Explaining POs' success and impact in the F&V sector

Z. Bouamra-Mechemache[1], T. Garcia-Azcarate[2] & A. Zago[3]

[1]Toulouse School of Economics, Toulouse - FR
[2]Instituto de Economia, Geografia y Demografia (IEGD-CSIC), Madrid - ES
[3]University of Verona, Verona - IT

A.R.E.F.L.H. General Assembly - Bruxelles

March 28, 2018

Motivation, I

In the fruit and vegetables (F&V) sector, long known support to POs:

- POs recognized by the EU since the 70s.
- After the 1996 reform, they benefited from subsidies for initial (50%) and operational (2%/year) expenses (EU Reg. 2200/96).
- In 2010, in the EU-27 about 43% of F&V value marketed by POs (31% in 2004).
- However, great **differences across countries, regions, and products**. In terms of the F&V value going through POs,
  - **countries**: more than 90% in the Netherlands and Ireland, but about 50% in France, Italy and Spain, and lower in Poland, Finland, and Portugal (around or below 20%);
  - **regions**: in Italy, for instance, from $< 20\%$ (e.g., Sicily, Sardinia) to $> 50\%$ (e.g., Trentino, Emilia-Romagna);
  - **products**: in France, for instance, from $< 30\%$ to 75% for the fresh F&V sector.

Motivation, II

- These differences have led some commentators to argue that

  > *"the POs in the F&V sector do NOT seem to have reached the objectives assigned them by the Common Market Organization" (Camanzi et al., 2010).*

- To the best of our knowledge, the reasons for the limited success of POs still remain to be properly investigated.
- In addition, there is limited evidence on:
  - the economic impact of POs on participating farmers;
  - the enviromental impact of operational programmes;
  - the socio-economic impact of POs in rural areas.

