Clusters, Economic Performance: Irish Regions

Dr. Eleanor Doyle
School of Economics, UCC. ©

3rd International Cluster Conference, Limerick, Sep/Oct 2015.

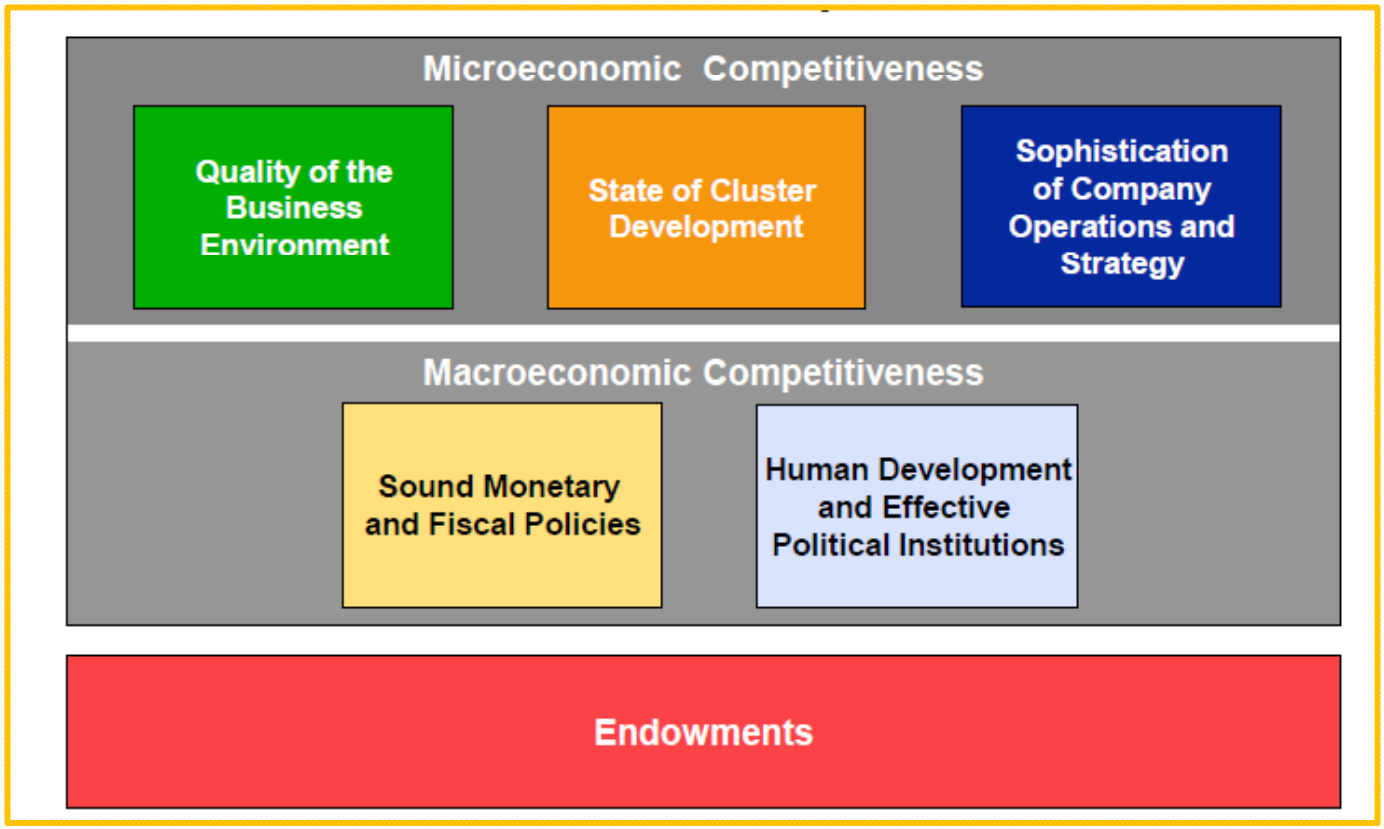
A TRADITION OF INDEPENDENT THINKING

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Themes

- Drivers of Prosperity – related to location
  - Role of/for clusters
  - Relationship between economic composition of a region and its productivity and growth?
- Benefits of cluster-based analysis
  - Productivity; innovative capacity; start-ups.
  - Evidence – outside Ireland
- Available Data and generating Irish data – Approach (and limitations)
- Some Findings and Implications

