The Open Method of Coordination (OMC): Imitation and Learning

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1. The OMC
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What is the "Open Method of Coordination (OMC)"?

- "intergovernmental mode of governance" in the European Union
- blueprints exist since ~1993; official endorsement at the Lisbon EU summit (2000)
- case-wise application, often in the area of social protection
- "open": not well-defined
Procedure:

- fixing *guidelines* for the Union (with timetables);

- establishing *indicators and benchmarks* as a means of comparing best practice;

- translating the guidelines into *national and regional policies* by setting specific targets and adopting measures;

- periodic monitoring, *evaluation and peer review organized as mutual learning processes*.

(Lisbon European Council Conclusions, 2000, pt. 37)

“The open method of co-ordination is used on a case by case basis. It is a way of encouraging co-operation, the exchange of best practice and agreeing common targets and guidelines for Member States, backed up by national action plans as in the case of employment and social exclusion. It relies on regular monitoring of progress to meet those targets, allowing Member States to compare their efforts and learn from the experience of others.”
1. The OMC

- Target indicators
- National strategy reports
- Common report incl. *best practices*
  - Implementation of *best practices by MS*

Iteration
Hopes attached to the OMC:

- **Decentralized approach**: broad acceptance
- **Procedural Rationality**: continuous evaluation, learning, exchange of information
- **Efficiency**: orientation towards, and imitation of, best practices leads to good policy outcomes
- **Convergence**: process involves „voluntary harmonization“
1. The OMC

History:

Precursors (treaty-based!)

Broad Economic Policy Guidelines (Maastricht, 1991; Art. 120ff TFEU)
European Employment Strategy (Amsterdam, 1997; Art. 145ff TFEU)

Official application (Council Conclusions):
Social Protection and Inclusion:
• Eradication of Poverty and Social Exclusion (Lisbon, 2000)
• Pensions (Laeken, 2001)
• Health and Long-Term Care (Luxemburg, 2005)
Research and Innovation (2000, 2002)
Immigration (Copenhagen, 2005)
Youth Policy (2009)

Related:
Common objectives:

1. “Promote social cohesion and equal opportunities for all through adequate, accessible, financially sustainable, adaptable and efficient social protection systems and social inclusion policies.

2. Interact closely with the Lisbon objectives on achieving greater economic growth and more and better jobs and with the EU’s Sustainable Development Strategy.

3. Strengthen governance, transparency and the involvement of stakeholders in the design, implementation and monitoring of policy.“

(EU Commission, 2005, Working together, working better - A new framework for the open coordination of social protection and inclusion policies in the European Union)
More specifically, ..

“Eradication of poverty and social exclusion“

• „Ensure the active social inclusion of all by promoting participation in the labour market and by fighting poverty and exclusion among the most marginalised people and groups.

• Guarantee access for all to the basic resources, rights and social services needed for participation in society, while addressing extreme forms of exclusion and fighting all forms of discrimination leading to exclusion.

• Ensure that social inclusion policies are well-coordinated and involve all levels of government and relevant actors, including people experiencing poverty, that they are efficient and effective and mainstreamed into all relevant public policies, including economic, budgetary, education and training policies and structural fund (notably ESF) programmes and that they are gender mainstreamed."

(ibid.)

*similar for „Pensions“ and „Health and Long-term Care“*
Common Indicators (aka “Laeken Indicators”)

Include, e.g.,:

- At-risk-of-poverty rate
- S80/S20 income quintile share ratio
- Persistent at-risk-of-poverty rate
- Regional cohesion
- Long-term unemployment rate
- Persons living in jobless households
- Early school leavers not in education or training
- Life expectancy at birth
- Self defined health status
- Dispersion around the at-risk-of-poverty threshold
- Gini coefficient
- Long term unemployment share
- …
National Strategic Reports:

national governments' translation of the common objectives into policy plans:

Social Protection Committee

- treaty-based: Art. 160 TFEU
- vehicle for cooperative exchange between MS and Commission
- annual „Joint Report on Social Protection and Social Inclusion“.
- Latest: 2010 (draft)
Peer Review:

Peer Reviews are a key instrument of the Social "Open Method of Coordination" (OMC). They enable an open discussion on social protection and social inclusion policies in the different EU Member States and facilitate the mutual learning process among them.

Each Peer Review is hosted by one country.