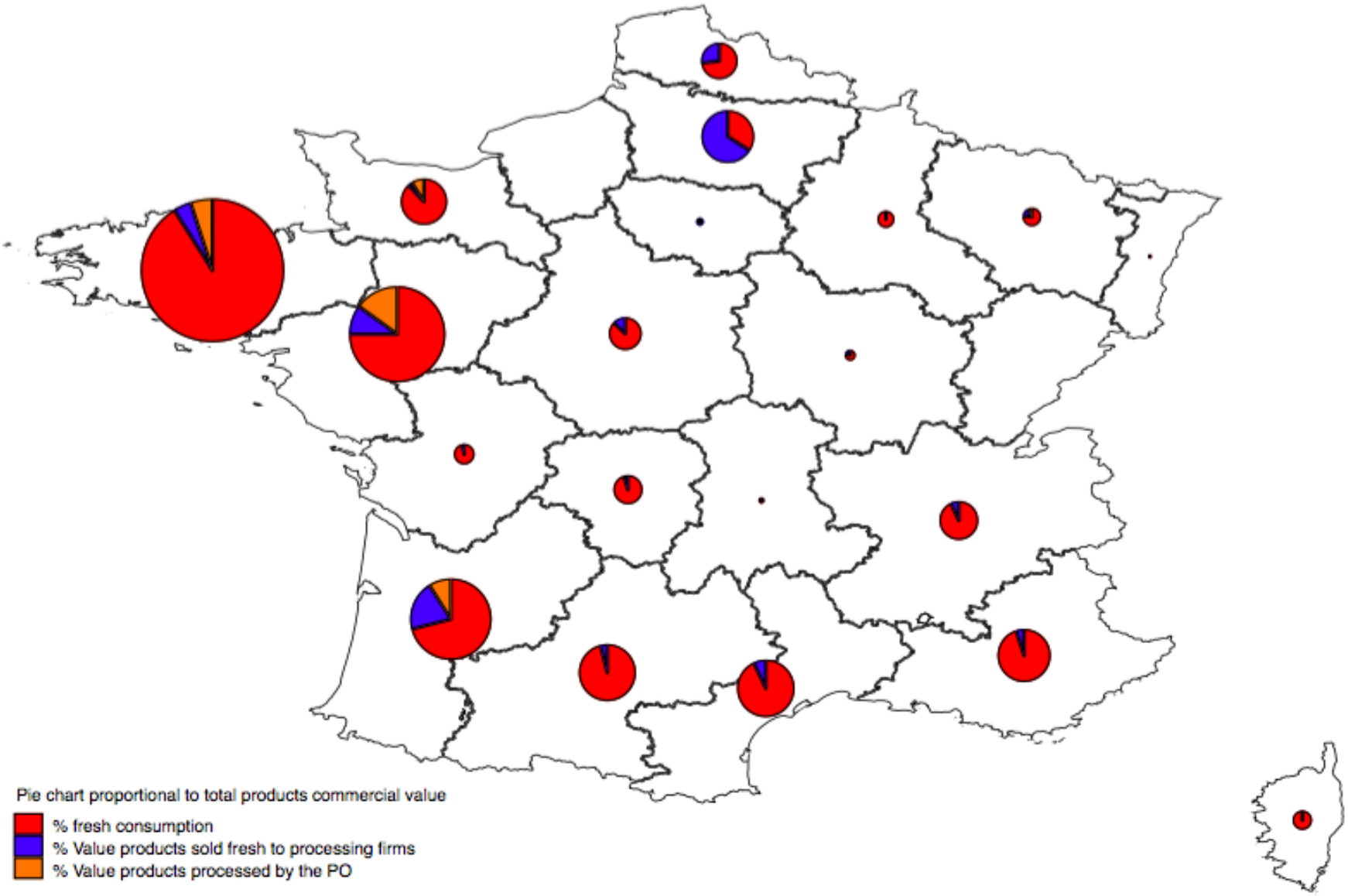
Plan of the research project

- In the overall project, we propose to investigate
  - the determinants of participation into POs, and
  - their impact on different dimensions of farms upstream, and
  - the impact on rural areas downstream.
- As a preliminary step, we investigate whether performances by POs are explained by their strategic choices or by the environment in which they operate. We thus proceed as follows.
  (1) We define **POs' business models** by using different characteristics and choices of POs as inputs in a cluster analysis.
  (2) We use cluster analysis also to investigate differences in the **market environment** at the regional (NUTS2) level, using the information about the socio-economic conditions under which each PO operates.
  (3) We then look at **POs' performances** across (1), and (2).

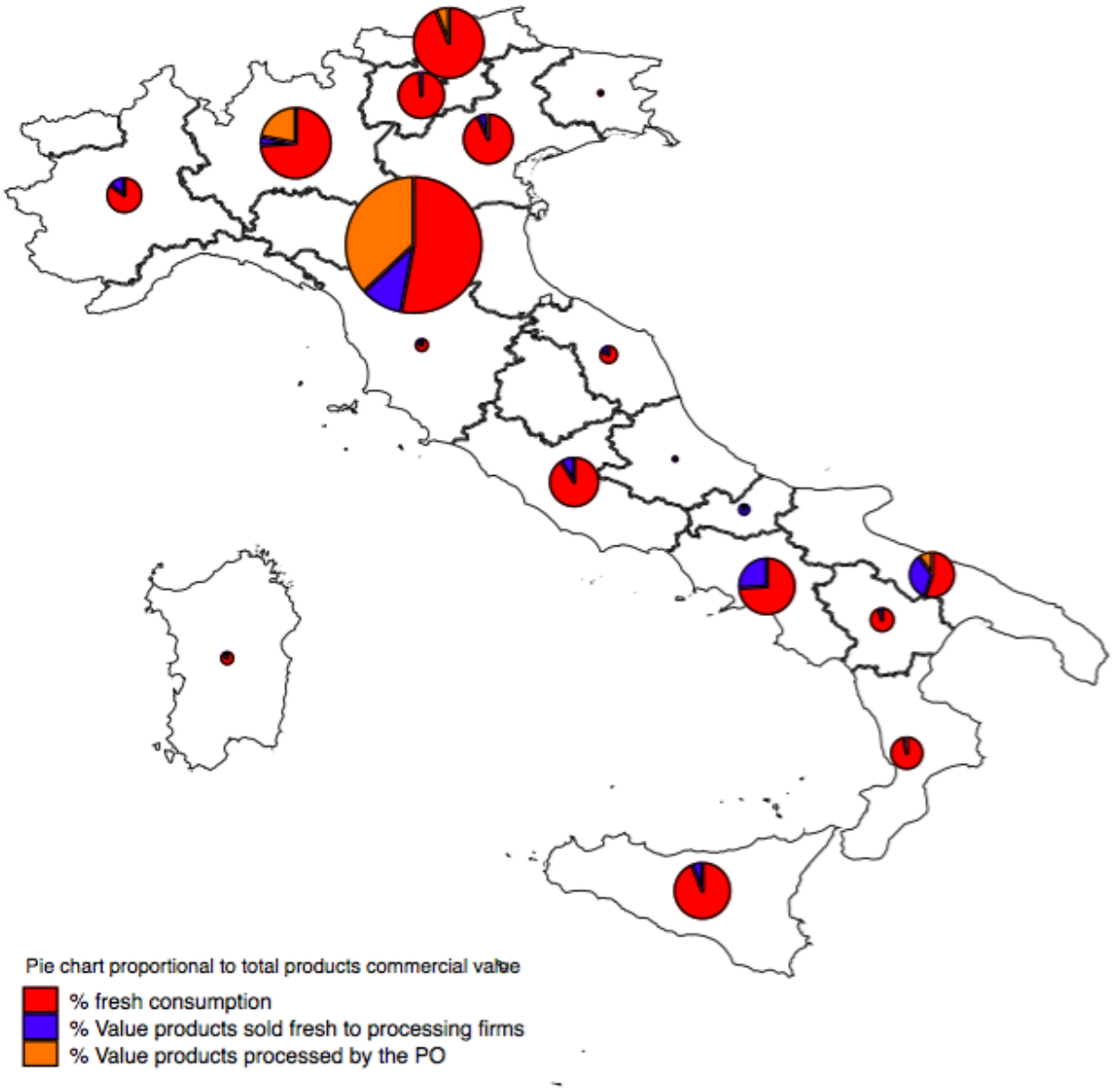
The data

- To get the individual POs data we contacted the national authorities of
  - France,
  - Italy,
  - Spain.
- We obtained data for the 2007-2014 regarding all the POs that provided data to the national autjorities.
- The other data are from standard sources, such as
  - Eurostat,
  - OECD,
  - etc.
- Now, a glimpse at the PO data for 2014.

