Distribution and re-distribution of CAP expenditure throughout the EU

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Objectives (1)

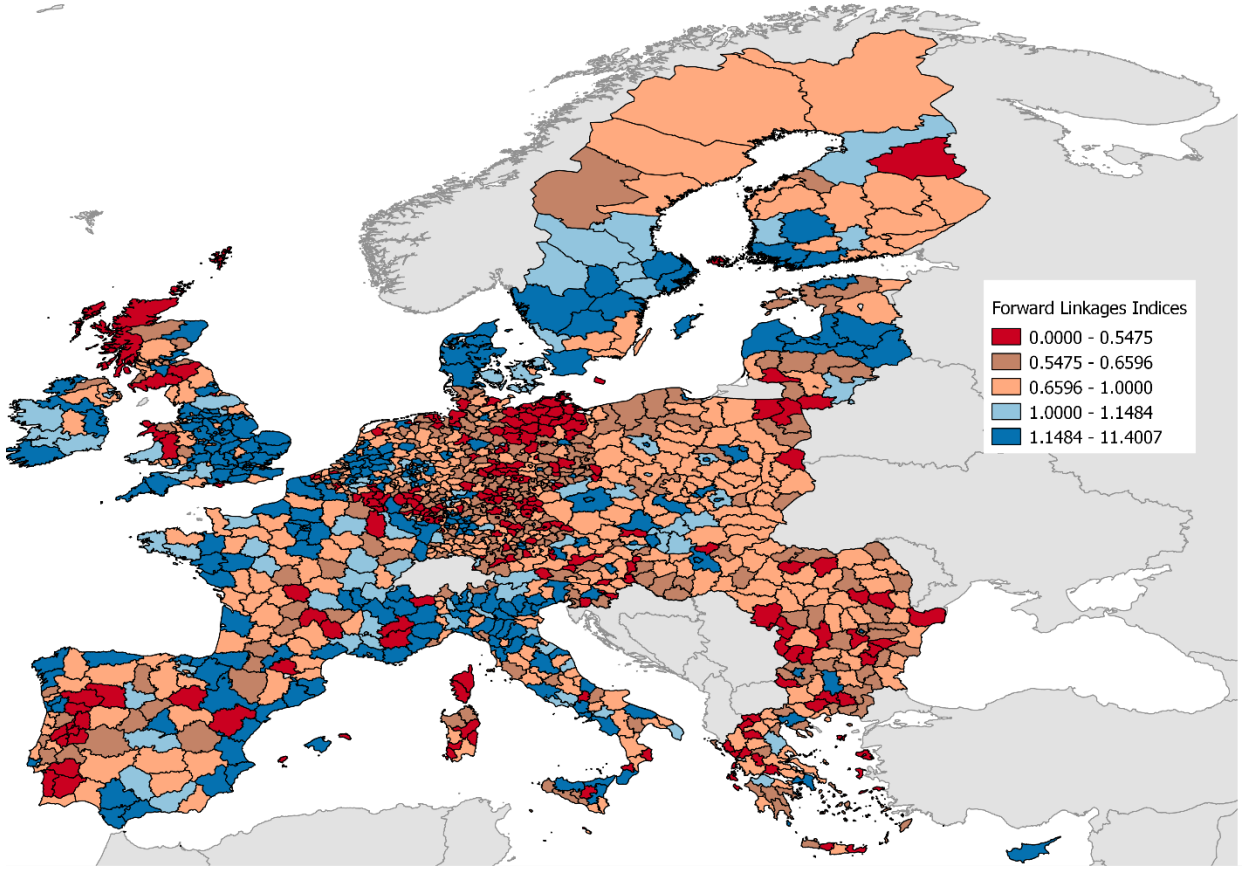
- Assessing **spatial distribution** and **re-distribution of Common Agricultural Policy** (CAP) expenditure through the European Union (EU) space
  - First Pillar (direct payments and market intervention measures) and Second Pillar
  - Rural-urban relationships
- Two main logical parts
- Analysis of spatial **distribution** of 2007-2011 CAP payments
  - Which regions were policy funds (distinguished by measures) addressed to?
- Analysis of **re-distributional effects** of past and new CAP induced by regional economic integration
  - Secondary objective: how some crucial Member States' decisions about the new CAP affect distribution of policy effects

Objectives (2)