The host country can present a selected "good practice" - a new programme, a policy reform or an institutional arrangement mentioned in its National Strategy Report on Social Protection and Social Inclusion - to experts from the European Commission, other countries (peer countries) and relevant stakeholder organisations. The aim is to evaluate the policy, to see if it is effective in a national context, to establish how it contributes to EU objectives, to uncover any flaws - notably by learning from “good practices” in other countries - and to determine whether it could be effectively transferred to other Member States.

The host country can also use the Peer Review meetings to gather expert advice from other countries in order to inform the process of preparation of a major policy reform in the field of social protection and social inclusion (or new programme or institutional arrangement). The aim would be to take advantage of “good practices” existing in other EU countries to improve the efficiency of their reforms.

For more information on how Peer Reviews are organised and how countries and policies are selected, please consult the Operational Guide.
Making a success of integrating immigrants into the labour market

Host Country: Norway

Place and date: Oslo, 19. - 19.11.2010

Peer countries: Austria - Finland - Germany - Greece - Italy - Latvia - Malta - United Kingdom

Norway's social inclusion policy, under which it is compulsory for all newly-arrived adult refugees and immigrants to participate in Norwegian language training and civic education, in order to enable them to rapidly contribute to, and participate in the labour market and in society in general, has delivered positive results.

65% of people who participated in the country's introductory programme in 2006 were either employed or enrolled in further education in November 2007. The programme has also proved successful in increasing overall labour market participation and in raising the share of immigrant women in the labour market.

With a number of European countries having already introduced similar citizenship tests or considering doing so, the Peer Review will enable a debate on how these types of tests can contribute to a more inclusive society by improving individuals' skills and opportunities. It will also raise a number of important questions relating to the methods used, the content and quality of the training courses provided, the level of difficulty of the tests imposed, and the monitoring and evaluation of policy results.

Peer Review manager
Ms Katja Korolova (CSB Consulting GmbH)

Related documents
Assessment:

- Placebo without any relevance for national policies (e.g., Chalmers and Lodge, 2003; Schäfer, 2006)
- Gradual harmonization in disguise (Jacobsson, 2004; Wessels, 2008)
- Convergence of national policy objectives and policies (Zeitlin, 2005; Lopez-Santana, 2006; Büchs, 2008)
- Some governments claim that their policies have set examples that are now being imitated (DK: flexicurity; UK: „making work pay“-policies; F: social inclusion).
- Noticeable impact on national policies? (D: Riester/Rürup pensions [?])
- Learning effects and best practise approach cherished in Nordic and Western European countries (Nedergaard, 2006)
How often has a country been chosen as a tutor in peer review (EU 25; 2001-2005)

**Open method of coordination**

Member States have much to learn from sharing their experience of national policies in areas of common interest. This can help them to improve the design and implementation of their own policies, to develop coordinated joint initiatives on issues of transnational interest, and to identify areas where Community initiatives could reinforce national actions.

The "Open Method of Coordination" (OMC) was introduced by the European Council of Lisbon in March 2000. It was a method designed to help Member States progress jointly in the reforms they needed to undertake in order to reach the Lisbon goals. The method included the following elements:

- **Fixing guidelines and timetables for achieving short, medium and long-term goals**
- **Establishing quantitative and qualitative indicators and benchmarks** tailored to the needs of Member States and sectors involved, as a means of comparing best practices
- **Translating European guidelines into national and regional policies, by setting specific measures and targets**
- **Periodic monitoring of the progress achieved in order to put in place mutual learning processes between Member States**

Initially the OMC was only applied to Employment and Economic policy. When the European Council set the 3% of GDP objective for R&D investment, the Commission suggested that OMC should be applied for this objective as well. The Spring European Council of March 2003 thus agreed to apply the OMC for policies related to investment in research (and to human resources and mobility of researchers as well).

Since October 2005, CREST decided to meet once or twice a year at the level of Directors General to review and facilitate the progress of policy coordination.

The process is expected to produce the following outcomes:

- Enhanced mutual learning and peer review
- Identification of good practices and of their conditions for transplantability
- Development of joint policy initiatives among several Member States and regions
- Identification of areas where Community initiatives could reinforce actions at Member State level.

**First OMC cycle (2003-2004)**

CREST created five Expert Groups to address actions in the Commission’s 3% Action Plan where OMC was particularly relevant:

- Public research spending and policy mixes
- Public research base and its links to industry
- Fiscal measures and research
- Intellectual property and research
- SMEs and research

Issues related to the mobility and careers of researchers were dealt by the Steering Group on Human Resources and Mobility.

