

Economic policy, 2012-2013

Chapter 2: Economic policy in a complex world

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Chapter's purpose

1. Break with the representation of economic policy as an engineer's science. Introduce limits of economic policy, criticisms, debate over its effectiveness
2. Break with the single-actor representation of economic policy. Introduce multi-level governance and international interdependence

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Outline

2.1. Living with limits

- Knowledge
- Risk
- Representation
- Confidence
- Information
- Benevolence
- The policy responses

2.2. Living with interdependence

- The rise of interdependence
- International policy coordination
- Federations

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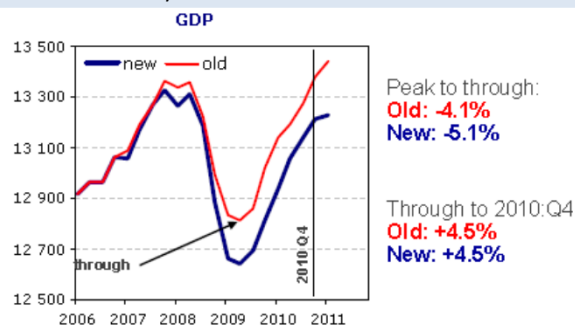
Knowledge

- Implicit assumption in (most of) chapter 1: full information of policymaker
- In fact imperfect information is pervasive:
 - Real-time data often wrong
 - Model inadequacy (in 2008 most central banks were using model that gave no role to financial frictions)
 - Model uncertainty (parameters estimates)

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Misleading real-time data

US GDP revision July 2011: another look at the 2009 recession

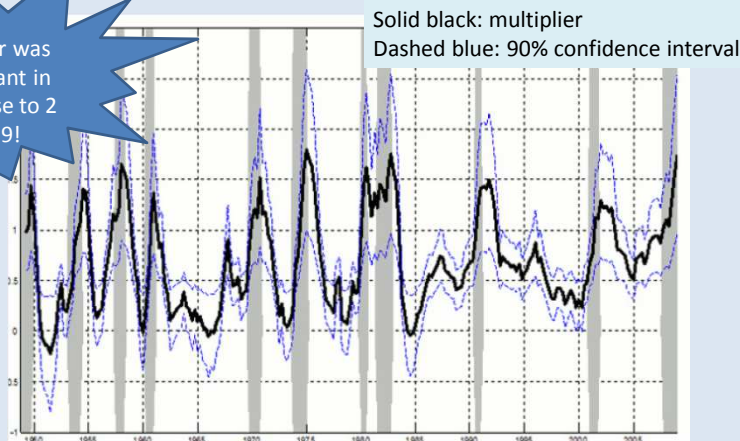


	OLD GDP	NEW GDP
2007	1.9%	1.8%
2008	0.0%	-0.3%
2009	-2.6%	-3.5%
2010	2.9%	3.0%

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Model uncertainty: time-varying fiscal multipliers

Multiplier was insignificant in 1985, close to 2 in 2009!

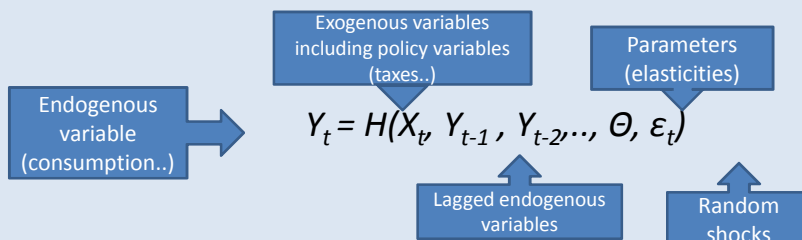


Source: Auerbach and Gorodnichenko (2010)

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Model /parameter uncertainty

- 1960s paradigm



- Problems

- Model uncertainty (what is the right H ?)
- Parameter uncertainty (true Θ not observed, rather *estimated* with uncertainty)
- Lucas critique: Θ not independent from policy