Cluster Context = Economic Development



- **Foundations** of **PROSPERITY**: resources, geography, population
- **Macro** context matters
- ***Productivity*** ***IS KEY – REGIONS, CLUSTERS & BUSINESSES***

Feature of Modern Regions

- **Cluster** – geographic concentration of linked industries "Geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types" (Porter, 2003)
- Implications for region (Porter, 1990)
  - Economic performance; Innovative Capacity; Competitiveness, start-ups … …
- Advance on diversity/specialization of industry arguments (MAR Vs e.g. Jacobs, 1969)
  - Nuanced focus of cluster – industry focus insufficient to consider sources of performance generated by varying types of interconnections (externalities across businesses & institutions within cluster)
  - Geo focus: regions exhibit convergence & agglomeration effects (localization and agglomeration)

Economic Composition

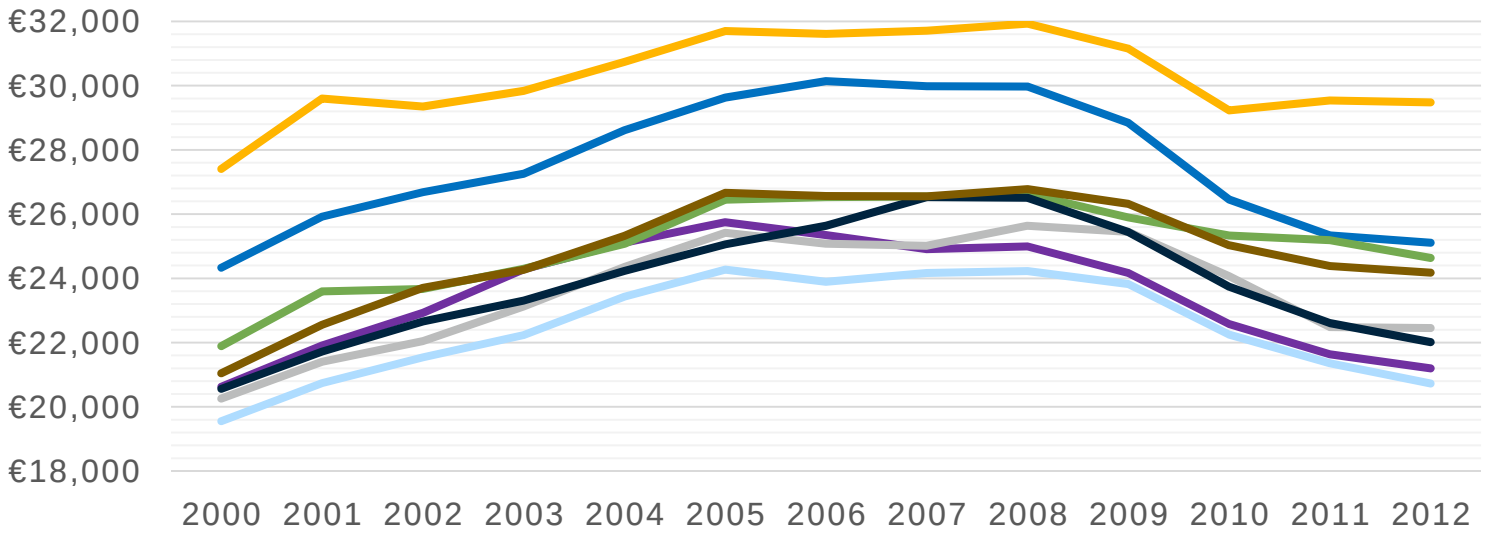
- **Structural** – Ownership: Irish and Foreign-owned Enterprise
  - Industry
  - Services
- **Technological** – high-tech Vs low-tech
- **Scale** – SME and Larger Business
- **Regional** – Geography: Distribution of economic activity
  - Dublin & Rest of country
  - Cities …… Rural
- Meaning … cluster: cross categorical concept
  - **Productivity** and performance: convergence effects, cluster effects
- NUTS 2 Regions
  - Border/Midlands/West: Areas 1, 2 & 3
  - South and East: 4, 5, 6,7, 8.