Each Expert Group was asked to identify good practices and suggest policy recommendations to Member States. Each Expert Group presented to CREST a report with its findings.

1. Public research base and its links to industry
2. SMEs and research
3. Fiscal measures for research
The final report (1-15 may) on internationalisation of R&D was adopted by CREST at the 2nd December meeting in Brussels. One of the objectives was to take stock of the strategies and activities of EU Member and Associated States with regards to the internationalisation of R&D. Based on the report CREST adopted conclusions. The main challenge is how to face the challenge of globalisation and how to approach to a proactive international policy in this regard.

CREST report on the Internationalisation of R&D

In the third cycle, the main objective of the Policy Mix Group was to conduct a peer review process capable of acting as an instrument of mutual learning. The process aimed at helping Member States to better understand the policy mixes needed to raise R&D intensity. To the previous three countries (ES, SE, RO), six (BE, EE, FR, LT, NL, UK) were reviewed in this cycle.

Belgian report

European report

French report

Lithuanian report

Dutch report

UK report

The reviews generated a series of generic lessons and recommendations of reference to R&D and innovation policymakers which were adopted by CREST together with a synthesis report on 5th December at the December meeting in Brussels.

CREST report group report 2006 - 3rd report (3rd cycle of the Open Method of Coordination in favour of the 3% objective) (On the design and implementation of national policy mixes).

Fourth OMC cycle (2007-2008)

The fourth cycle of the OMC, launched in December 2006, focused on:

- Universities’ research capacity
  - Working Group Report on ‘Mutual learning on approaches to improve the excellence of research in Universities’ (1-15 May) endorsed by CREST on 3 April 2008
- Industry-led competence centres
- Policy mixes
  - Policy Mix Peer Review Report Austria
  - Policy Mix Peer Review Report Bulgaria
  - Annex
  - Annex

Since 2003, the Open Method of Coordination (OMC) has been used as one of the principal tools to achieve progress towards the objective of increasing investment in research to approach 3% of GDP. In 2008, the 'Expert Group for the follow-up of the research aspects of the revised Lisbon strategy (LEG)', created in 2006 by the European Commission (DG RTD), carried out an assessment of the impact generated by the OMC in the field of research policy at the national level. The results can be found here.

The report on services is in the process of being finalised.
Results of the CREST-OMC

“considerable achievements”:

• “evidence to a process of developing a new mechanism, a new way of understanding and organising Member States’ interactions.”

• “learning has taken place mainly as a “combined inspiration”. (...) Reports and results have stimulated discussions on some concrete national policy instruments.”

• “[OMC] engages actively national civil servants to a higher degree than other instruments.”

• “there has been a high degree of commitment and engagement by most participants.”

(EU Commission, 2009, The Open Method of Coordination in Research Policy. Pp. 3f.)
Figure 3: A strategic Open Method of Coordination in research and innovation policy

(ibid., p. 39)
2. Theoretical Analysis

Target indicators

national strategy reports

Common report incl. *best practices*

Implementation of *best practices by MS*

iteration
Related types of ideas/behaviour:

- governments compare their performance with others' (→ yardstick competition)
- governments mimic policies observed elsewhere (tax rates, welfare benefits, expenditure patterns, …)
- fiscal decentralisation as a discovery procedure à la Hayek; “laboratory federalism" (Oates, 1999) allows for experimentation and hopes for the diffusion of good policies through imitation
- policy learning without institutional framework: model uncertainty, limited knowledge about mappings from policy actions to policy outcomes

→ governments adopt copycat behaviour, with some experimentation

→ traditional analysis (“rational” best-reply behaviour) does not apply
2. Theoretical Analysis

Scenario

symmetric game where agents play repeatedly against and learn from (all) other agents in the population.

- \( N > 1 \) players
- finite and common strategy set: \( S \) with cardinality \(|S| < \infty\)
- strategy vectors: \( s = (s_1, \ldots, s_N) = (s_k|s_{-k}) \in S^N \)
- payoffs: \( \pi_k : S^N \mapsto \mathbb{R} \)
- symmetry: \( \pi_k = \pi(s_k|s_{-k}); \) invariant to permutations in \( s_{-k} \).
- knowledge of \( \pi \) is imprecise; players are not able to calculate best responses.
2. Theoretical Analysis

Behavioural rules

Imitation = players observe and replicate other’s behaviour.

