Knowledge-Intensive Business Services: which role for the competitiveness of the economy

Regional Knowledge Dynamics: An overview and Assessment.

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Tuesday May 12 2009
Palazzo delle Stelline - Milan

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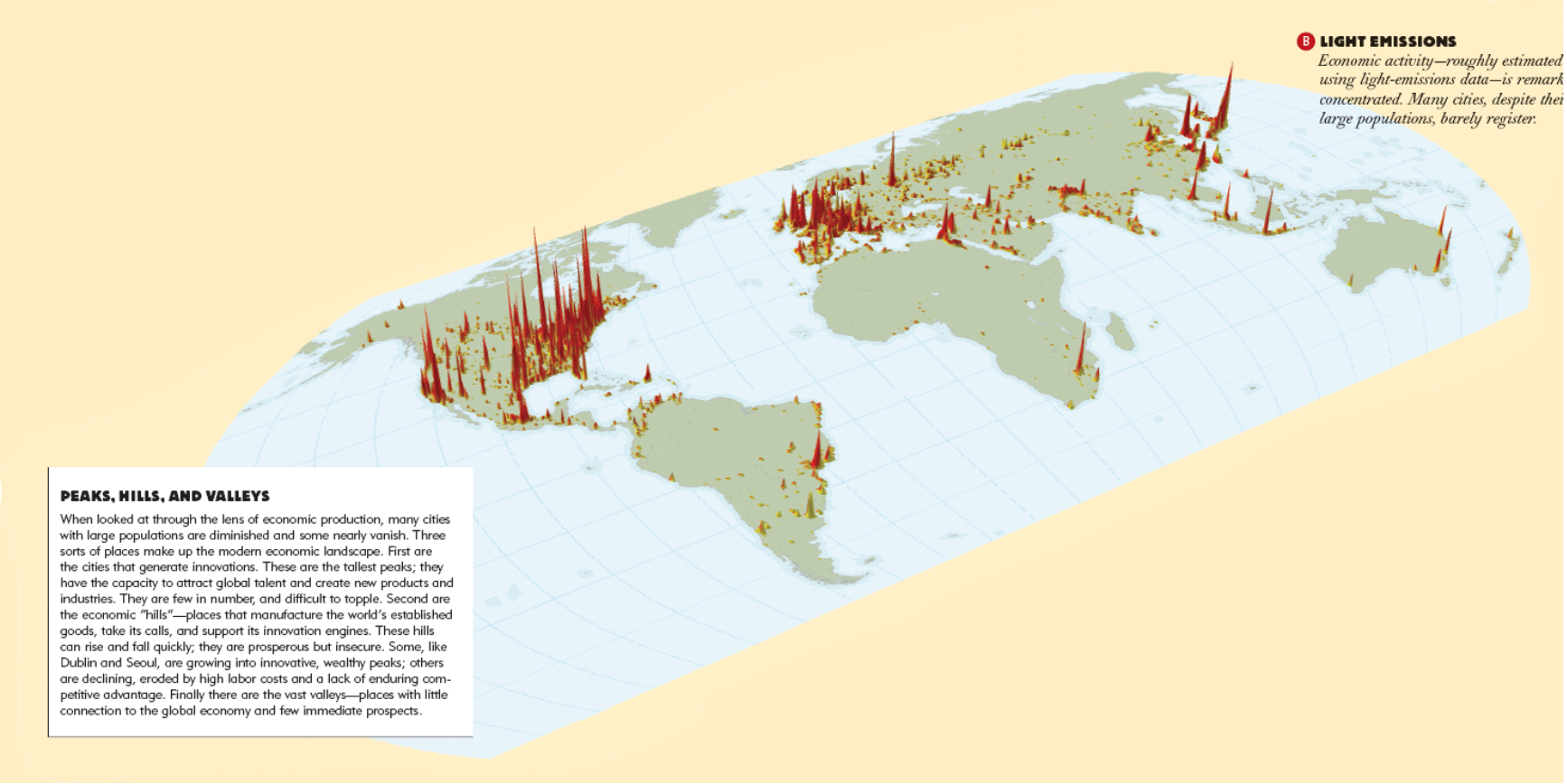
The importance of Regional Dynamics



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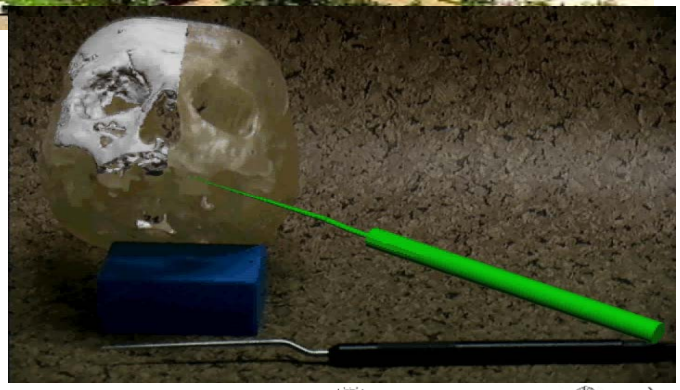
Stimulating entrepreneurship
in Leuven … more than 100 spin-offs …



