KU LEUVEN

Regional (smart) specialization and competitiveness

K. Debackere, KU Leuven

4.2013

THE CHALLENGE anno 2013

- **The need to align:**
  - Innovation Policy + New Industry Policy
- **Innovation Policy:**
  - 3% norm
  - Horizon 2020
  - EU >< national/regional R&D budgets (±5%)
- **New Industry Policy:**
  - Avoid the pitfalls of the past
  - Focus on consortium- & project-driven approaches
  - With an explicit transformation objective

THE NEXUS

- **Smart Specialization Strategy --- “3S”:**
  - Combining, linking Innovation Policy & New Industry Policy
  - Objective: the knowledge-based transformation of the industrial/business texture of a region or nation
- **What? Choices based on:**
  - Unique knowledge, innovation and economic capabilities present in a region or nation,
  - Clustering of activities on the basis of an entrepreneurial discovery process,
  - Supported by cycles of policy learning in a Triple Helix context and approach.

3S TRANSFORMATION: 4 MODES

- **Transition** is one pattern of structural changes that a smart specialization strategy is likely to generate. Transition occurs when a new economic domain emerges from existing industrial commons (a collection of R&D, engineering, and manufacturing capabilities that sustain innovation). *E.g. the development and growth of a sustainable chemistry sector out of the present chemical industrial commons.*
- **Modernization** is another pattern. It is manifest when the development of specific applications of a general-purpose technology produces a significant impact on the efficiency and quality of an existing (often traditional) sector. *E.g. rejuvenating present, traditional manufacturing operations through the introduction of mechatronics' technologies.*
- **Diversification** in a narrow sense is a third pattern. In such cases the discovery concerns potential synergies (economies of scope, spillovers) that are likely to materialize between an existing activity and a new one. *E.g. diversification of traditional textile activities into a high value-added technical textiles industry.*
- A fourth strategic pattern involves the **radical foundation** of an economic activity domain. In this case, the discovery is that R&D and innovation in a certain field has the potential to make some activities progressive and attractive that had not been previously. *E.g. nanotechnologies for health via medical technology applications.*

THE ANALYTICAL BASIS

$$\mathbf{RCA} = \frac{\frac{Xe,s}{Xe,a}}{\frac{Xr,s}{Xr,a}}$$

LEGEND

Variable:

X = the activity considered (export, patents, publications, …)

Subscripts:

e = the focal entity (country or region), r = the reference group of entities (countries or regions), s = the activity considered (e.g. technology domain or economic sector), a = all activities considered

THE ANALYTICAL BASIS, STIE strenghts

Country	ISI Category (N=29160)					Topic (N=7059)				
	Papers	Share	MOCR	MECR	RCR	Papers	Share	MOCR	MECR	RCR
Belgium	198	0.7%	3.94	3.49	1.13	50	0.7%	4.14	3.82	1.08
Brazil	523	1.8%	3.50	3.82	0.91	140	2.0%	3.71	3.76	0.99
Denmark	318	1.1%	5.00	3.28	1.52	75	1.1%	10.01	3.44	2.91
France	1265	4.3%	3.27	3.23	1.01	328	4.6%	3.80	3.80	1.00
Germany	1294	4.4%	3.35	3.06	1.09	326	4.6%	4.63	3.80	1.22
Greece	462	1.6%	3.38	3.27	1.04	120	1.7%	3.59	3.13	1.15
India	1510	5.2%	4.11	3.97	1.04	421	6.0%	4.53	3.88	1.17
Italy	811	2.8%	3.40	3.44	0.99	223	3.2%	3.89	3.65	1.06
Japan	1524	5.2%	3.52	3.87	0.91	499	7.1%	4.29	4.14	1.04
Netherlands	480	1.6%	3.94	3.44	1.14	94	1.3%	4.65	3.89	1.19
China	3759	12.9%	3.68	3.58	1.03	1218	17.3%	4.12	3.78	1.09
Poland	339	1.2%	2.47	3.12	0.79	97	1.4%	3.66	3.66	1.00
Spain	1120	3.8%	3.51	3.76	0.93	262	3.7%	3.62	3.70	0.98
Sweden	568	1.9%	3.71	3.44	1.08	93	1.3%	3.66	3.64	1.00
UK	1424	4.9%	3.26	3.12	1.05	307	4.3%	3.78	3.09	1.22
USA	5136	17.6%	3.50	3.23	1.08	1036	14.7%	4.11	3.60	1.14
EUR15	7778	26.7%	3.38	3.31	1.02	1806	25.6%	4.02	3.58	1.12

Table 2 Energy & Fuels (biodiesel)
Data sourced from Thomson Reuters Web of Knowledge