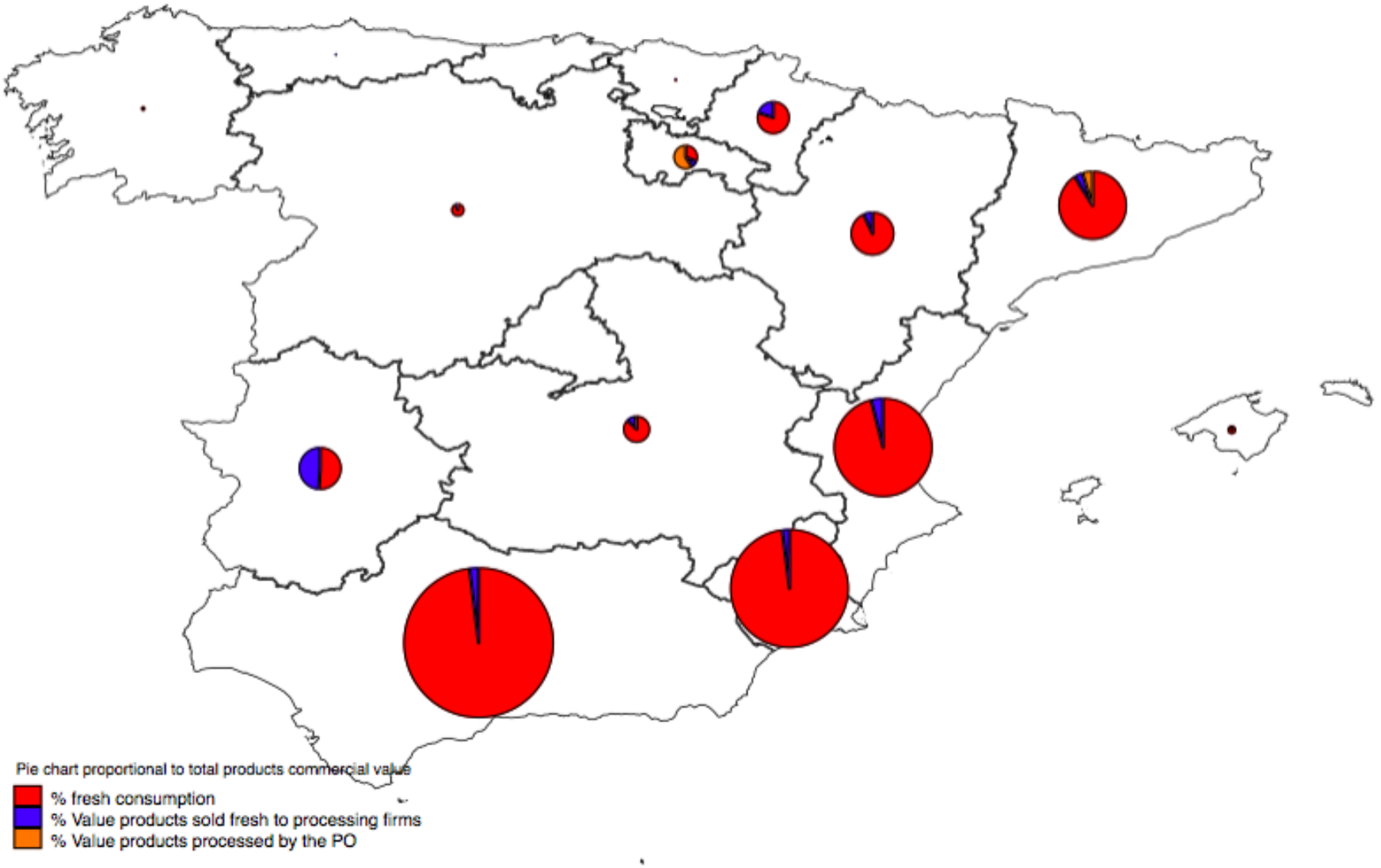
Distribution of VMP by destination - France