- The influence of **interregional spillover effects** on final distribution of CAP effects
  - Positive effects in exporting regions induced by regions that purchase inputs from outside to satisfy internal requirements (i.e. due to policy shock)
- CAP effects**: GDP** and **employment** effects, **regional disparities**
- In defining and calibrating regional policy, the **knowledge of spillover effects** is particularly **strategic**
  - Policy effects to regions which are not targeted by policy (**unpredicted effects**)
  - Policy effects to regions which are already targeted by policy (**multiplied policy effects**)
- Policy objectives can be prejudiced (i.e. balanced territorial development)
- Policy makers should take account of these redistributional effects in allocating funds

Area under study

- **1.288 European regions** of **27 Member States**
- High level of territorial disaggregation: **NUTS 3 level** – NUTS 2006 classification)
- Broad coverage of the analysis (EU-27)
- Previous studies based on NUTS 2 level and EU-15 and on distributional effects



Methodology for re-distributional effects

- **Demand-driven multi-regional closed I-O model**
  - Need to capture intersectoral and spatial relationships and to face data scarcity especially at sub-regional levels
- Different kinds of **effects**:
  - **Direct** effects
  - **Indirect** effects
  - **Induced** effects
  - **Spatial** effects (**spillover** and feedback effects)
- **2007 6-sector x 1.288 EU-27 Regions**
  - First attempt to construct and apply an I-O model at a very high level of territorial disaggregation of European MSs

Data and regionalisation

- **Hybrid procedure of regionalization** (mechanical methods + superior data)
- **2007 59-sector supply and use tables** for 27 European MSs
- Converted into **national industry-by-industry 59-sector I-O tables**
- Aggregated into six sectors (AGR, IND, COS, COM, BUS, PUB)
- Three-stage recursive **regionalization procedure** (Bonfiglio, 2006)
- **A)** Application of **location quotients**
  - Augmented **FLQ** (Flegg and Webber, 2000)
  - **Regional input coefficients** and total regional imports of each region from the rest of EU-27
- **B) Gravity model**
  - Probability of attraction = f[*distance* (-), *importance of regional sectors* (+)]
  - Allocation of total imports among exporting regions (**trade coefficients**)
- **C)** Insertion of **superior data** (such as sectoral trade shares between MSs) and **balancing**
- Result: **(6-sector) x (1.288-region) I-O model of EU-27**

2014-2020 CAP reform: **direct payments**

Direct payments	Fund distribution	Optional	Constraints
Basic payment	Residual. 18% (if optional payments are fully granted) to about 70% (68% if optional payments are not activated and with PYF = 2%) of national ceiling	No	Minimum requirements Active farmer Cross-compliance 3 agricultural practices (or equivalent)
Redistributive payment	≤30%	for MSs	As basic payment
"Green" payment	30%	No	3 agricultural practices (or equivalent) (not for some farms)
Payment for farmers in areas with **natural constraints**	≤ 5%	for MSs	Localisation in areas with natural constraints
Payment for **young farmers**	≤ 2%	No	<= 40 years old New entrant (<=5 years)
Voluntary **coupled** support	≤ 8% (≤13% or >) (+2% max for protein crops)	for MSs	Specific crops and/or regions
Small farmers scheme	≤ 10%	for MSs and farmers	No constraints

2014-2020 CAP reform: **regionalisation**

- MSs can decide to **redistribute the national ceiling for basic payments among regions** (regional ceilings)
  - Objective and non-discriminatory criteria
    - Agronomic and economic criteria
    - Agricultural potential
    - Institutional or administrative criteria (administrative borders)
- Crucial questions transferred to MSs
  - **How to identify regions?**
    - Administrative borders or other kinds of criteria -> many small regions or few big regions
  - **How to distribute the national ceiling for basic payments?**
    - Agricultural area (all agricultural activities)
    - Value added (richer agriculture)
    - Employment (high-intensity-labour agriculture)
    - Historical direct payments (historical farmers)

Alternative scenarios (1)

- Policy effects across space may depend on how basic payments will be distributed across regions (if a regional model is applied)
  - Thus, they also depend on amount of funds apportioned to basic payments
- Alternative scenarios have be defined on the basis of these aspects (criteria of regionalization and amount to basic payments)
- **Assumption**: all MSs opt for regionalization of basic payments (regional ceilings) and regions are identified on the basis of administrative borders (NUTS-3 level)
  - In order to take advantage of the high level of the territorial disaggregation available