Prosperity - Irish Regions

Productivity - Irish Regions

Household Income

Region	2000	2012	2000 Rank	2012 Rank	CAGR
Dublin	27,408	29,479	1	1	0.6 (4)
Mid-East	24,330	25,109	2	2	0.3 (7)
Mid-West	21,889	24,638	3	3	1.0 (2)
South-West	21,042	24,180	4	4	1.2 (1)
**West	20,254	22,455	6	5	0.9 (3)
South-East	20,559	22,013	7	6	0.6 (5)
**Midland	20,623	21,195	5	7	0.2 (8)
**Border	19,553	20,725	8	8	0.5 (6)
National	21,957	23,724			0.7

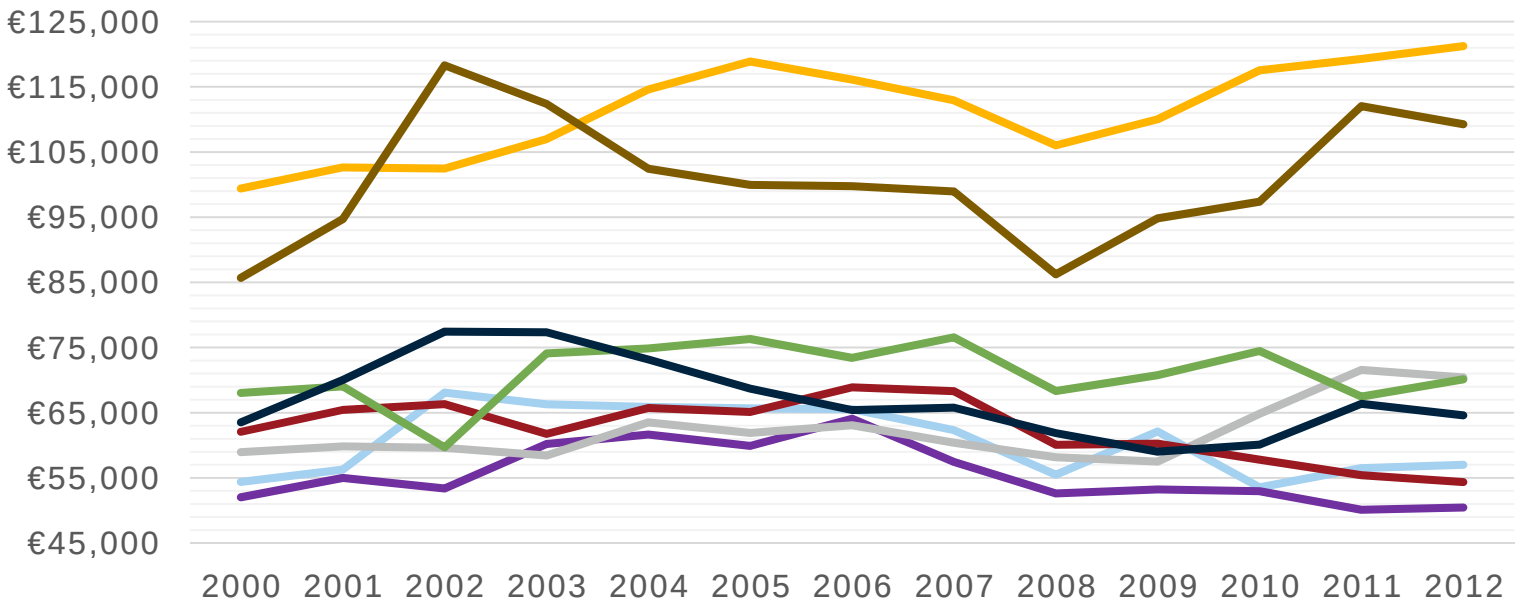


Source: Central Statistics Office (2015): County Incomes and Regional Accounts.

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Productivity per worker

Region	2000	2012	2008 Rank	2012 Rank	CAGR
Dublin	99,380	121,248	1	1	1.7 (2)
South-West	85,683	109,251	2	2	2.0 (1)
**West	58,963	70,423	6	3	1.5 (3)
Mid-West	68,027	70,129	3	4	0.3 (5)
South-East	63,516	64,608	4	5	0.1 (6)
**Border	54,394	57,011	7	6	0.4 (4)
Mid-East	62,062	54,360	5	7	-1.1 (8)
**Midland	52,029	50,452	8	8	-0.3 (7)
National	68,007	74,685			0.8



Source: Central Statistics Office (2015): GVA.