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Providing seed capital … through a partnership with the financial sector…

Recently, K.U.Leuven has taken several additional initiatives to live up to its responsibilities. These include an inter-faculty course 'Introduction to Entrepreneurship', and the formation of the Gemma Frisius Fund (together with the 'Generale Bank' Group and the 'Almanij-KBC' Group) to provide venture capital. The first few years of activity have clearly demonstrated that these initiatives are really serving a need.

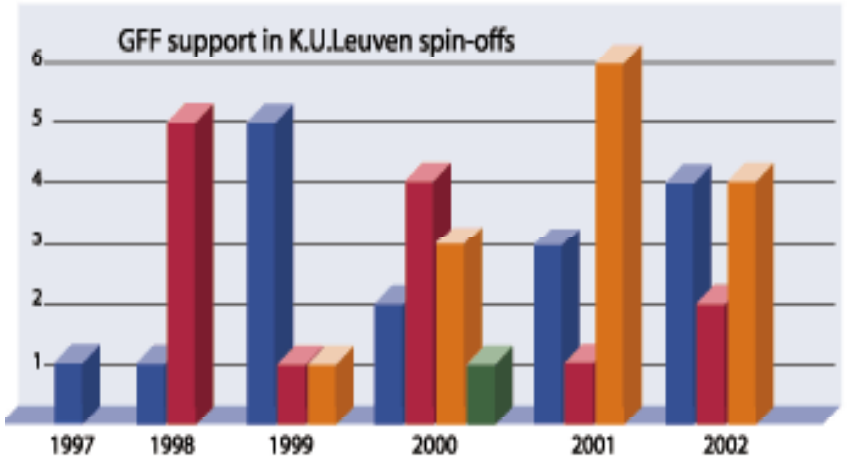
Research and education will always be the prime objectives of any university, rather than the creation of spin-offs. As a matter of fact, spin-offs can only thrive if research quality is given due importance. Without attaining international research quality standards, the results cannot be exploited at all. If, however, a high level of quality is reached, starting spin-offs is self-evident.

We hope this brochure will convince its readers of the diversity, originality and professional approach of K.U.Leuven's spin-offs, and that it even functions as a source of inspiration for future initiatives. As for the companies themselves, we wish them a safe journey on stormy industrial seas.