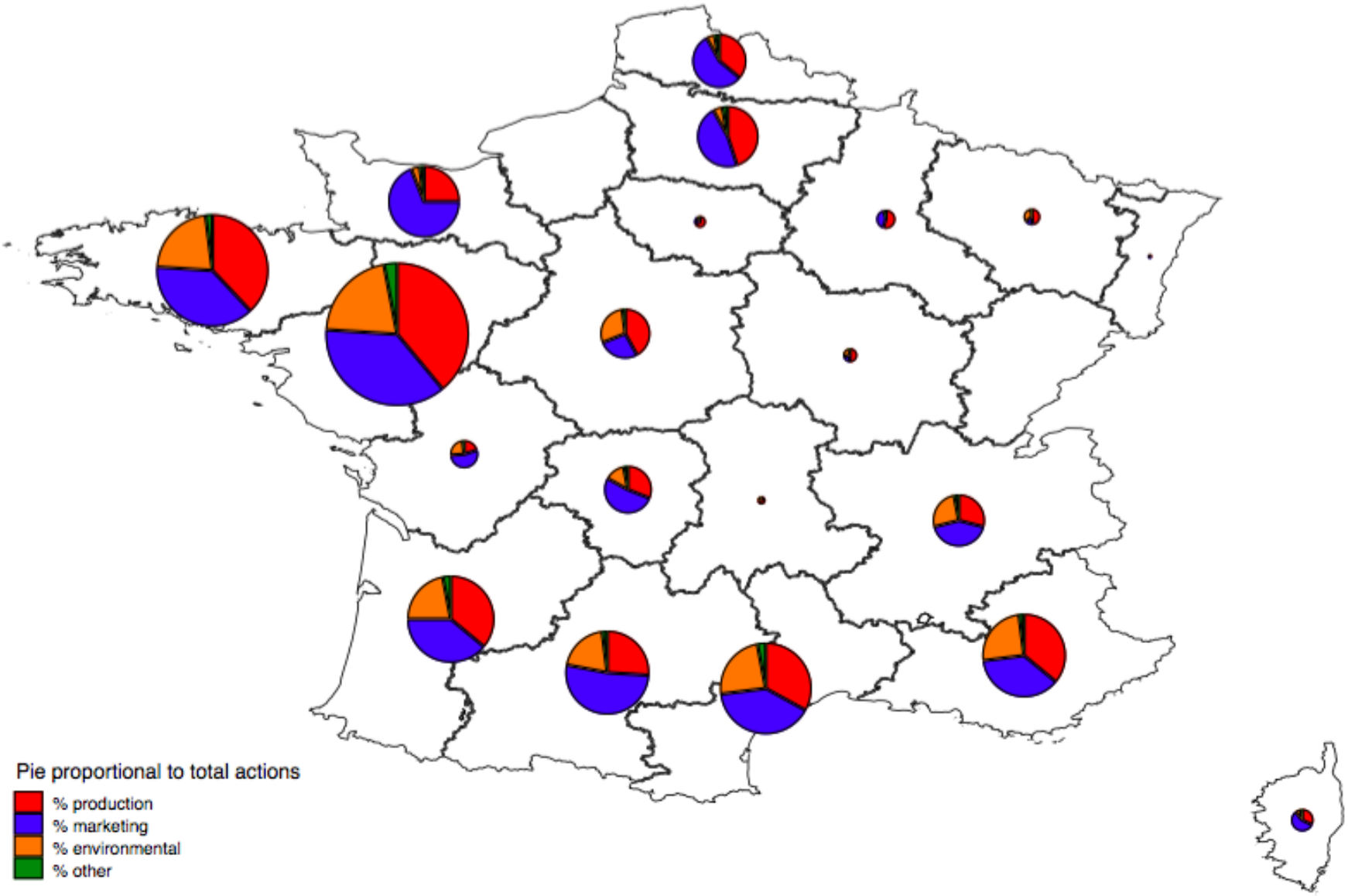
Distribution of VMP by destination - Italy



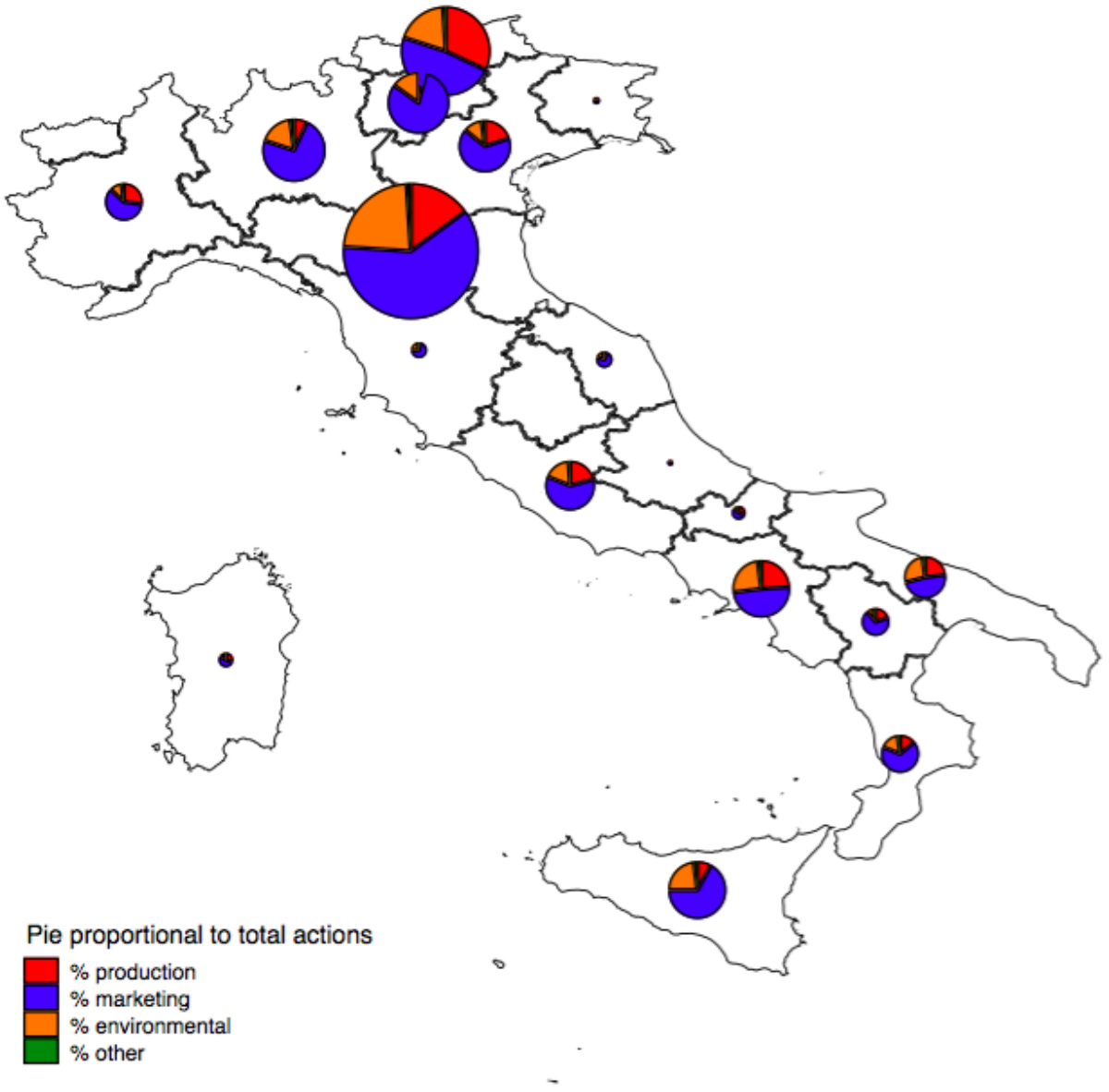
Distribution of VMP by destination - Spain