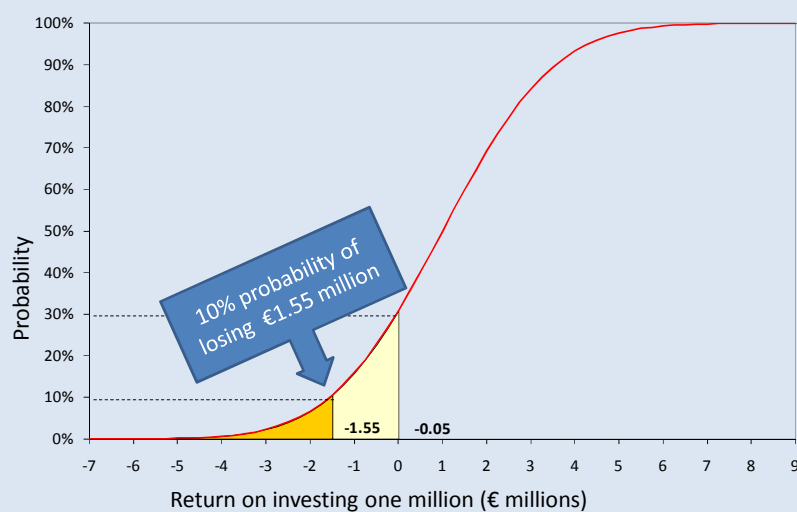
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Risk

- Risk prevention and risk management are major policy responsibilities:
 - Public health / Natural or industrial catastrophes / Financial stability
- Usual approach: expected utility (Von Neumann-Morgenstern 1944) under normal distribution
- However serious flaws:
 - Fat tails
 - Instability of probability distribution
- Furthermore no systematic approach of risk in policy choices
 - Trade-offs often not recognised, or not acted upon (public health)
 - When acted upon often controversial (e.g. swine flu, Basel 3)
- Risk management in private sector (through e.g. *Value At Risk* approach) widely and rightly criticised, but public sector is often worse (e.g. for budget outlook, pensions)

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Cost at Risk (or Value at Risk)



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Irreversibility

- Linear models represent decisions as reversible: lack of action at t can be substituted by action at $t + 1$, effects differ only in the short term
- Not adequate in presence of irreversibility, e.g. melting of North Pole. According to Stern's report on global warming (2007):
 - Cost of acting now: 1% of world GDP (permanent cost)
 - Cost of not acting: 5% to 20% of world GDP (same)
- However critics (e.g. Nordhaus 2007) say Stern does not discount future benefits properly, overlooks possibility of technology breakthrough

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Irreversibility: decisions on global warming

	Continuous technical progress	Technological breakthrough
Act now	Moderate cost of mitigation	Cost paid upfront, benefits from breakthrough limited
Act later	High cost of adaptation, possibly catastrophe	Low cost of mitigation / adaptation

What should be done? No answer in standard decision models

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Representation

- Game with nature vs. strategic interaction between policymakers and private agents
- Key role of expectations
 - Adaptative $Z_{t,t+1}^a = (1-\lambda)Z_{t-1,t}^a + \lambda Z_t$
 - Rational $Z_{t,t+1}^a = E(Z_{t+1}|I_t)$
- **Lucas critique** (1976): standard simulations with macro models is not adequate for evaluation of policy regimes because parameters are implicitly based on no-regime change assumption
 - e.g. move from floating to fixed exchange rates
- Serious critique of policy evaluation methods of frequent use in the 1970s, 1980s.
- Responses : microfounded models, **Vector AutoRegressive models (VARs)**

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Confidence

- Policy effectiveness depends on agents' expectations of future policy course
 - Policy that attempts to fool private agents can be made ineffective (e.g. **Barro-Gordon model**, 1983)
 - Policy that is credible gains effectiveness
- Frequent problems:
 - **Time inconsistency** (Kydland Prescott 1977): sequence of optimal decisions does not result in optimal policy
 - **Moral hazard** (special case of time inconsistency)
- Serious concern in the design of policy regimes.
- Key issue in European policy debate (Berlusconi 7/2011!)
- Responses: rules, delegation to single-objective agencies

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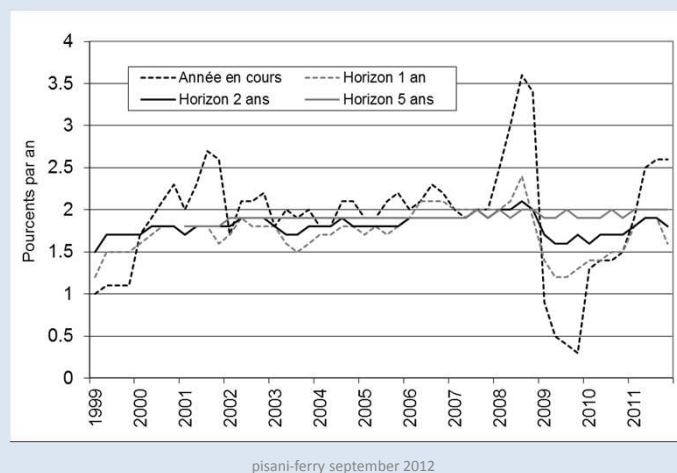
Example: moral hazard and the end of it in the aftermath of the Russian crisis