Definition

A *behavioral rule* for player $k$ is a mapping $F_k : X_k \mapsto S$ where:

- $X_k$ is the set of possible observations, and,
- for $x \in X_k$, $F_k(x) \subseteq S$ is the set of strategies that $k$ may take next period.

Symmetry: A system of rules $(F_1, \ldots, F_N)$ such that

- all players have same set of possible observations: $X_1 = \ldots = X_N =: X$
- all players would behave identically: $F_1(x) = \ldots = F_N(x)$ for all $x \in X$. 

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2. Theoretical Analysis

**Imitative rules**

Set of strategies currently chosen at a profile \( s \in S^N \):

\[
C(s) := \{ s \in S | s = s_k \text{ for some } k \}
\]

**Definition**

A behavioural rule \( F \) is **imitative** if

(i) the set of possible observations contains current strategies and payoffs of all players:

\[
X = S^N \times \mathbb{R}^N \quad \text{where} \quad x = (s, (\pi_1, \ldots, \pi_N))
\]

(ii) players (can) only choose among current strategies:

\[
F(x) \subseteq C(s) \quad \text{for all} \quad x \in X.
\]
Henceforth, abusing notation,

$$F(x) = (F(x))_s \in \Delta^S$$

as the probability distribution that player chooses $s$, given $x$.

**Two** conditions on imitation:

**(A) Strategies with maximal payoffs are imitated with positive probability:** For $s_k, s_j \in C(s)$, if $\pi(s_k|s_{-k}) \geq \pi(s_j|s_{-j})$ for all $j$, then $F(x)_{s_k} > 0$.

**(B) Strategies with worse payoffs than the own are never imitated:** If $\pi(s_k|s_{-k}) > \pi(s_j|s_{-j})$ for some $j \neq k$, then $F(x)_{s_j} = 0$. 
encompasses, e.g., adoption of best practices (→ OMC):

**Definition**

With the *imitate the best*-rule, only payoff-maximal strategies have a positive probability to be adopted in the next period:

For $s_k, s_j \in C(s)$, if $\pi(s_k|s_{-k}) \geq \pi(s_j|s_{-j})$ for all $j$, then $F(x)s_j = 0$.

- does not encompass, e.g., frequency-based rules.
2. Theoretical Analysis

Dynamics

Perturbed imitation dynamics (Alos-Ferrer and Schlag, 2008):

- **Imitation**: each period, players receive revision opportunities with probability $0 < 1 - \delta < 1$ ($\delta = \text{“inertia”}$). When allowed to revise, players use an imitation rule, obeying properties (A) and (B) defined above.
- **Experimentation**: Additionally, with an exogenous probability $0 < \varepsilon < 1$ players choose any strategy at random.

$\implies$ Markov chain over strategies, indexed by the $\varepsilon$

Of interest: long-run outcomes (stochastically stable states): (limit) invariant distribution of the chain as $\varepsilon \to 0$ (see Kandori et al., 1993, or Young, 1993).
2. Theoretical Analysis

ESS

Definition

A strategy $s^E \in S$ is called (finite-population) evolutionarily stable strategy (ESS) if for any strategy $s \in S$

$$\pi(s^E | s, s^E, \ldots, s^E) \geq \pi(s | s^E, s^E, \ldots, s^E).$$

An ESS is *strict* if the above inequality holds strictly for all $s \neq s^E$.

Definition

An ESS $s^E$ is called (strictly) globally stable, if a population using $s^E$ cannot be invaded by any number $m$ of mutants who all use $s \neq s^E$. I.e.,

$$\pi(s^E | s, \ldots, s^E, \ldots, s^E) \geq \pi(s | s, \ldots, s^{E}, \ldots, s^E)$$

for $1 \leq m \leq N - 1$. 

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2. Theoretical Analysis

Theorem

Theorem (Schenk-Hoppé, 2000; Alós-Ferrer and Ania, 2005; Alos-Ferrer and Schlag, 2008)

For an arbitrary symmetric game, if there exists a strictly globally stable finite-population ESS $s^E$, then $s^E = (s^E, \ldots, s^E)$ is the a long-run outcome of all perturbed imitation dynamics where the imitation rule satisfies (A) and (B).
2. Theoretical Analysis

Modes of governance in the EU

Harmonization, Community Method
• Coercion, unanimity
• Loss of national sovereignty
• (possibly) efficient policy outcomes