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Cluster Research & Measurement

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Cluster Research: US

- 15 years data: 1990 – 2005, 177 US Regions; Region, Industry & Cluster
- Employment *growth rates*
  - Declining relative to initial region-industry level
  - Rising relative to **region cluster strength**
  - Rising with cluster strength **across high-tech, low tech, manuf. & services**
- Positive relation between employment growth in strong clusters and innovation (patenting)
- Growth of new industries related to strong regional clusters and strong clusters in neighbouring regions

CLUSTER:
Successful
Performance in Trade

IMPACTS:
Employment
Patenting
New activity

(Delgado, Porter and Stern, 2014; Ketels and Protsiv, 2014)

Economic Composition: Traded & Local Clusters

Local Cluster

- Serve local market primarily
- Not exposed to cross-regional competition for employment

Traded Cluster

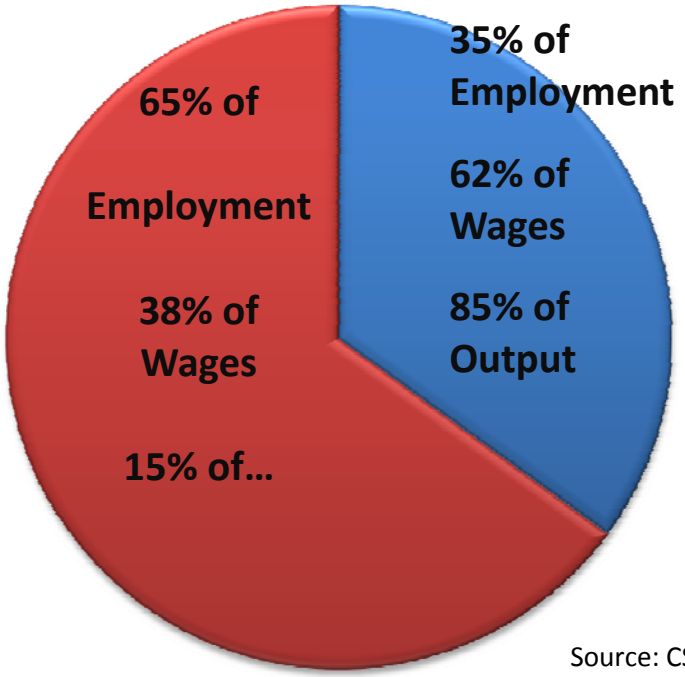
- Serve markets in other regions/countries
- Free to choose location
- Exposed to competition from other regions/nations

'Cluster' determined by relatedness in terms of

i. Input-output
ii. Use of occupations
iii. Co-location pattern of employment and plants/establishments