Yield spread between Brazilian and US Treasury bonds, 1998



Example: ECB credibility and inflation expectations

Expected inflation in the euro area, 1999-2012 (ECB survey of professional forecasters)



Information

- Policymaker does not have full access to information and it is used strategically by those with access to it
- Major issue for:
 - Regulation/supervision
 - Contracts (for e.g. provision of government-financed services, for example health care)
 - Internal functioning of government
- **Principal-agent model** (Baron et Myerson, 1982) provides intellectual framework for analysis
- Insight: contract design should give incentive to agent to reveal private information. This generally involves cost for principal

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Benevolence

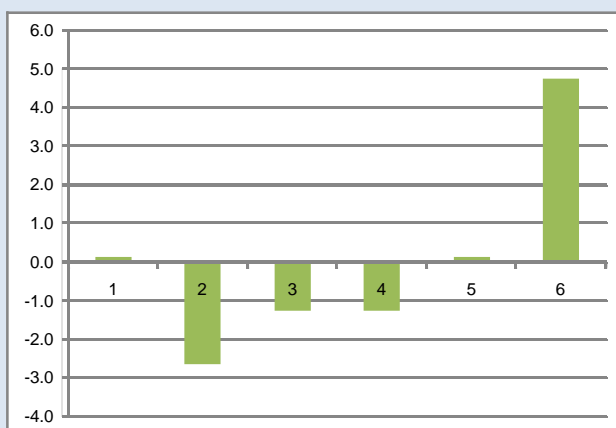
Why politicians may deviate from general interest:

1. Shortsightedness (because of electoral cycles)
 2. Interest group pressure / capture
 3. Reelection motivations (if voters are ill-informed)
 4. Partisan behaviour
 5. Divided electorate
- Evidence that this is real concern (for example, public debt level depends on political variables, e.g. ethnic/linguistic/social divisions within country, political antagonism, majority vs. proportional representation, political instability, etc..)

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Example: evidence of politically motivated decisions

Investment by French local authorities throughout the term

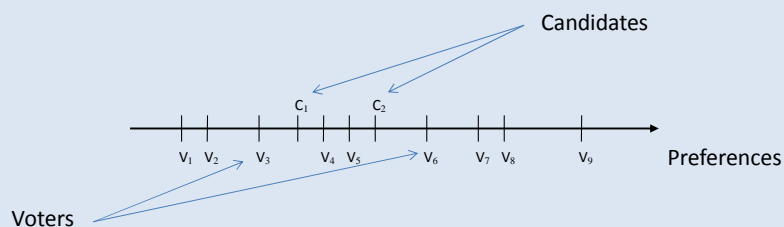


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The median voter model

Introduced by Hotelling (1929) and Black (1948)

Voters choose the party whose preferences are close to their own: voters V1 to V4 vote for candidate C1 and voters V5 to V7 for candidate C2.



Suppose left-wing and right-wing parties disagree on the level of government transfers. Politics will lead to choosing the median level of transfers.

Except under very specific assumptions, this coincides neither with the 'Benthamian' choice (maximize average welfare) nor with the 'Rawlsian' choice (concentrate transfers on the poor).

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The policy responses

- Governance technologies:
 - Delegation to independent agency (central bank, regulation authority, etc..)
 - Policy rules
 - Incentive contracts
- Theory provides some guidance (on what should be delegated, how much flexibility should be kept in rules,..)
- However wide differences across countries

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Should policy be delegated?