OMC
• Voluntary (soft law) and subsidiary
• Coordination on best practices
• Dynamic process
• Hope: convergence towards efficiency

decentralization, „laissez-faire“
• National autonomy
• Inefficiency due to spillovers: tax competition, social dumping

cooperative game theory
Evolutionary game theory (ESS)
Non-cooperative game theory (Nash-equilibrium)
2. Theoretical Analysis

Observations

- A (finite-population) ESS is generally not a Nash equilibrium (NE) strategy.

\[ \pi(s^E | s, s^E, \ldots, s^E) \geq \pi(s | s^E, s^E, \ldots, s^E). \]

- Schaffer (1988): An ESS $s^E$ gives rise to a symmetric NE of the game in relative payoffs:

\[ s^E = \arg \max_{s \in S} \left[ \pi(s | s^E, \ldots, s^E) - \pi(s^E | s, s^E, \ldots, s^E) \right]. \]

- Guse et al. (2010), Ania (2008): Sufficient conditions such that ESS $\subseteq$ NE:
  - weak payoff externalities: always

\[ |\pi_k(x) - \pi_k(x'|x_k)| > |\pi_j(x) - \pi_j(x_k'|x_k)| \]

  - weakly competitive game: always

\[ \pi_k(x) > [<] \pi_k(x'|x_k) \Rightarrow \pi_j(x) < [>] \pi_j(x_k'|x_k) \]
3. Applications

1. The OMC
   Example
2. Theoretical Analysis
3. Applications

   3.1 No strategic interaction
   3.2 ESS is not a Nash equilibrium
   3.3 ESS is a Nash equilibrium

4. Conclusions
3.1 No strategic interaction

No strategic interaction

Suppose that for all $s_k \in S$,

$$
\pi(s_k \mid s_{-k}) = \pi(s_k \mid s'_{-k}) \quad \text{for all } s_{-k}, s'_{-k}
$$

Then:

**Result**

*Without any strategic interaction, all $s^* = \arg\max_{s \in S} \pi(s \mid \cdot)$ are long-run outcomes of the perturbed imitation dynamics.*

$\implies$ OMC implements efficient strategies; OMC is “rational” and optimal.

OMC leads to beneficial learning from imitation.
3.2 ESS is not a Nash equilibrium

Income redistribution in a common labour market

joint paper with Ana B. Ania

- borrowed from Wildasins (1991)
- \( N > 1 \) identical jurisdictions
- one immobile, rich household in each jurisdiction
- total number of poor workers: \( N \cdot L \)
- poor are costlessly mobile; each supplies one unit of labour wherever he lives
- \( \ell_k \) poor workers in \( k \)
- output in \( k \): \( f(\ell_k) \) with \( f' > 0 > f'' \)
- consumption of worker in \( k \): wage plus transfer \( s_k \in S = [0, \bar{s}] \):

\[
c_k = f'(\ell_k) + s_k.
\]

- costless mobility: all \( c_k \) are equal in equilibrium
3.2 ESS is not a Nash equilibrium

- subsidy vector $\mathbf{s} = (s_1, \ldots, s_N)$
- migration equilibrium:

$$\sum_{i=1}^{N} \ell_i(\mathbf{s}) = N \cdot L$$

$$f'(\ell_k(\mathbf{s}))+s_k = f'(\ell_j(\mathbf{s}))+s_j =: c(\mathbf{s}) \text{ for all } k, j \in 1, \ldots, N.$$  

- comparative statics: Higher $s_k$ leads to higher $\ell_k$, lower $\ell_j$, and higher $c$. 

3.2 ESS is not a Nash equilibrium

- income of the rich in $k$:
  \[ y_k = f(\ell_k) - [f'(\ell_k) + s_k] \cdot \ell_k. \]

- social welfare in $k$:
  \[ U_k = U(y_k, c_k) \]

- payoff function of $k$:
  \[ \pi(s_k | s_{-k}) = U \left( f(\ell_k(s)) - c(s)\ell_k(s), c(s) \right). \]

  payoff function $\pi$ is symmetric.
3.2 ESS is not a Nash equilibrium

Results

Result (Nash equilibrium)

- (Wildasin, 1991) A Nash equilibrium of a decentralized redistribution game involves inefficiently low consumption of the poor (underprovision of redistribution).
- If $N \to \infty$, then $s^N \to 0$.

Result (Imitation, OMC, ESS)

The (strictly globally stable) ESS of a decentralized redistribution game has zero transfers to the poor: $s^E = 0$. 
3.2 ESS is not a Nash equilibrium

Intuition:

- **absolute payoffs:** \( u(y_k, c_k) \)
  optimal policy balances the effects that a higher \( s_k \) ...
  - lowers \( y_k \)
  - increases \( c_k \).