51 separate clusters
'Cluster' if regional specialisation relative to nation

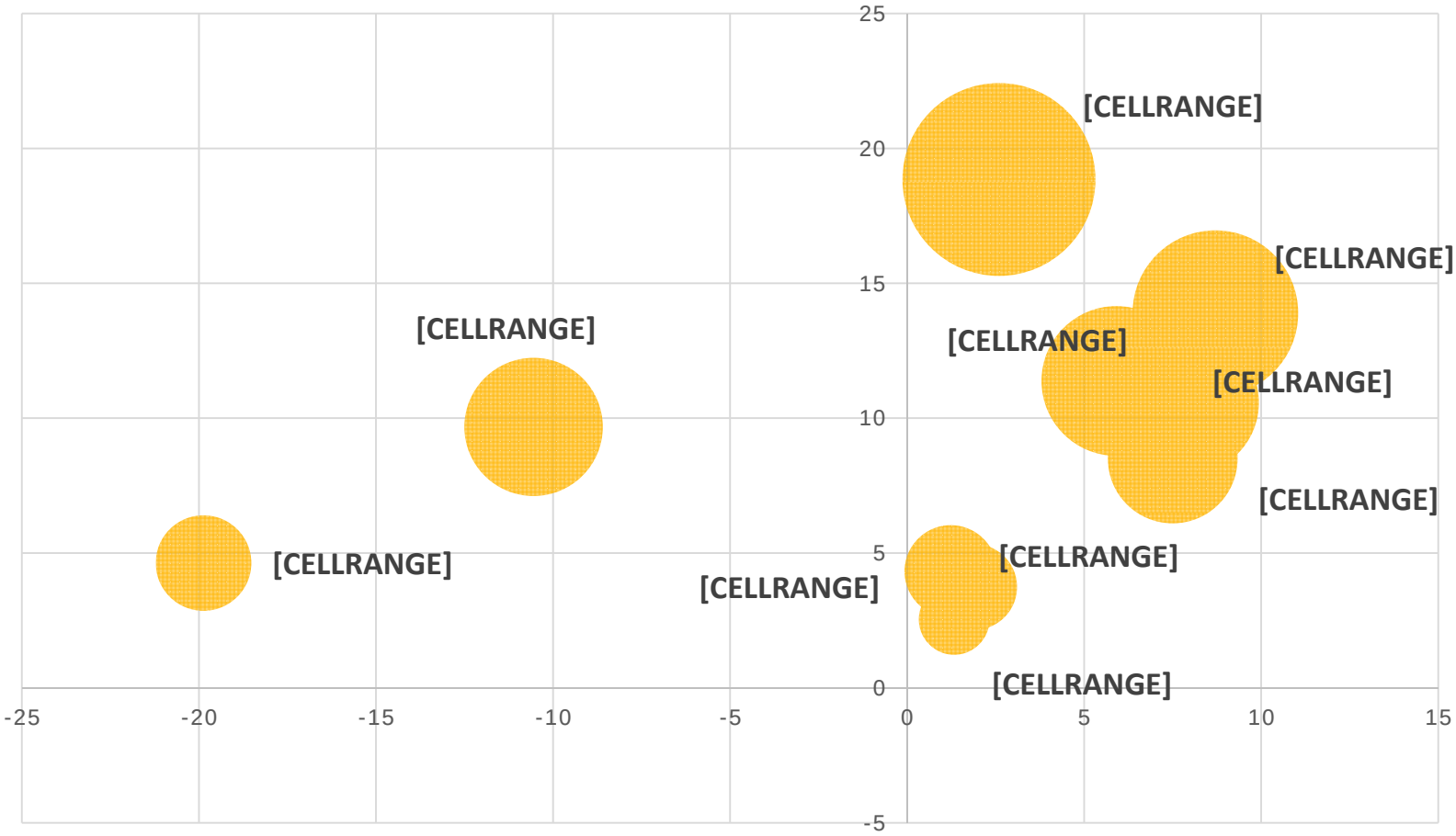
Ireland, 2012



Source: CSO (2015)