- Theory (Maskin-Tirole 2004, Alesina-Tabellini 2007) suggests technocrats are better in presence of:
 - Technical complexity (e.g. financial/safety regulation);
 - Judicial nature of decisions (merger control);
 - Undesirable trade-offs (public health and safety);
 - Intertemporal concerns (distribution across generations);
 - Significant international interdependence
 - Benefits to groups likely to engage into political lobbying
- But decision needs to remain political when:
 - Social preferences are unstable
 - Policy involves unavoidable trade-offs
 - Policy involves significant redistribution within generations

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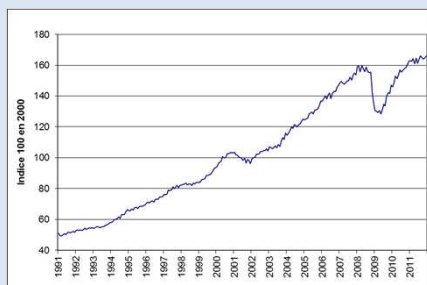
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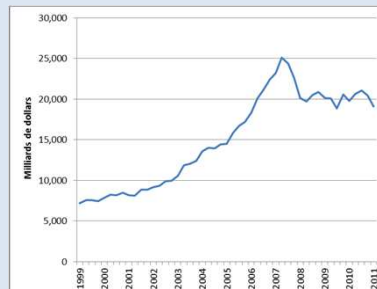
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Rise and fall of interdependence

**World trade volume,
1991-2012**



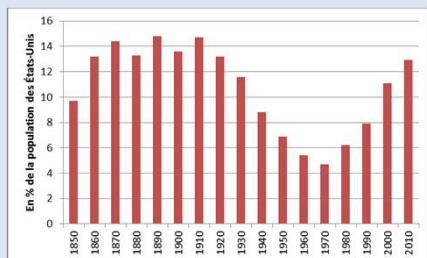
**Cross-border bank claims,
1999-2011**



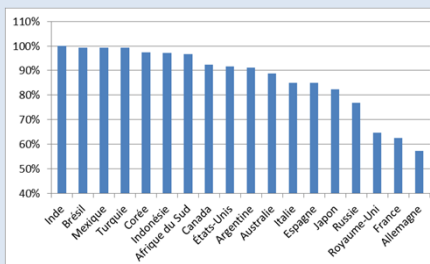
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Warning: far from full integration

Share of foreign-borns in US population, 1850-2010



Home bias of bond portfolios, G20 countries, 2010



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Implications

- Extraterritorial effects of national policies
 - Example: EU competition decisions (GE, Microsoft)
- Coordination
 - Example: G20 framework for growth
- Global rules
 - Examples: trade rules, BCBS banking regulation
- Delegation of competence to international unions
 - Example: monetary policy in the euro area

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Coordination

- Two main motives
 - Provision of **global public goods**, e.g. climate, development (from point of view of rich countries)
 - **Policy optimisation** in the context of significant interdependence, e.g. fiscal coordination
- Can take place through international institutions (e.g. Bretton Woods institutions) or ad-hoc fora (G20)
- Can be **rules-based** (Kyoto protocol, European Stability and Growth Pact) or **discretionary** (G20 2009 stimulus)
- Recent revival (climate, G20) after lasting neglect/criticism

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Why coordination?

- Two-countries setting (home and foreign, starred variables are foreign)
- Suppose policy aims at maximising $U(\mathbf{y})$ where $\mathbf{y} = (y_1, \dots, y_n)$ is a vector of policy outcomes
- Suppose $\mathbf{y} = H(\mathbf{x}, \mathbf{x}^*)$ where $\mathbf{x} = (x_1, \dots, x_k)$ is a vector of national policy instruments and \mathbf{x}^* is a vector of foreign policy instruments
- The programme of the national policymaker can be rewritten $\text{Max}_{\mathbf{x}} V(\mathbf{x}, \mathbf{x}^*)$
- First-order condition is $\frac{\partial V}{\partial x_i}(\mathbf{x}, \mathbf{x}^*) = 0, i = 1, \dots, k$
- This results in policy being a function of foreign choices through **reaction function** $\mathbf{x} = F(\mathbf{x}^*)$
- Independent policy decisions result in **uncoordinated Nash equilibrium**, which is the solution of $\mathbf{x} = F(\mathbf{x}^*)$ and $\mathbf{x}^* = F(\mathbf{x})$

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Why coordination? (cont'd)

- The Pareto optimum is defined by:

$$\text{Max}_{\mathbf{x}, \mathbf{x}^*} V(\mathbf{x}, \mathbf{x}^*) \text{ with } V^*(\mathbf{x}^*, \mathbf{x}) \geq V_0$$

- The corresponding Lagrangian is:

$$L = V(\mathbf{x}, \mathbf{x}^*) + \lambda [V^*(\mathbf{x}^*, \mathbf{x}) - V_0]$$

- Whose maximisation implies:

$$\frac{\partial V}{\partial x_i} = -\lambda \frac{\partial V^*}{\partial x_i} \text{ et } \frac{\partial V}{\partial x_i^*} = -\lambda \frac{\partial V^*}{\partial x_i^*}$$