Prof. K. Debackere
Managing Director
K.U.Leuven R &D

Prof. R. De Bondt
Chairman
K.U.Leuven R&D

Prof. A. Oosterlinck
Rector
K.U.Leuven



68 companies end 2005

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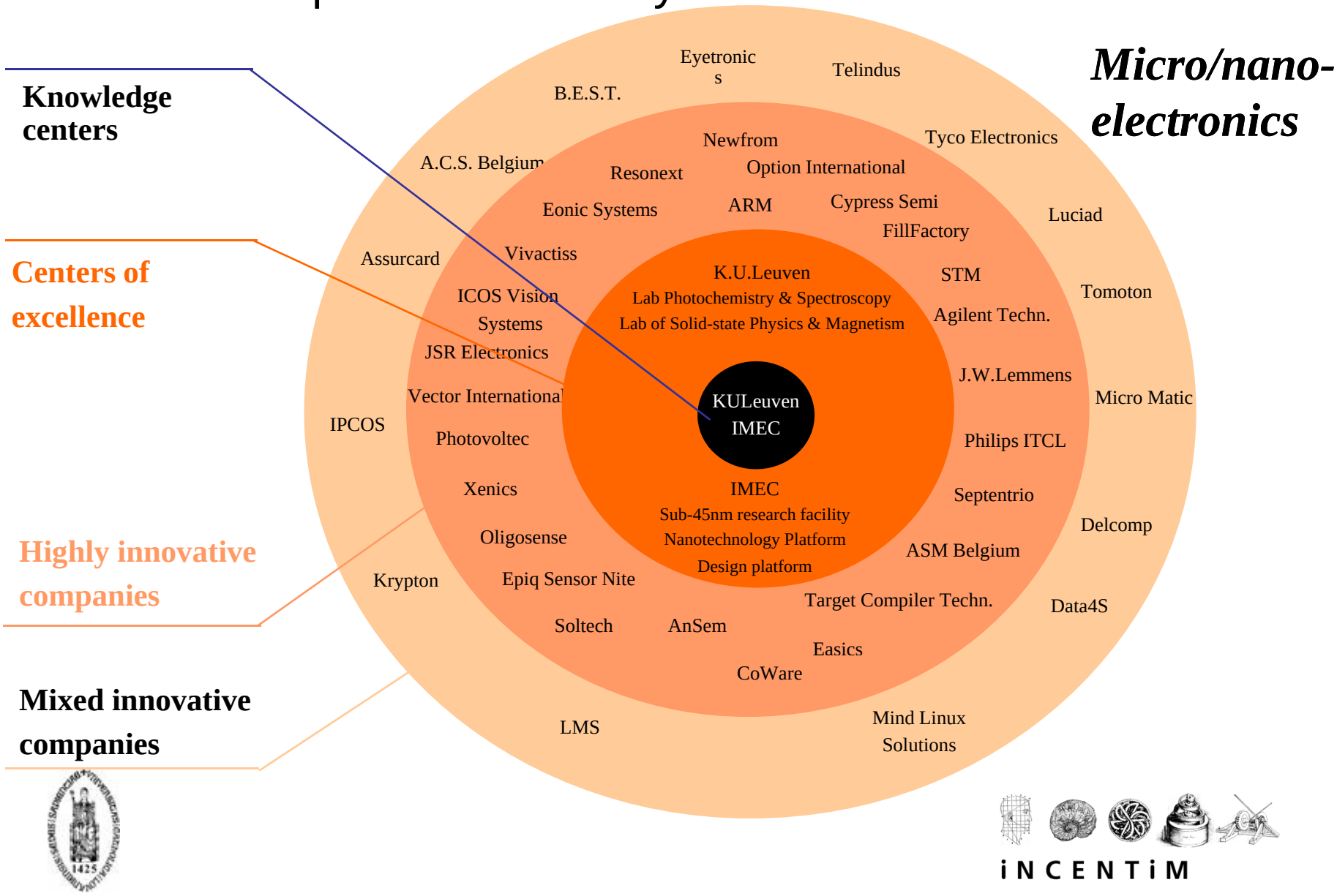
Leading to highly innovative regional clusters of entrepreneurial activity …



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Networking opportunities in Leuven

- **Horizontal Network: Leuven.Inc**
  - **Network organisation stimulating contacts between university, IMEC, high-tech start-ups, innovation actors, support activities such as consulting agencies and venture capitalists, and established companies in the Leuven area.**
- **Vertical Networks: technology clusters**
  - **DSP Valley**
    - **Focusing on the design of hardware and software technology for digital signal processing systems.**
  - **L-SEC (Leuven Security Excellence Consortium)**
    - **International, non-profit network organisation dedicated to promote the use and advance of e-security.**

LEUVEN.INC
LEUVEN INNOVATION NETWORKING CIRCLE

DSP VALLEY

L-SEC
LEUVEN SECURITY EXCELLENCE CONSORTIUM

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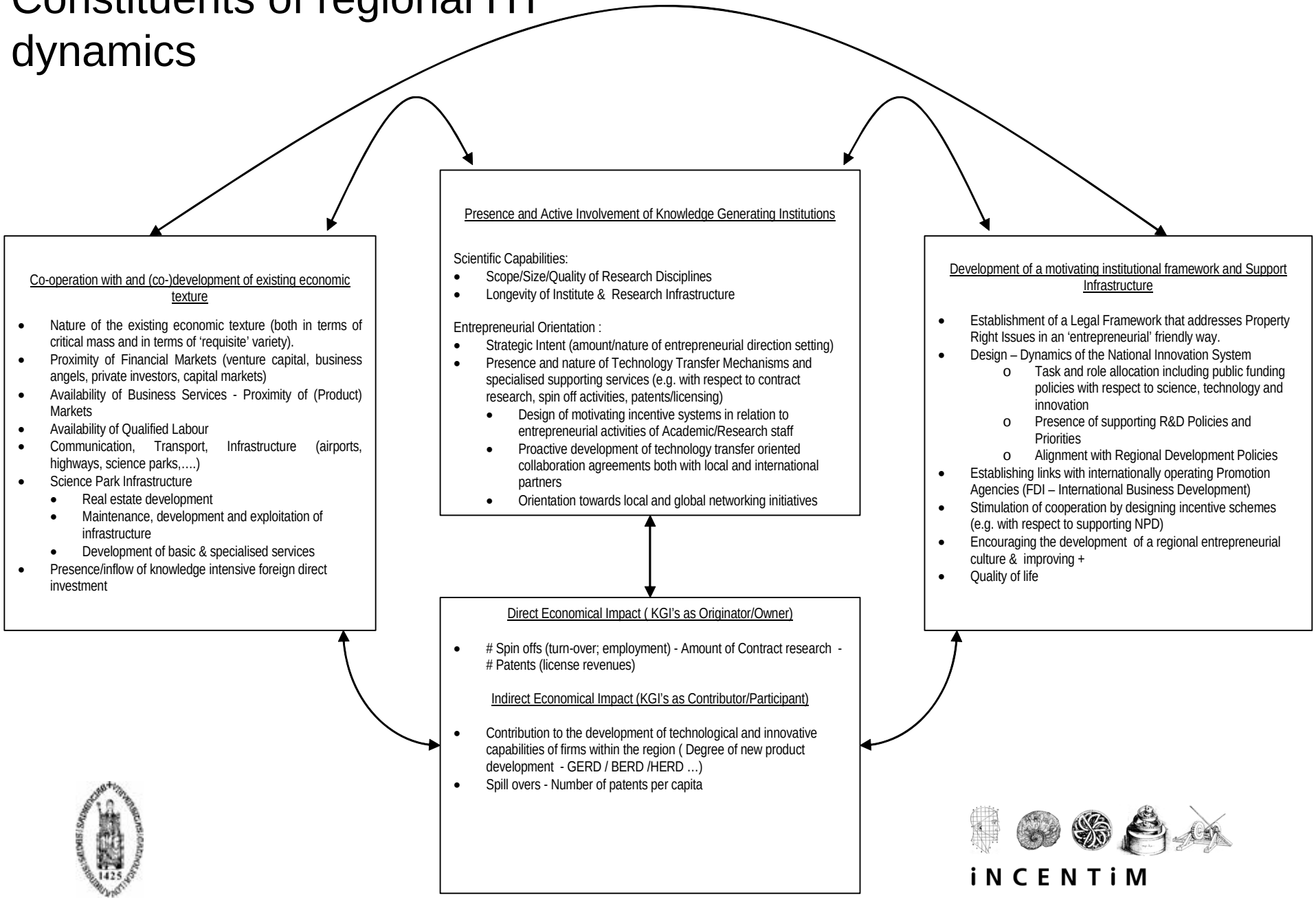
Constituents of regional HT dynamics