Alternative scenarios (2)

Scenarios	Description
Scenario A	**18% of net national ceilings to basic payments**. 82% to other payments distributed on the basis of UAA. Rural development policy and market measures funds distributed nationally and then regionally on the basis of historical distribution.
Scenario A.1	Basic payments distributed on the basis of **UAA**. This means that all payments are distributed on the basis of UAA
Scenario A.2	Basic payments distributed on the basis of **agricultural value added**
Scenario A.3	Basic payments distributed on the basis of **historical distribution**
Scenario B	**68% of net national ceilings to basic payments**. 32% to other payments distributed on the basis of UAA. Rural development policy and market measures funds distributed nationally and then regionally on the basis of historical distribution.
~~**Scenario B.1**~~	Basic payments distributed on the basis of **UAA**. This means that all payments are distributed on the basis of UAA. It equals Scenario A.1 and could then be dropped.
Scenario B.2	Basic payments distributed on the basis of **agricultural value added**
Scenario B.3	Basic payments distributed on the basis of **historical distribution**
Scenario C	**Only rural development policy** meaning a transfer of funds (direct payments, market measures) from first to second pillar in addition to rural development policy funds. Total funds are distributed nationally and then regionally according to historical distribution related to rural development policy.

Modelling CAP into I-O model

- Conversion of policy funds into a **regional** vector of **sectoral final demands**
- 2007-2011 CAP Payments
  - Data were available at a regional level (NUTS-3) but not a sectoral level
  - Bonfiglio et al. (2006) approach to distribute funds sectorally
  - **Direct payments**
    - Income received independently from the activity carried out and the level of production (decoupled from production)
    - Modelled as increase in **household consumption** (local consumption ratios)
  - **Market interventions**
    - Resources paid in relation to the extent of their agricultural activity (coupled to production)
    - Modelled as increase in **agricultural final demand**

Modelling CAP into I-O model

- 2007-2011 CAP Payments
  - **Rural development**
    - (a) **Measures supporting investments and purchases of services**
      - Identification of the main sectors to which they are targeted
        - by experts' judgment and on the basis of existing rural development programmes
      - Distribution of funds using the shares of local inputs purchased by agriculture from the sectors involved, retrieved from the multiregional I-O table
    - (b) **Measures compensating costs**
      - Payments given to farmers to support them in sustaining higher costs induced by the respect of environmental, quality, animal welfare and other specific constraints imposed by rural development policy
      - They are similar to direct payments and were therefore allocated in the same way

Modelling CAP into I-O model

- 2014-2020 CAP
  - Only ex-ante allocations are available
  - In addition to sectoral estimation also regional estimation was necessary
  - **Direct payments**
    - **Known**: national allocation of direct payments from 2014 to 2020
    - The regional distribution within countries depends on the adopted scenario
    - Sectoral allocation as usual
  - **Market interventions**
    - **Unknown**: total amount and national funds
    - Total amount derived as (total first pillar budget (MFF) - national ceilings of DPs)
    - National and regional allocation using shares of 2007-2011 payments
    - Sectoral allocation as usual

Modelling CAP into I-O model

- 2014-2020 CAP
  - **Rural development**
    - **Known:** national distribution of funds
    - Regional allocation made by shares of historical payments
    - Sectoral allocation was more problematic (priorities rather than axes, different framework of measures)
      - **Assumption**: sectoral distribution reflects past decisions. It is likely that countries (regions) will confirm most of the distributional decisions taken in the previous programming period
      - New measures distinguished in type (a) and (b)
      - **Correspondence table** between older and newer versions
      - Fund allocation to new measures according to shares of historical payments related to the corresponding old measures
      - Balancing to respect the **new constraints**: 30% to environmental and climate measures; 5% to Leader programmes
      - Application of national co-financing rates
      - Sectoral allocation as usual

Results: Past policy

Effects in terms of GDP activated by 2007-2011 CAP Payments per regional group

Groups	% Payments	% Effects	Effects / Payments	% Extra-local effects on total	% Extra-local effects	% GDP (2007)	Diff. % GDP
Rural	51.0	32.4	0.45	26.3	15.8	16.9	0.26
Intermediate	36.9	32.6	0.63	48.9	29.5	31.6	0.02
Urban	12.1	35.1	**2.05**	**84.3**	**54.7**	51.6	-0.28
Convergence	34.5	25.3	0.52	38.5	18.0	14.8	0.18
Competitiviness	65.5	74.7	0.81	59.3	82.0	85.2	-0.18
Total	100.0	100.0	0.71	54.0	100.0	100.0	0.00