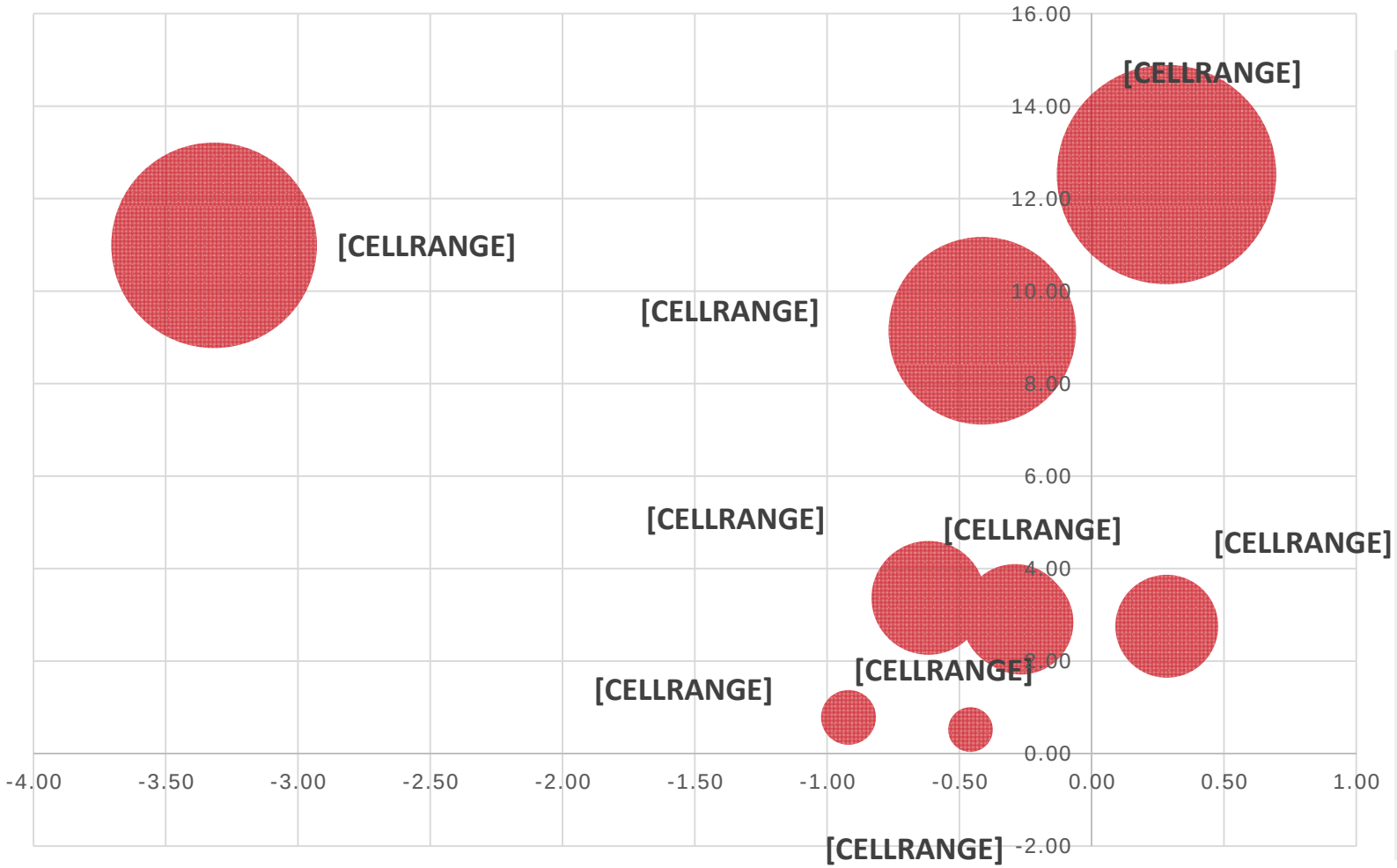
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Top 10 Irish Clusters: % Share Irish Exports
(2008- 12)



X: Change in Share of World Exports
Y: Share of World exports
Source: International Cluster Comparison Project (2015)

Top 10 Irish Clusters: International (2008 - 12)



X: Change in Share of World Exports
Y: Share of World exports
Source: International Cluster Comparison Project (2015)

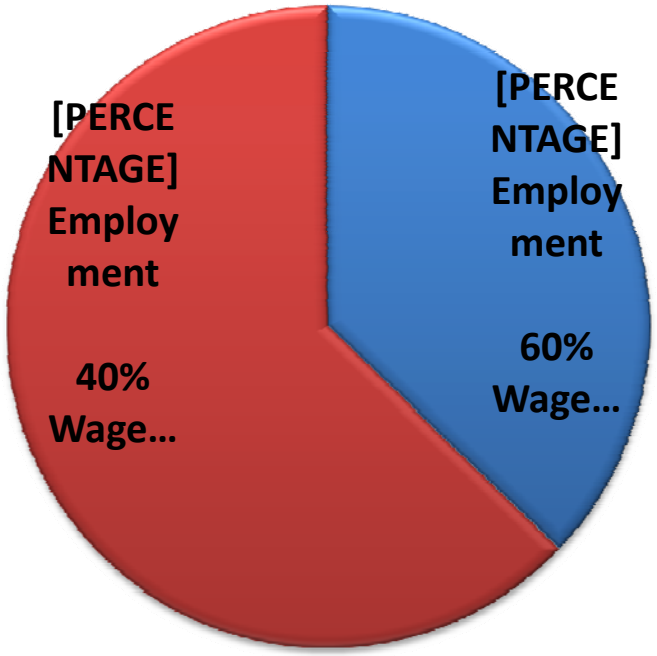
UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Challenge: Clusterizing Irish Data *for Regions*

- Empirical challenges: appropriate, comparable data
- Data on Industry Vs Services: Census & Survey
  - Census of Industrial Production: Annual Services Inquiry
  - Business Demography micro level employment for all NACE
  - Data confidentiality and strict disclosure standards (dominance of 3 or less firms) – suppression of data
- Lack of data
  - Financial Services; Insurance Services; Performing Arts; and Forestry.
- Limited data – aspects of agriculture:
  - Support activities (e.g. crop production; animal production)
- Data is available for 36 of 51 possible clusters (ASI and CIP)
  - Business demography provides employment for all 51 clusters.