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Developing technology in the vicinity of science: do firms really benefit?
An empirical assessment on the level of Italian provinces

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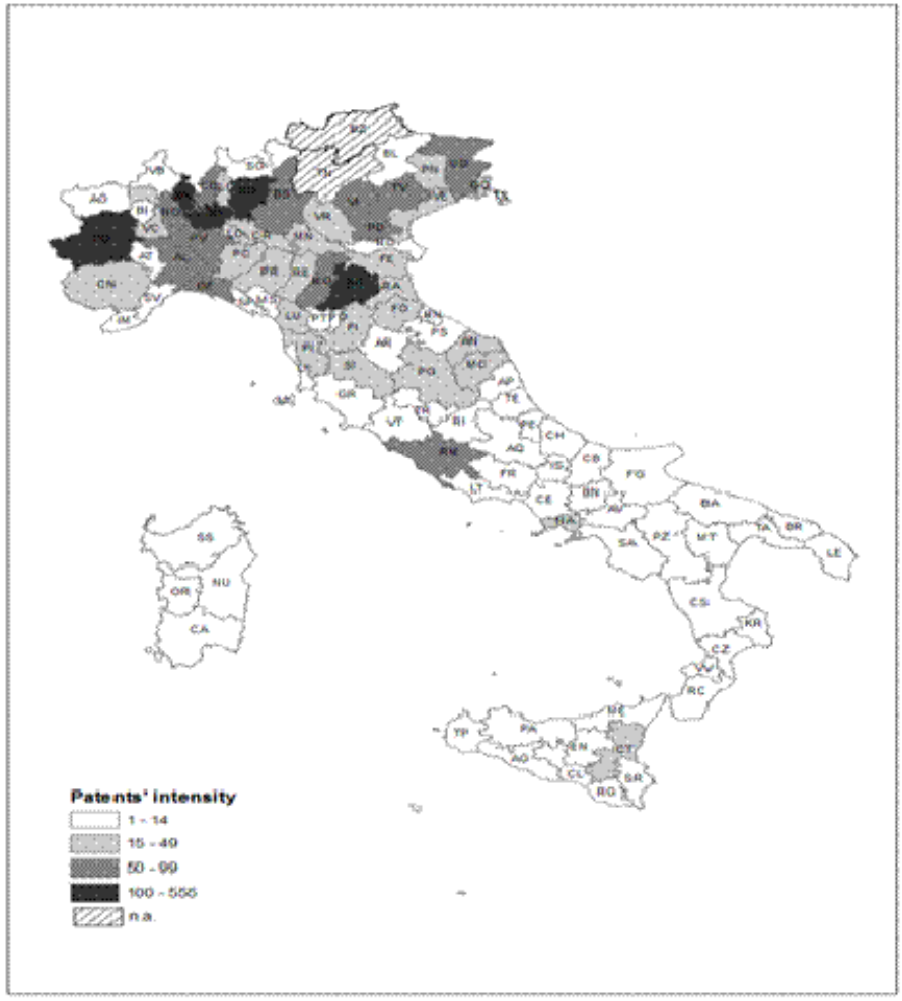
Figure 1: Geographic Distribution of Inventive activity in Italy