- Coordination to reach a Pareto-optimal solution thus implies **maximisation of $W = V + \lambda V^*$** where λ depends on the weight of the countries in the negotiation ($\lambda = 1$ gives the symmetric equilibrium)

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Arguments against coordination

- *Small gains* (Oudiz-Sachs 1984)
 - High negotiation costs, small welfare gains
- *Model and parameter uncertainty* (Frankel-Rockett 1988)
 - Imperfect information may lead to wrong choices
- *Counterproductive coordination* (Rogoff)
 - Coordination can be seen as a coalition among policymakers to weaken market discipline
- *Partial coordination can be counterproductive*
 - Coordination is often partial only (subset of countries, treasuries but not central bank) and this may reduce welfare

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Governance of international organisations

Table 2.4
Scope, rules, and means of the major international organizations

Sector (institution, creation)	Voting rules	Institutional strength	Legal means	Financial strength
Trade (GATT, 1947 + WTO, 1995)	One country, one vote, simple or qualified majority for the application of the treaties, in practice consensus	Weak, except for dispute settlement	Arbitration and dispute settlement (through the Dispute Settlement Body)	Irrelevant
Currency and financial stability (IMF, 1945 + BIS, 1930)	IMF: Constituencies with weighted voting rights, simple or qualified majority; in practice consensus BIS: Weighted voting rights	IMF: Strong institutional coherence plus strong G7 support BIS: Important via the central banks	IMF: Limited power to set standards, indirect power on countries under IMF assistance BIS: Indirect standard-setting power	Major vis-à-vis countries requesting assistance (mostly poor countries), nil vis-à-vis surplus countries Potentially important via the central banks
Development finance (World Bank, 1945)	Like the IMF with greater role for developing countries	Same as IMF	Almost absent	Declining before the 2007-09 crisis as countries had gained access to financial markets, significantly expanding in the aftermath of the crisis
Environment (UNEP, 1972)	In theory geographical constituencies, in practice depends on the United Nations	Weak and dispersed	Weak	Weak
Health (WHO, 1946)	General Assembly: One country, one vote Board: One person, one vote	Significant, but strong decentralization	Important (immediately enforceable health standards)	Limited
Labor (ILO, 1919)	Parity between governments, employers and employees. General Assembly: One country, one vote Board: Permanent seats for large countries	Weak	Weak (implementation of agreed standards left to the goodwill of member states)	Weak

Source: Jacquet et al. (2002).

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International unions

- 40% of world population lives in federations or confederations (e.g. Australia, Brazil, Germany, India, US)
- Rise of regional groupings in Europe and elsewhere (Asia, Latin America..)
- Multi-level government raises many questions:
 - Costs and benefits of joining / leaving
 - Criteria for joining / leaving
 - Competence assignment
 - Vertical / horizontal coordination

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Varieties of international unions

- **Free trade area** (e.g. NAFTA)
 - Trade and trade-related dimensions only, preserves national autonomy (different tariffs)
- **Customs union** (e.g. early EU)
 - Trade and trade-related only, but common tariff
- **Single market** (EU 1980s)
 - Free mobility of products and factors implies more demanding harmonised rules (services directive)
- **Monetary union** (euro area)
 - Major increase in interdependence, implication for other policies
- **Economic and Monetary Union (EMU)**
 - Single market + common policies + budgetary rules + monetary union

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Basics: theory

Early approaches

- Olson's 'budgetary equivalence': pay where you consume
- Oates: decentralisation principle
- Tiebout, Weingast et al.: decentralisation as a protection against the state

Modern approaches

- Why centralise? externalities / economies of scale
- So unions result from trade-off between diversity of preferences and externalities / economies of scale
- Alesina, Angeloni and Etro (2005) formalise this trade-off

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The AAE model

- N countries each have income Y_i , contribute G_i to provision of common public good. Utility is

$$U_i = Y_i - G_i + \alpha_i H(G_i) \text{ if country } i \text{ does not belong to the union,}$$

$$\text{but } U_i = Y_i - G_i + \alpha_i H(G_i + \beta \sum_{j \neq i} G_j) \text{ if it belongs to the union}$$