- **Rural** and **intermediate regions** received **90% of CAP Payments**
- **Over 50% of total effects** are due to **interregional spillover effects** (% of extra-local effects is higher in urban regions - 55% of total extra-local effects)
- In spite of fund distribution, **GDP effects** are equally distributed and **slightly more marked in urban regions**. This is due to their exports to rural regions; in fact, **84% of their effects are due to interregional spillover effects**
- Ratio effects/payments (**policy effectiveness**) is particularly **high in urban regions**: for every 100 € of payments the CAP produced about 200 € of GDP in urban regions

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- Most payments went to **competitiveness regions** (more developed) rather than convergence regions (less developed): they received **66% of expenditure** (this is because of the first pillar which supported the most competitive agriculture to a greater extent)
- Competiveness regions captured **82% of total extra-local effects**
- They absorb **75% of total effects** generated by the CAP. This is due to: (a) higher concentration of funds in these regions; (b) their exports to less developed regions, which explain 60% of their GDP effects
- They exhibit a higher ratio Effects/Payments (**policy effectiveness**)

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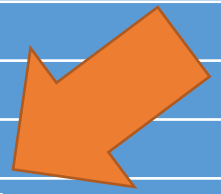
- **Regional disparities** slightly decreased and this occurred in spite of unbalanced policy distribution in favour of more developed regions
  - Contribution of rural and convergence regions to total GDP increased by 0.26 and 0.18%, respectively
  - This is due to the **sensitivity of economy to shocks** (in this case, injection of policy funds), which is evidently higher in less developed regions

Results: 2014-2020 CAP

Effects produced by 2014-2020 CAP per scenario in terms of GDP

Scenario	Effects / Expenditure (€)	% Extra-local effects	CV
Scenario A1 (UAA)	0.76	53.85	1.6338
Scenario A2 (VA)	0.75	53.70	1.6354
Scenario A3 (Historical)	0.76	53.83	1.6339
Scenario B1 (UAA)	0.76	53.85	1.6338
Scenario B2 (VA)	0.72	53.25	1.6399
Scenario B3 (Historical)	0.76	53.80	1.6341
Scenario (C) (First to Second Pillar)	0.87	53.87	1.6323



- Higher **policy effectiveness** associated with alternative scenarios in terms of both GDP (it was 0.71)
- Differences in terms of policy effects related to alternative **assumptions about direct payments** (scenarios A1-3, B1-3) are very small
  - More marked differences in the case of **agricultural value added**: lower policy effectiveness and lower reduction in regional disparities (higher CV)
- A **deep change of the CAP** = higher policy effects and higher reduction in regional disparities (lower CV)