Distribution of Actions - France



Distribution of Actions - Italy



Distribution of Actions - Spain

SORRY - ES data not provided

Methodology - Finding BMs

Table: Variables and clusters for POs

Variable	**Cluster 1**	**Cluster 2**	**Cluster 3**	**Cluster 4**
	(Mean)	(Mean)	(Mean)	(Mean)
Number of members of PO	25	470	31	192
Value of Marketed Product (VMP, mio)	13	21	10	15
Specialization (% of first 2 crops)	80	84	87	80
% Product sold for fresh use	96	81	17	87
Obs. n.	3,576	299	386	597
Total acreage*	635	1,701	1,750	1,082
Avg. acreage per member*	25.4	3.6	56.5	5.6
Avg. VMP per member (000)*	520	44.7	322.6	78.1
Business model name	Small PO, big farms	Big PO, small farms	Processing PO	Medium PO

* NOT used for cluster analysis

Methodology - Finding homogenous regions

Table: Variables and clusters for regions

Variable	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Agriculture				
Avg. size, specialized F&V farms (ha)	22	17	74	14.5
Area specialization in F&V (%, sales)	0.04	0.02	0.02	0.045
Area specialization in F&V (%, ha)	0.21	0.12	0.18	0.18
Downstream sectors				
Avg. size retailing firms (no. employees)	2.6	2.7	3.2	2.83
Avg. size wholesale firms (no. employees)	3.13	2.7	4.3	4.2
Avg. size food manuf. firms (no. employees)	8.65	2.7	8.4	11.7
Socio-economic characteristics				
GDP per capita	.025	.024	.028	0.021
GDP per capita growth	-0.08	-0.35	1.35	-1.06
Unemployment rate (%)	12.8	11.9	9.2	21.7
Young unemployment rate (%)	34.1	35	22.9	44.8
Demographic index (Old/Young)	132	181	101	96
Obs. no. (no. NUTS2)	115	64	68	61
Regional clusters' ame	Medium	Old	Rich	Poor

Measuring POs performances

For the POs performance, we use the following:

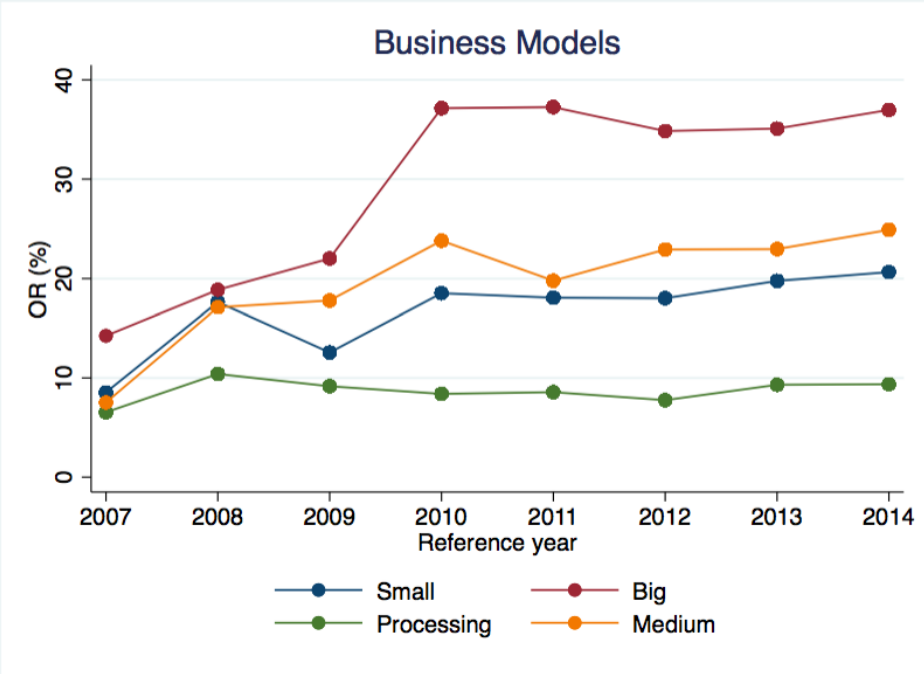
1. Organization (i.e., participation) rate (OR), defined in terms of:
   - i) Value of production: $\frac{\text{Total PO's VMP}}{\text{Total Area's VMP}}$
   - ii) Acreage: $\frac{\text{Total PO's acreage}}{\text{Total Area's acreage}}$
   - iii) Number of farms: $\frac{\text{Total POs' members}}{\text{Total Area's farms with F\&V}}$