Total Regional Effects (Cross Sectional Data)

	Model 1 (RE)	Model 2 (RE)	Model 2 (FE)
Firm R&D	0.0019**	0.0018**	0.0015**
	(0.0004)	(0.0005)	(0.0005)
University Presence	0.7151**		
	(0.2031)		
Scientific Eminence		0.0006**	0.0005**
		(0.0001)	(0.0001)
Lagged Firm R&D	0.0015**	0.0012**	0.0013**
	(0.0002)	(0.0003)	(0.0003)
Lagged University Presence	0.0564		
	(0.0952)		
Lagged Scientific Eminence		0.0002**	0.0003**
		(0.0001)	(0.0001)
Constant	1.8545**	2.0699**	1.9920**
	(0.2836)	(0.2477)	(0.2644)
N	602	286	286
ll	-1.94e+03	-1.02e+03	-724.5233
Wald chi2(4)	194.13	170.65	115.85

Total Regional Effects (Panel Data)

	Model 1 (RE)	Model 2 (RE)	Model 2 (FE)
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Separate Regressions per Technology Field (Cross Sectional Data)

Nr	Technology Class	Firm R&D	University Presence	Lagged Firm R&D	Lagged University Presence
1	Electrical Machinery	0.0041**	0.5523**	0.0010**	-0.0159
2	Audio-Visual Technology	0.0029**	0.4927	0.0007*	0.2624**
3	Telecommunications	0.0037**	0.5289**	0.0009**	0.1126*
4	Information Technology	0.0027**	0.9797**	0.0012**	0.1199
5	Semiconductors	0.0038**	0.9805**	0.0007	-0.0094
6	Optics	0.0040**	0.0635	0.0011**	-0.0567
7	Analysis, Measurement and Control Tech.	0.0036**	0.7933**	0.0003	0.1102
8	Medical Technology	0.0016	0.9231	0.0014	0.0257
9	Nuclear Engineering	0.0031**	0.6489**	0.0002	0.0201
10	Organic Fine Chemistry	0.0032**	0.8638**	0.0012**	0.2715**
11	Macromolecular Chemistry, Polymers	0.0026**	0.8126**	0.0011**	0.0853
12	Pharmaceuticals, Cosmetics	0.0038**	1.1983**	0.0007*	0.2394**
13	Biotechnology	0.0027**	0.9187**	0.0000	0.3528**
14	Agriculture, Food Chemistry	0.0030**	0.2676	0.0003	0.0432
15	Chemical & Petrol Industry, Basic Materials	0.0031**	0.5323*	0.0007*	0.1588
16	Chemical Engineering	0.0028**	0.6892**	0.0007*	0.1714*
17	Surface Technology, Coating	0.0029**	0.1174	0.0004	0.1312
18	Materials, Metallurgy	0.0037**	0.4153	0.0002	0.0907
19	Materials Processing, Textiles, Paper	0.0043**	0.2045	0.0010**	0.0683
20	Handling, Printing	0.0050*	0.7772**	0.0005	0.1317
21	Agricultural and Food Processing Machinery	0.0020	0.4441	0.0005	-0.1136
22	Environmental Technology	0.0030**	0.6486*	0.0002	0.0424
23	Machine Tools	0.0041**	0.4462	0.0002	-0.0600
24	Engines, Pumps and Turbines	0.0038**	0.5961*	0.0002	-0.0158
25	Thermal Processes and Apparatus	0.0033**	0.5269	0.0003	0.0275
26	Mechanical Elements	0.0044**	0.3605	0.0008*	-0.0224
27	Transport	0.0053**	0.3812	0.0008*	-0.1347
28	Space Technology and Weapons	0.0032**	0.2737	-0.0007	0.1744
29	Consumer Goods and Equipment	0.0047**	0.1101	0.0001	0.1409
30	Civil Engineering, Building and Mining	0.0038**	0.1818	0.0003	0.0516

Exploring the field specific nature of spillover effects: industrial patents by field/region acting as dependent variable.