- **relative payoffs:** \( u(y_k, c_k) - u(y_j, c_j) \)
  higher \( s_k \) means
  - lower \( y_k \) — which lowers \([u_k - u_j]\)
  - higher \( y_k \) — which lowers \([u_k - u_j]\)
  - increases of \( c_k = c_j = c \) — which is neutral for \([u_k - u_j]\).

→ very strong incentives to drive down \( s_k \).

**Prediction:** OMC leads to complete breakdown of the welfare state.
(see also Vega-Redondo, 1997, on Cournot competition).

Imitation of best practices leads to disaster.
Decentralized redistribution with (extreme) mobility

again: joint paper with Ana B. Ania

- $N$ identical countries
- each country hosts one immobile rich with income $w_R \gg 0$
- economic area hosts a mass $\nu \geq N$ perfectly mobile poor with incomes $w_P \geq 0$
- $L_k$: number of poor who settle in $k$

redistribution: the rich in $k$ finances transfer $s_k$ to every poor in $k$:
- consumption of poor in $i$: $c_k^P = w_P + s_k$
- consumption of rich in $i$: $c_k^R = w_R - L_k s_k$

the poor migrate to where $c_k^P$ (i.e., where $s_k$) is largest
3.3 ESS is a Nash equilibrium

Migration equilibrium

Given: transfer vector $s = (s_1, \ldots, s_N)$

- $M(s) := \{i \mid s_i = \max\{s_1, \ldots, s_N\}\}$: the set of countries with the highest subsidy
- Then:

$$L_k(s) = \begin{cases} 0 & \text{if } k \notin M(s) \\ \nu/\#M(s) & \text{if } k \in M(s). \end{cases}$$
3.3 ESS is a Nash equilibrium

Generalized utilitarianism

Objective function:

\[ SWF_k = L_k \cdot u(c_k^P) + u(c_k^R) \]
\[ = L_k(s) \cdot u(w_P + s_k) + u(w_R - L_k(s) \cdot s_k) =: \pi(s) \]

- population size and composition matters
- however: repugnant conclusion

auxiliary payoff functions: For \( i = 1, \ldots, N \), consider:

\[ f(i, s) := \frac{N}{i} \cdot u(w_P + s) + u(w_R - \frac{N}{i} \cdot s). \]

payoff of a (populated) country if exactly \( i \) countries share all poor.
3.3 ESS is a Nash equilibrium

\[ f(1, s) \]
\[ f(2, s) \]
\[ f(n, s) \]

\[ u(w_R) \]
\[ s^*(1) \]
\[ \bar{s}(n) \]
\[ \hat{s}(1) \]
\[ \hat{s}(2) \]
\[ \hat{s}(\frac{n}{2}) \]
\[ \hat{s}(n-2) \]
\[ \hat{s}(n-1) \]
\[ \hat{s}(n) \]

NE

(strict) ESS
The effects of experimentation (radius-coradius-theorem, [Ellison, 2000]):

For $n$ even: single point

Illustration for the case of $n$ odd
3.3 ESS is a Nash equilibrium

NESS is a Nash equilibrium.

\( f(1, s) \)
\( f(2, s) \)
\( f(n, s) \)

\( u(w_R) \)

\( s^*(1) \)
\( \bar{s}(n) \)
\( \hat{s}(1) \)
\( \hat{s}(2) \)
\( \hat{s}(\frac{n}{2}) \)
\( \hat{s}(n-2) \)
\( \hat{s}(n-1) \)
\( \hat{s}(n) \)

NE

(strict) ESS

globally stable ESS

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Summary for this scenario:

- in the long run, imitation-cum-experimentation leads to intermediate subsidies
- OMC induces countries to learn moderate redistribution policies
- strong refinement both of NE and ESS
- efficiency-wise, everything is possible

OMC leads to policy moderation.
This presentation:

- OMC as a relatively new mode of governance in the EU
- Key elements: iterative process, based on behavioural rule to *imitate the best*
- Long run outcomes of OMC are strictly globally stable ESS
- OMC is predictively equivalent to a game with relative payoff concerns.

(Theoretical) Performance:

- fine if there are no interdependencies
- with interdependencies: crucially depends on the specific game

Be careful with general verdicts or praise on the OMC.
Thank you.