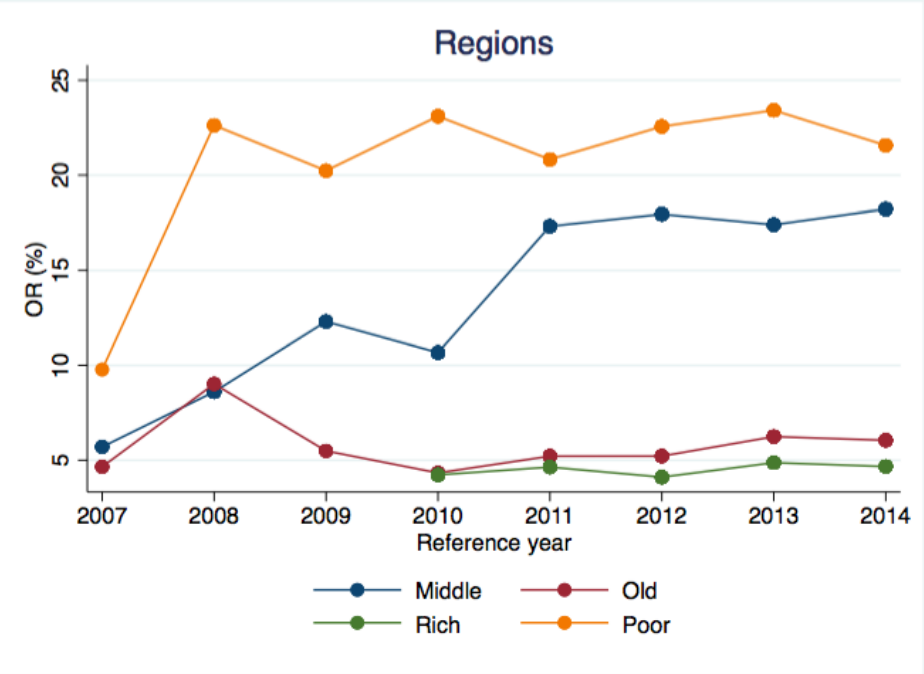
Now we **put all together**...

PRELIMINARY Results

Organization rate - Value Marketed Product

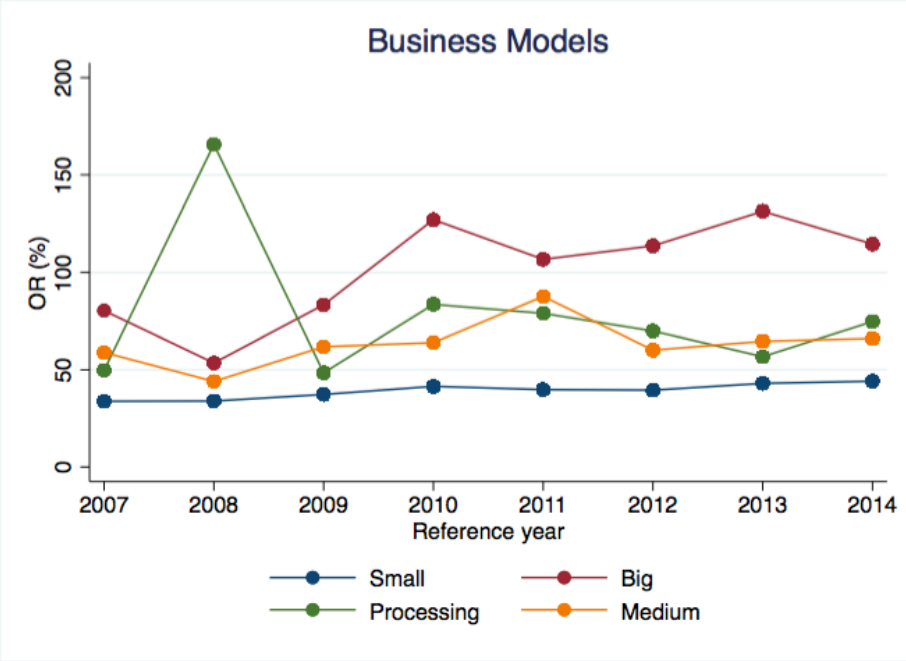
Total PO / Total Region (F&V)