	Model 1
Firm R&D	0.0038**
	(0.0002)
University Presence	0.3400**
	(0.0837)
Lagged Firm R&D	0.0006**
	(0.0001)
Lagged University Presence	-0.0134
	(0.0364)
Science Intensity of Field	-0.6821**
	(0.0997)
University Presence * Science Intensity of Field	0.2391**
	(0.0769)
Lagged University Presence * Science Intensity of Field	0.0945**
	(0.0313)
Constant	-0.1230
	(0.1072)
N	3030
ll	-4.39e+03
LR chi2(7)	1327.44

Dinamiche della conoscenza regionale:

un quadro d'insieme e una loro valutazione

Milan, 12 May 2009

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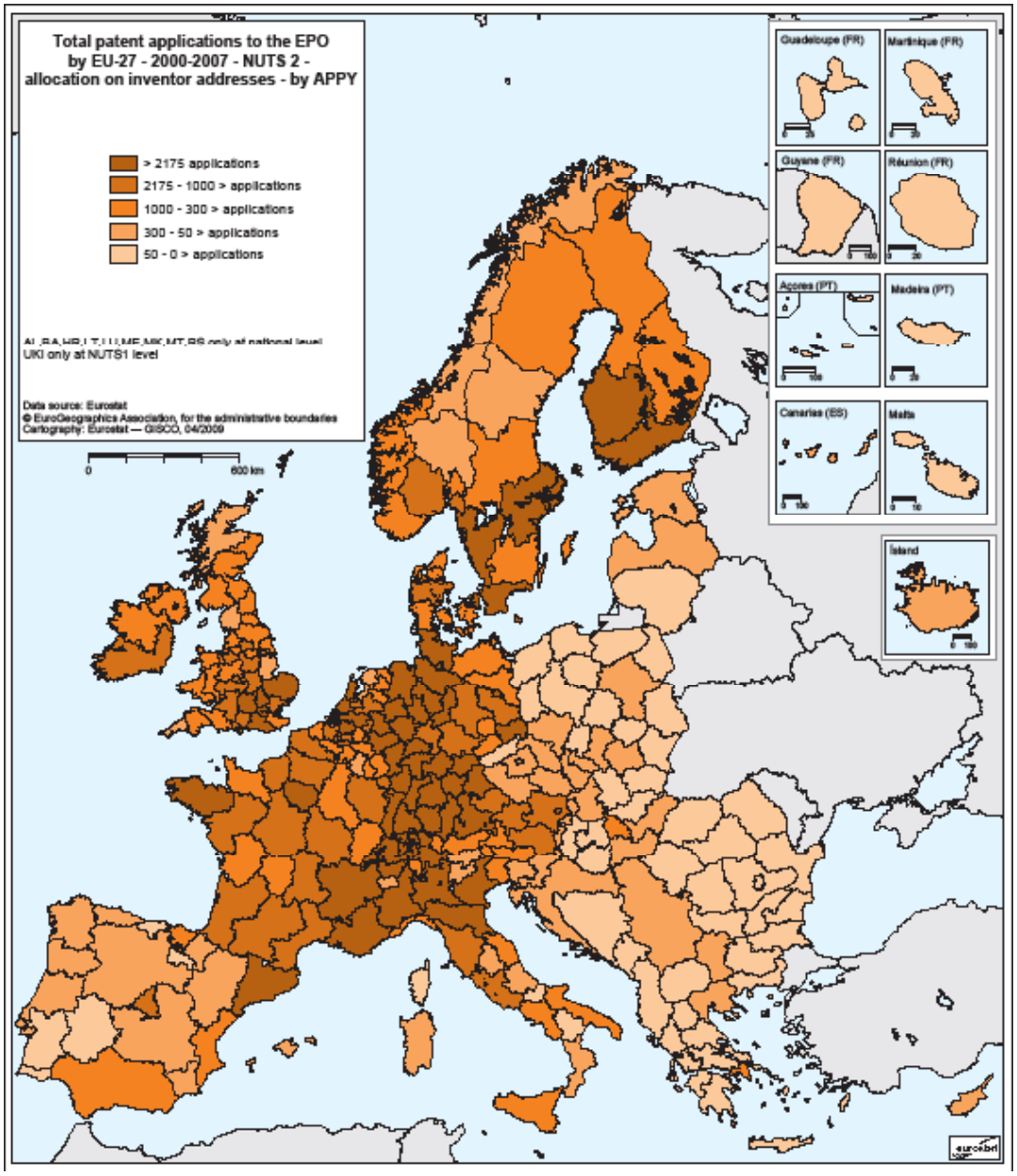
Total patent applications to the EPO
by EU-27 - 2000-2007 - NUTS 2 -
allocation on inventor addresses - by APPY
> 2175 applications
2175 - 1000 > applications
1000 - 300 > applications
300 - 50 > applications
50 - 0 > applications
UKI only at NUTS1 level
Data source: Eurostat
© EuroGeographics Association, for the administrative boundaries
Cartography: Eurostat — GISCO, 04/2009
0
600 km
Guadeloupe (FR)
Martinique (FR)
Guyane (FR)
Réunion (FR)
Açores (PT)
Madeira (PT)
Canarias (ES)
Malta
Island

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Indicators

Economical Performance :

- GDP per capita at PPP (GDPpp_PPP)

Economical Texture:

- Employment in:
  - Education (M)
  - Knowledge-Intensive Financial Services: NACE Rev. 1.1 codes 65, 66, 67 (SE_KIS_FS)
  - Knowledge-Intensive High-Tech Services: NACE Rev. 1.1 codes 64, 72, 73 (SE_KIS_HT)
  - High technology manufacturing sector (MA_HIGH_TEC)

Technology indicators:

- Patents per population (Patpp)

EU-15, CH, NO, Nuts2 regions, n= 225 (not for all regions/years, data are available)

GDP/Capita (PPP)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8,976E10	145	6,190E8	135,893	,000
Intercept	1,270E9	1	1,270E9	278,783	,000
Financial Services (+)	3,491E7	1	3,491E7	7,665	,006
High Tech Services (+)	1,820E8	1	1,820E8	39,954	,000
Manufacturing (HT) (-)	8,969E7	1	8,969E7	19,691	,000
Education (workforce)	7855311,833	1	7855311,833	1,725	,189
Patents per inhabitant (+)	2,349E8	1	2,349E8	51,564	,000
Time (+)	5,497E7	1	5,497E7	12,067	,001
Region	6,983E10	138	5,060E8	111,081	,000
Error	4,464E9	980	4555075,451		
Total	8,451E11	1126			
Corrected Total	9,422E10	1125			

Stimulating R&D collaboration: do policies matter? An explorative investigation on the level of national innovation systems (EU-15).

Catherine Lecocq

Bart Van Looy

Do Policies matter?

	Policies targeting collaboration…
U-U policies	between universities
I-I policies	between companies (industry)
RC-RC policies	between public research centers
U-RC policies	between universities and public research centers
U-I policies	between universities and industry
RC-I policies	between public research centers and industry
U-RC-I policies	between universities and public research centers and industry

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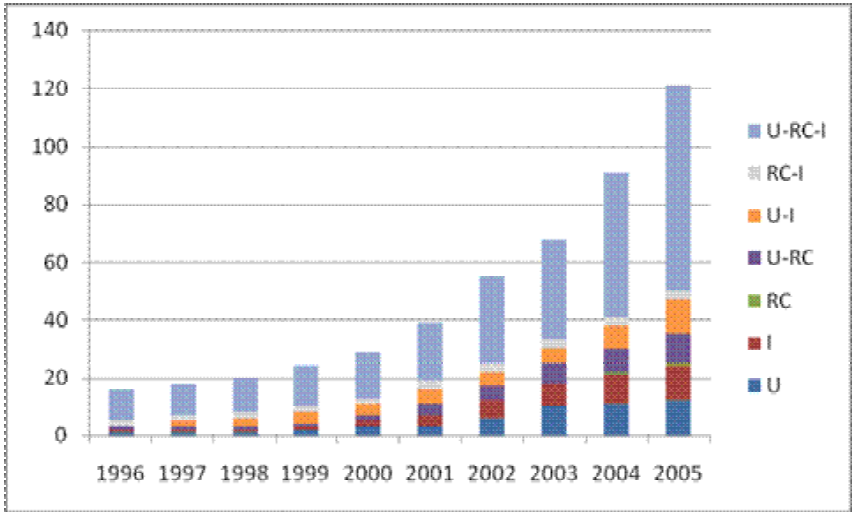
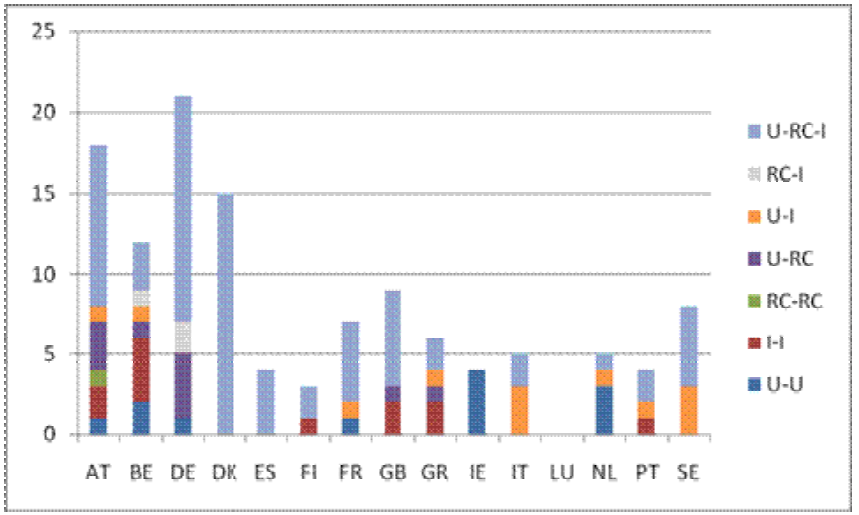
Do Policies matter?