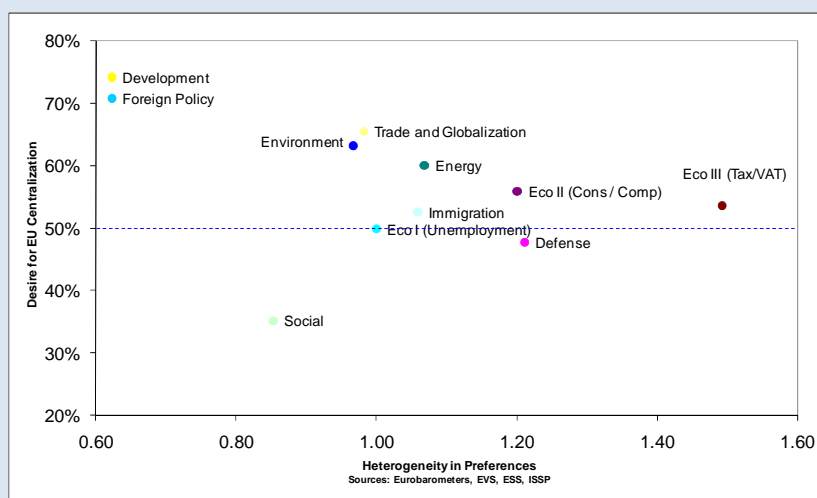
- In the union decision on production of public good taken by majority, so corresponds to preference of median voter m). Therefore,

$$\alpha_m H((1 + \beta(N-1))\tilde{G}_N) = \frac{1}{1 + \beta(N-1)}$$

- After the union has been formed, enlargement to a new member has two effects:
 - a) Increases positive externalities (thus increases G_N)
 - b) May change political equilibrium (α_m)
- Thus current members may lose from enlargement or countries may be better off remaining outside (because of (b))

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Example: centralisation and preferences in the EU



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The EU: A snapshot

- 1950: learning of
 - Coordination with *European Payments Union* (ended 1958)
 - Delegation with *European Coal and Steel Community* (ended 1967)
- 1957: European Community. Limited scope, but full-fledged legal and institutional framework
 - Supremacy of Community law, Court of justice
 - Supranational body
 - Complete delegation of trade, competition policies
 - Irreversibility through *Acquis communautaire*
- 1992: Maastricht treaty
 - Delegation of monetary authority to common central bank
 - Coordination / surveillance of budgetary policies
- 1997-2005: (failed) attempts at political union

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The EU's evolving principles

- Early days: broad end-goal (ever closer union), small steps, powerful integration lock-in mechanisms (*acquis*)
- Post-Maastricht introduced principles to limit centralisation
 - Attribution: all competence not attributed to the EU belongs to MS
 - Subsidiarity: except in areas of exclusive competence, the EU only intervenes when action by MS is not « sufficient »
- Constitution / Lisbon treaty: attempt at clarification
 - Clearer competence assignment
- However limited effectiveness
 - De facto move into increasing overlap between EU and national competence

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What the EU does (for dummies)

	Member States	EU
Micro	Labour	Goods Capital
Macro	Budget	Money

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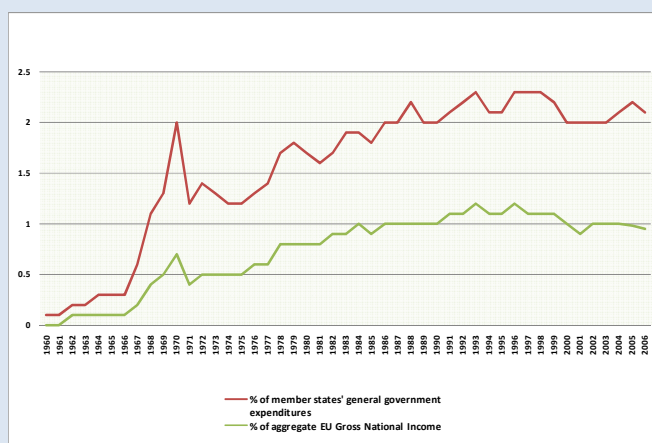
What the EU does (for scholars)

	Member States	EU
Allocation		
Labour	XX	X
Products	X	XX
Capital	X	XX
CO2	X	XX
Infrastructure, research, education	XX	X
Agriculture		XXX
Stabilisation		
Money and exchange rate		XXX
Financial stability	XX	X
Budgetary policy	XX	X
Redistribution		
Across individuals	XXX	
Across regions	XX	X
Across countries		XXX

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EU budget: comparatively small

Size of EU budget, 1960-2007



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