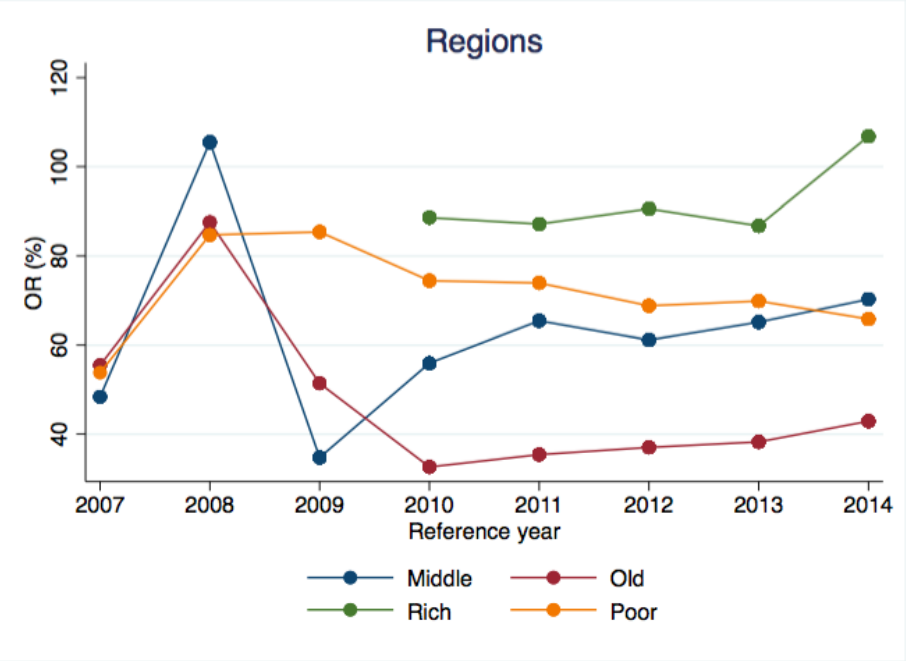




Organization rate - Acreage

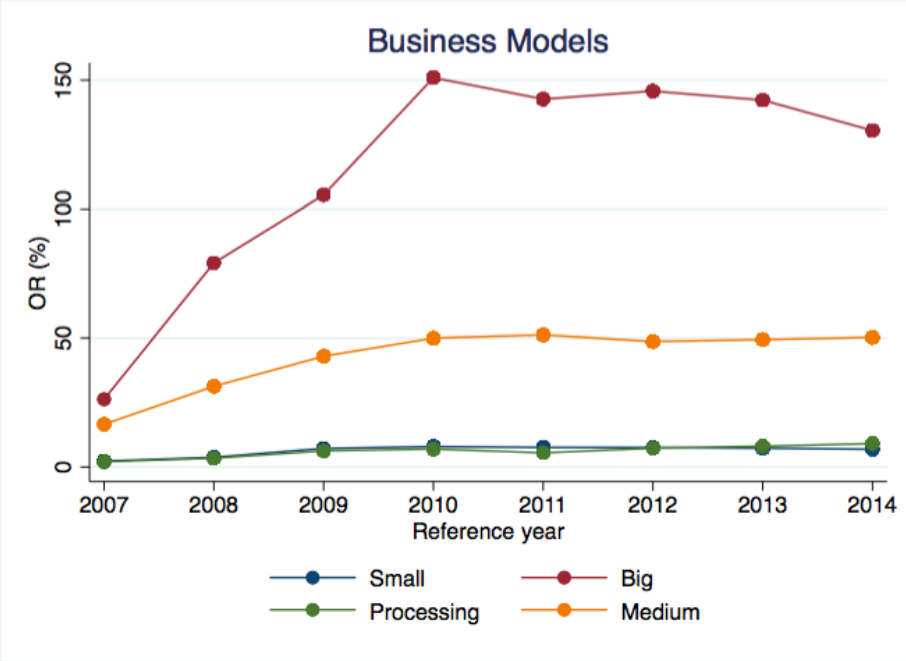
Total PO / Total Region (F&V)