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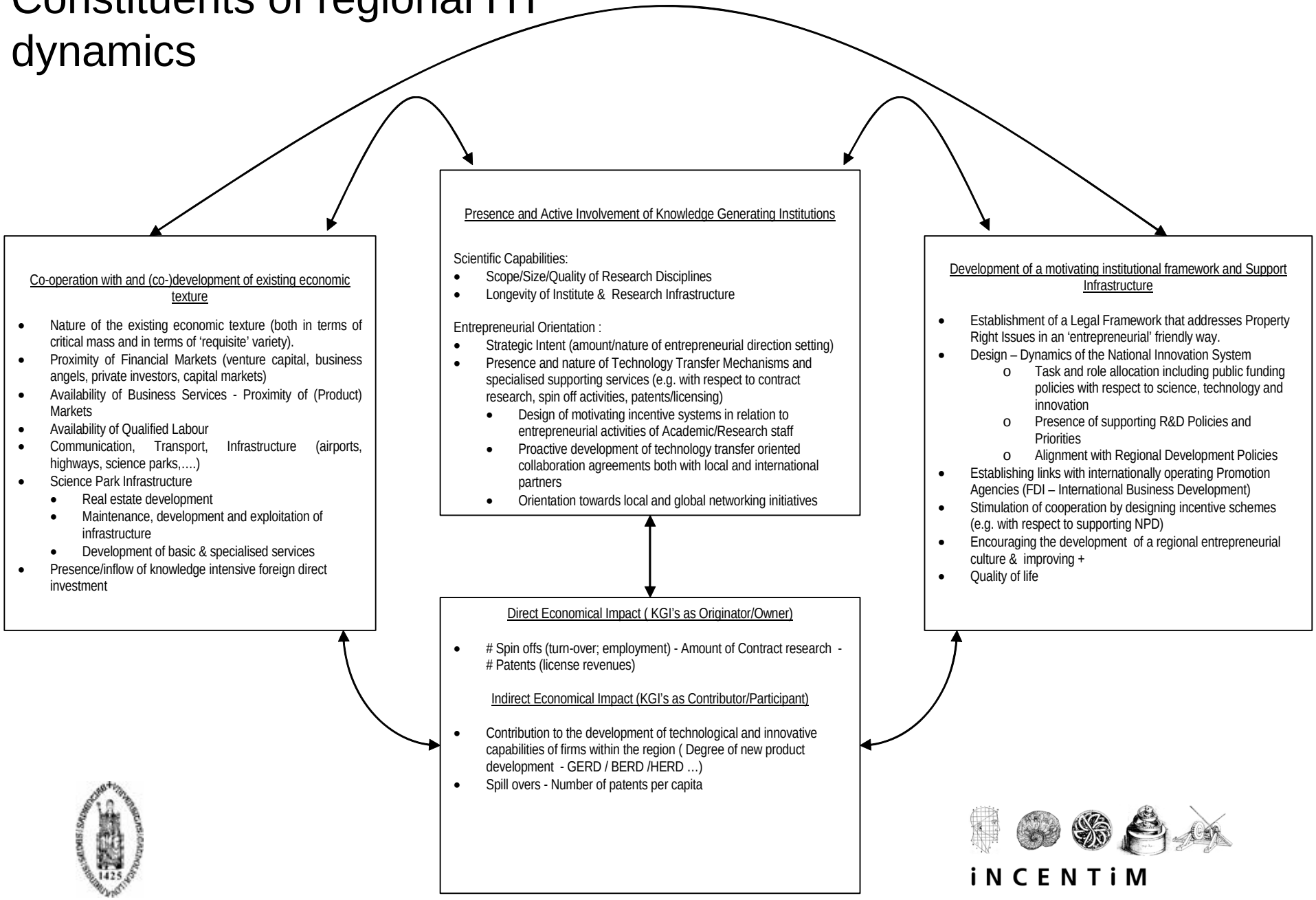
Do Policies matter?

	Coeff.	*Std. Err.*	*t*	*P>|t|*
Policies	13.837	2.940	4.710	0.000
Time	24.968	8.507	2.930	0.004
Time squared	- 1.916	0.812	- 2.360	0.020
Const.	163.595	20.650	7.920	0.000

	Factor 1	*Factor 2*
U-U policies	-,044	,907
I-I policies	,452	,629
U-RC policies	,862	,168
U-I and RC-I policies	,552	,209
U-RC-I policies	,876	-,082

	Coeff.	*Std. Err.*	*t*	*P>|t|*
Factor 1	51.692	10.621	4.870	0.000
Factor 2	9.438	9.256	1.020	0.310
Time	22.607	8.393	2.690	0.008
Time squared	-1.528	0.787	-1.940	0.054
Const.	206.009	20.691	9.960	0.000

Constituents of regional HT dynamics



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