Results: 2014-2020 CAP

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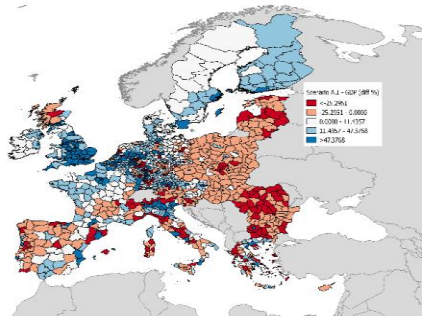
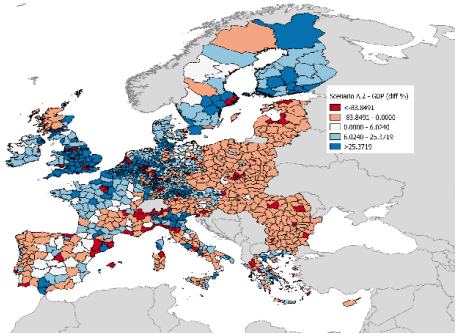
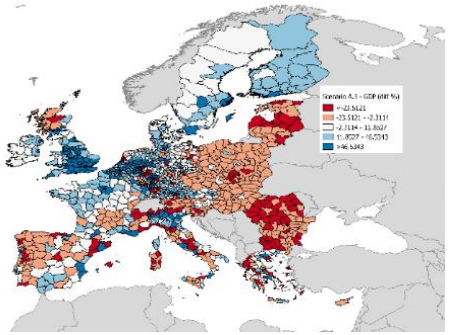
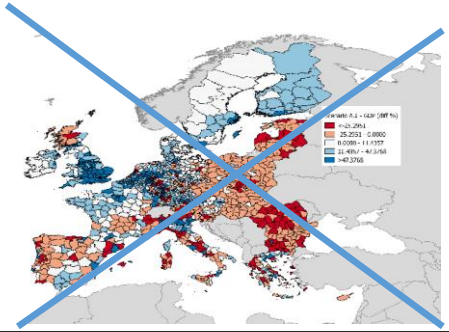
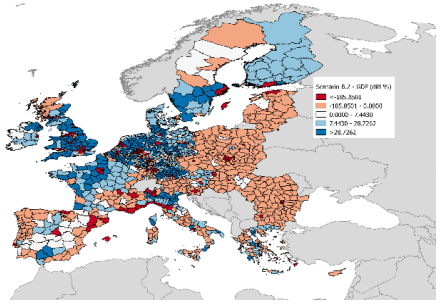
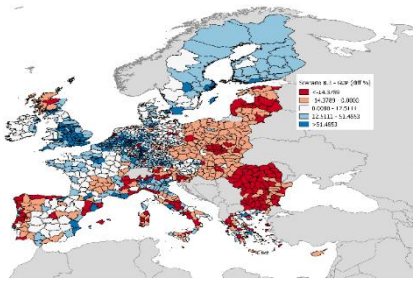
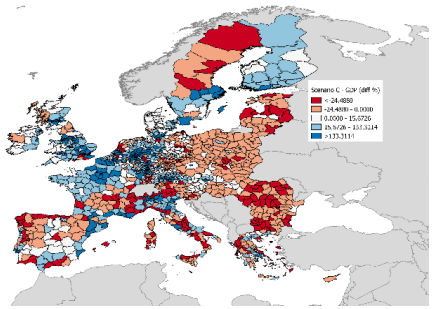
- The **% of spillover effects** in relation to total effects does not change significantly in the different scenarios in comparison with the past policy framework
- However, there are **lower shares of spillover effects** associated with all alternative scenarios
- This means that policy effects are more due to local expenditure and thus to internal linkages than interregional relationships (more spread distribution of funds that brings about an increase in total effects and a consequent reduction in the share of extra-local effects)

Results: Territorial distribution of spillover effects intensity

Scenario	1 (UAA)	2 (VA)	3 (HP)
A			
B			
C			

- Differences of **ratios spillover-local effects** in terms of GDP (blue = increases; red = decreases)
- All scenarios lead to a **reinforcement of spillover effects in the Western European regions** having already high relative effects
- This is particularly evident in scenarios allocating basic payments based on agricultural value added (A2,B2)

Concluding remarks (1)

- As expected, CAP expenditure (both past and future) is mostly allocated to **rural regions**
- **Distribution of final effects** (redistribution of CAP expenditure) does not follow the same patterns
  - **Urban regions** are those attracting higher GDP effects
  - This is due to **re-distributional effects** induced by interregional spillover effects (which explain over 50% of total GDP effects)
- **Criteria of regional distribution of funds** allocated to basic payments do not affect significantly final policy effects
  - **Best decision**: a criterion based on **eligible hectares**
    - Higher effects and more balanced distribution of effects among all regions
- **Best scenario**: dismantlement of pillars and the transfer of funds to rural development policy
  - Higher policy effectiveness and higher contribution to reduction in differences between rural and urban regions
  - This depends on **characteristics of rural development policy**, which finances a variety of sectors and activities on the basis of more targeted and tailored objectives than first pillar does

Concluding remarks (2)

- Redistribution of funds provided by the new CAP in favour of poorer European countries (the so-called **process of external convergence**) will produce a decrease in the resources attributed to richer regions
- **The regions penalised** by this process **will continue to benefit from policy indirectly** thanks to their exports to the regions receiving higher shares of funds compared with the past
  - These **benefits could be relatively higher** (than in the past) since exporting regions are asked to satisfy higher demands coming from less developed regions
  - The loss of benefits produced by a reduction in funds could be compensated by an increase in spillover effects
- The external convergence is not only **fair from an equity point of view** (even if still unsatisfactory) but can also **produce economic advantages** for the regions directly penalised by a fund reallocation