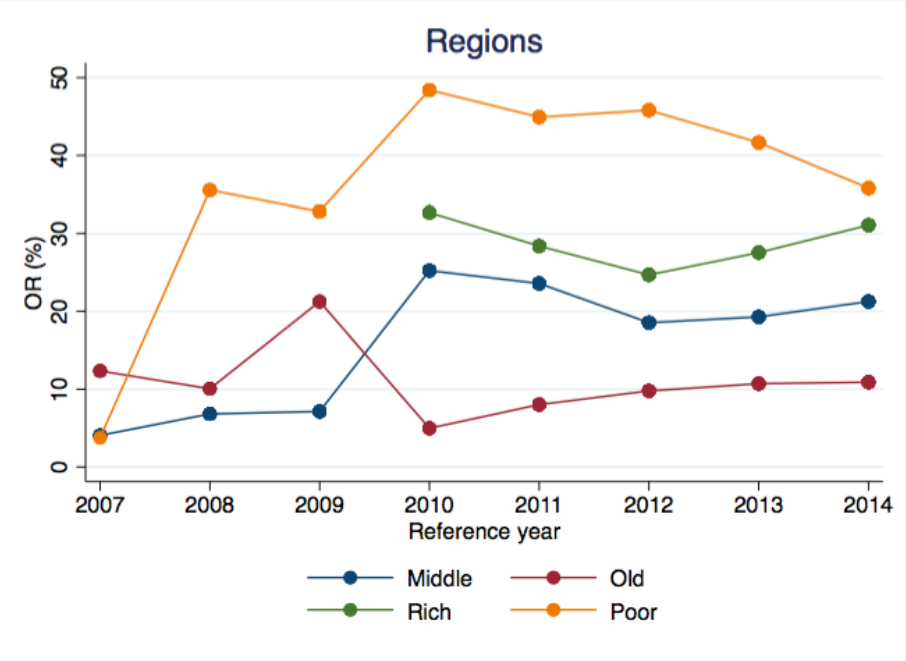




Organization rate - No. Farmers

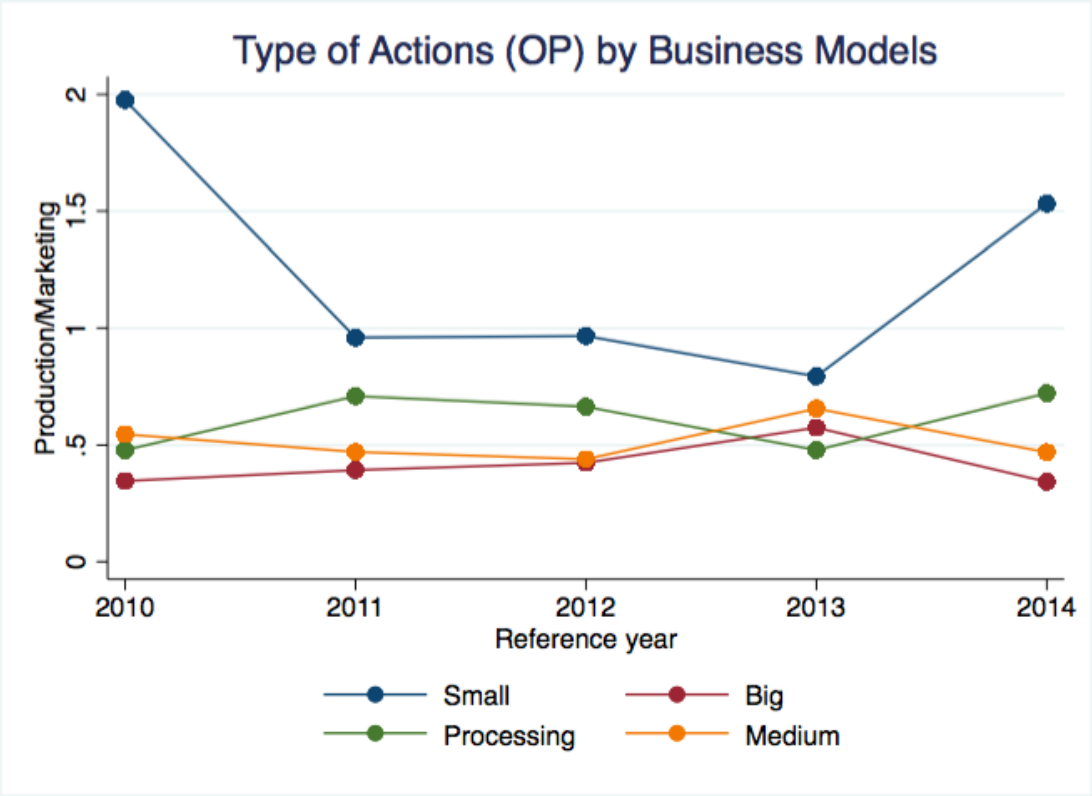
Total PO / Total Region (F&V)





Type of actions by BM

Production / Marketing Actions for (without ES data)



Concluding remarks, I

- Producer Oragnizations are (becoming) important players in the new EU CMO. After the F&V sector, now they are a transversal policy tool for other agricultural sectors as well.
- In the F&V sector, however, mixed success. To the best of our knowledge, the reasons for the limited success of POs still remain to be properly investigated.
- With a simple preliminary analysis we find that big POs (with many small farms as members) on average attract more farmers than other business models such as small, processing, or medium POs.
    - This result is quite robust across different measures of performance.

Concluding remarks, II

- Finding that different BMs lead consistently to differences in performaces provides support to the literature that considers the **importance of strategic choices and efficient management for the success of collective action**.
- $\Rightarrow$ Need to consider also what POs do and how they do it, not only where they operate.
- Overall, the reasons for the limited success of POs still remain to be properly investigated.
- In addition, there is limited evidence on the IMPACT of POs on different dimensions.
- This is the set of questions which we plan to investigate next.

Where to go next, I

1. First of all, what is the **optimal industrial configuration** of the F&V sector?
   - For istance, is it better to have many small POs or few bigger ones?
   - What should be the interplay between POs and APOs?
2. What is the **economic impact** of POs on participating farmers?
   - In terms of price increases,
   - in terms of technological innovation.
   - In terms of better access to international markets.
   - Overall, in terms of better profitability.
3. Moreover, what is the **enviromental impact** of operational programmes?
   - For instance, integrated pest management (IPM) needs technical assistance, which many POs offer to their members. Does this help reducing pesticides and/or fertilizers use?

Where to go next, II

- Is there any positive effect on the environment through lower pollution levels?

4. Last but not least, what is the **socio-economic impact** of POs in rural areas?
   - We have seen that in poor regions participation by farmers is higher.
   - Do POs have a role in rural development as well?
   - Are their operational programmes complements or substitutes of other structural funds measures?

- We will try to answer some of these questions (hopefully together with AREFLH).
- Thanks for your attention!