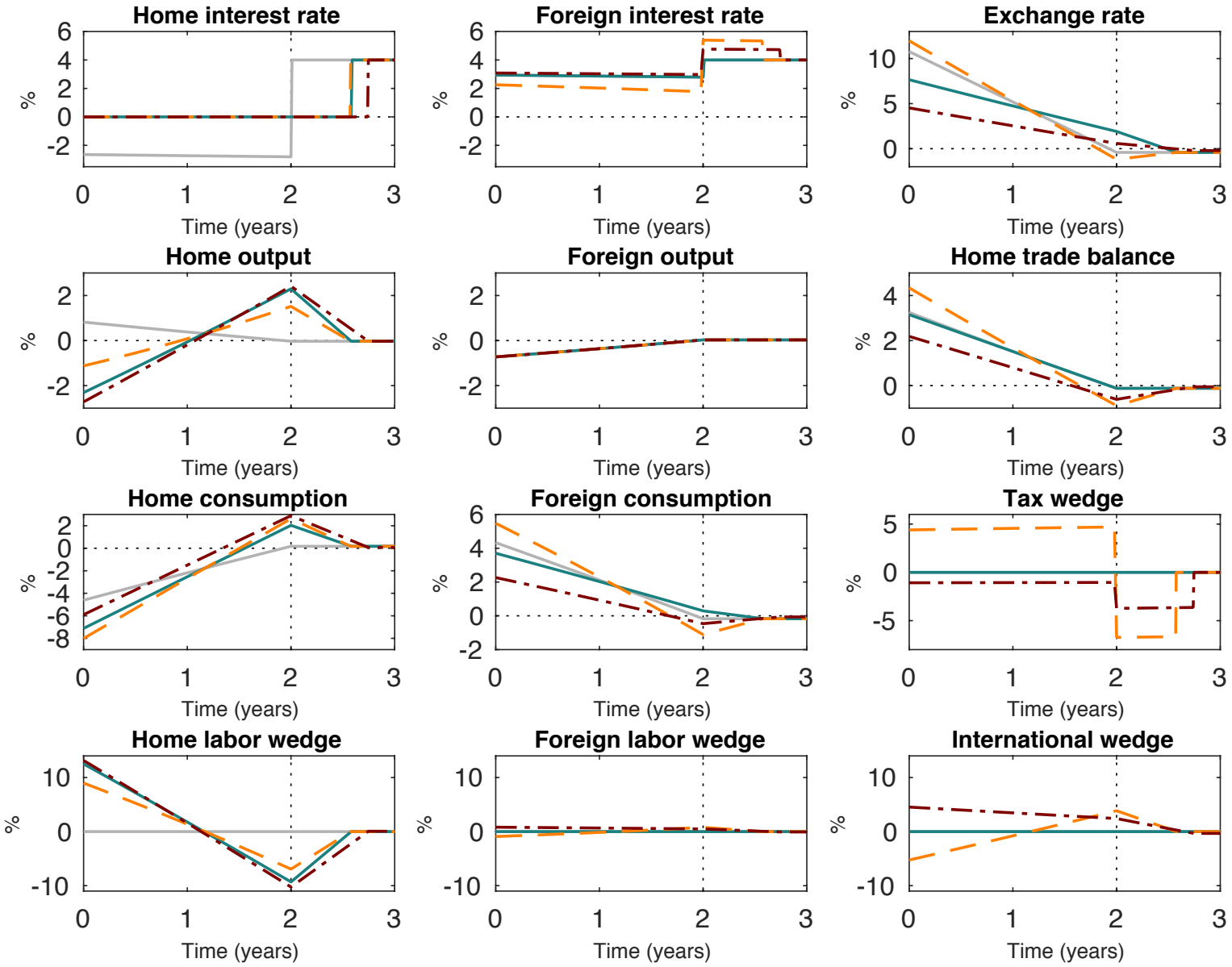
In a Nash regime, flows out of Home are less subsidized than in the efficienc CFM regime during the liquidity trap.

Proposition (Nash vs free capital mobility regime)

When labor supply elasticity is high, in a Nash regime, flows out of Home are less subsidized than in the efficienc CFM regime during the liquidity trap.

- dToT manipulation motives conflicts with macro stabilization
- Consequences of (optimal) uncoordinated CFM
  - Lower welfare
  - Less smooth real adjustment

Paper 2: macro adjustment under uncoordinated capital flow regime



CONCLUSION

- Regardless of foundation for macroprudential and/or capital flow management policies (pecuniary or AD externalities), coordination is curial
- Failing to coordinate may fully defeat the purpose of these policies: noncoordinated policies can lead to outcomes worse than laissez-faire
- Setting up structures and institutions to foster policy coordination in this area should be an important policy objective in the years to come