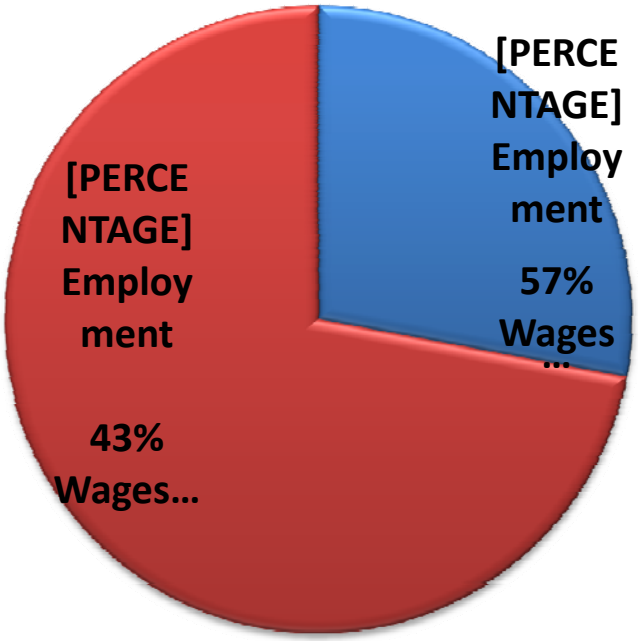
Irish Local & Traded Clusters (2012 NUTS2)

South & East



Source: CSO (2015)

Border, Midlands & West



Source: CSO (2015)

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Economic Performance: Traded and Local Clusters

	2012/08	Growth %	2012/08	Growth %
TURNOVER/worker				
National	**114.2**	**3.4**	**82.2**	**-4.8**
SE Clusters	110.9	2.6	83.9	-4.3
BMW Clusters	117.7	4.2	85.3	-3.9
EXPORTS/worker				
National	**129.7**	**6.7**	**55.5**	**-13.7**
SE Clusters	124.4	5.6	71.4	-8.1
BMW Clusters	122.8	5.3	21.4	-32
GVA/worker				
National	**112.6**	**3.0**	**40.3**	**-20.3**
SE Clusters	108.4	2.0	71.4	-8.1
BMW Clusters	354.3	37	69.3	-8.7
WAGES/worker				
National	**104.6**	**1.1**	**77.9**	**-6.1**
SE Clusters	104.5	1.1	76.6	-6.4
BMW Clusters	107.4	1.8	87.1	-3.4

(constant 2014€: Base 2008)

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Employment Mix & Wages

- Difference between national wage and regional wage depend on
  - Mix of clusters in the region - distribution of employment across clusters: Cluster Mix Effect
  - Wage levels of clusters in the region – relative to national average: Wage Level Effect
  - If level > mix effects: mix of clusters is a less important influence on wages than higher wages across range of clusters
  - If mix > level effects: growing share of traded clusters is relevant policy.
- Preliminary work ... Too early to report

Implications

- Clustering - key feature of regional economies –
  - enhancing understanding of what matters for performance: convergence effects, cluster effects; sources of prosperity
- Need better data on clustering at regional level, in conjunction with other data
- Ireland well BEHIND THE CURVE (left behind?) on
  - **Cluster Policy** – *evidence/data* -based policy
  - Implementation
- Important pockets of activity in cluster space – cluster organizations;
  - Most effective with focus on enhancing *quality* of offering(s) across the cluster, or sub-cluster
  - And when business-driven with input from appropriate agencies of local (national) government

Implications

Key Question - Why?

- Successful cluster organizations challenging
  - Setting objectives & monitoring performance
  - Organising clusters initiatives process over time
  - Integrating the cluster initiative in a broader microeconomic policy agenda.
- Insufficient focus on Microeconomic Competitiveness ....

? US-based Cluster Categories

- European approach based on US Cluster Mapping (see Ketels and Protsiv,2014)
  - US based on granular level of data – better availability than in Europe – precision in the US approach
  - US fully integrated economy – patterns of econ geography strongly driven by productivity effect of local externalities
  - US based approach
  - Cannot say if firms within a particular cluster and/or region share linkages.
  - Can identify the level of export, employment intensity etc. relative to other clusters.