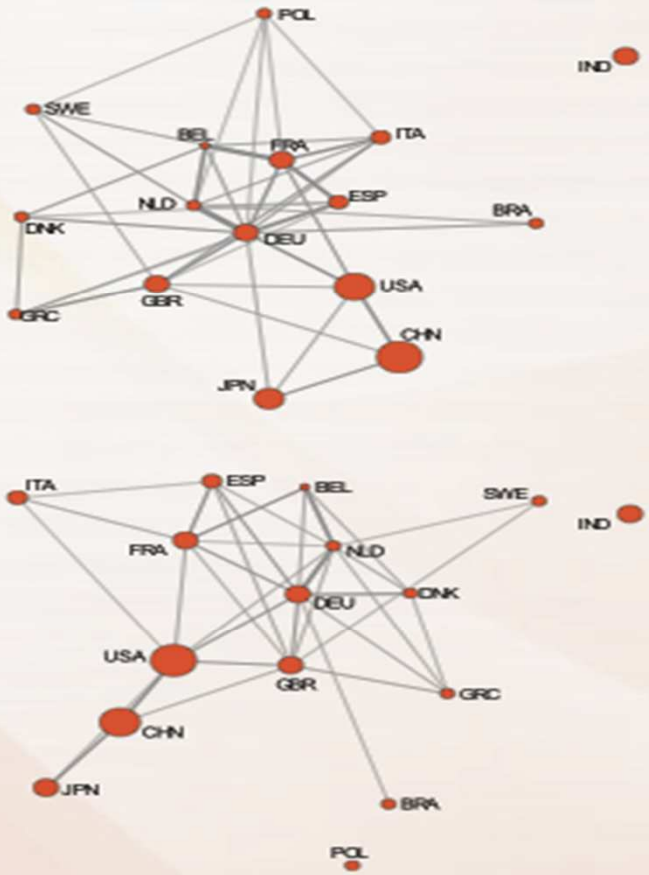
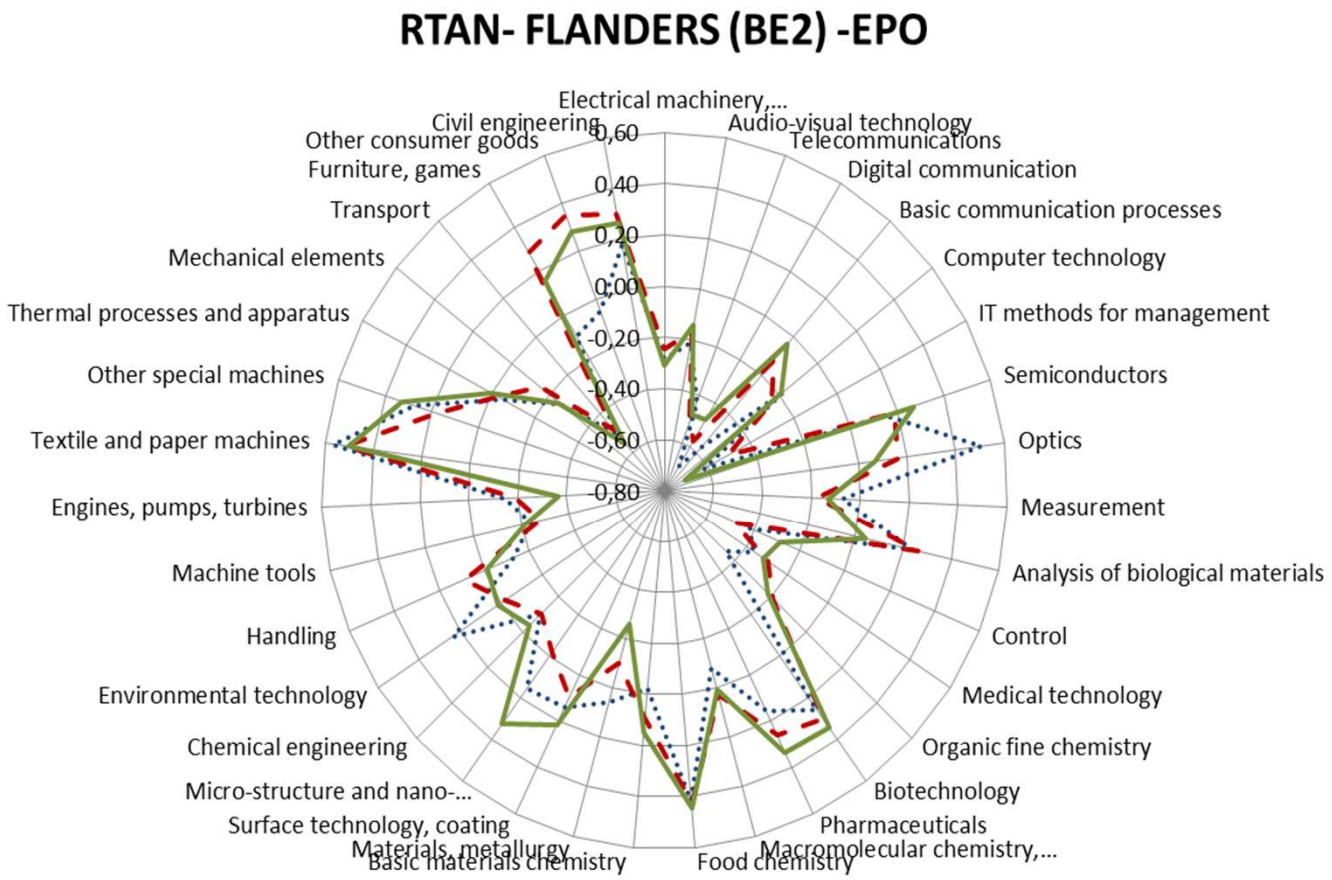


Figure 2 Energy & Fuel
(top: subject category; bottom: emerging topic)
Data sourced from Thomson Reuters Web of Knowledge

Source: ECOOM

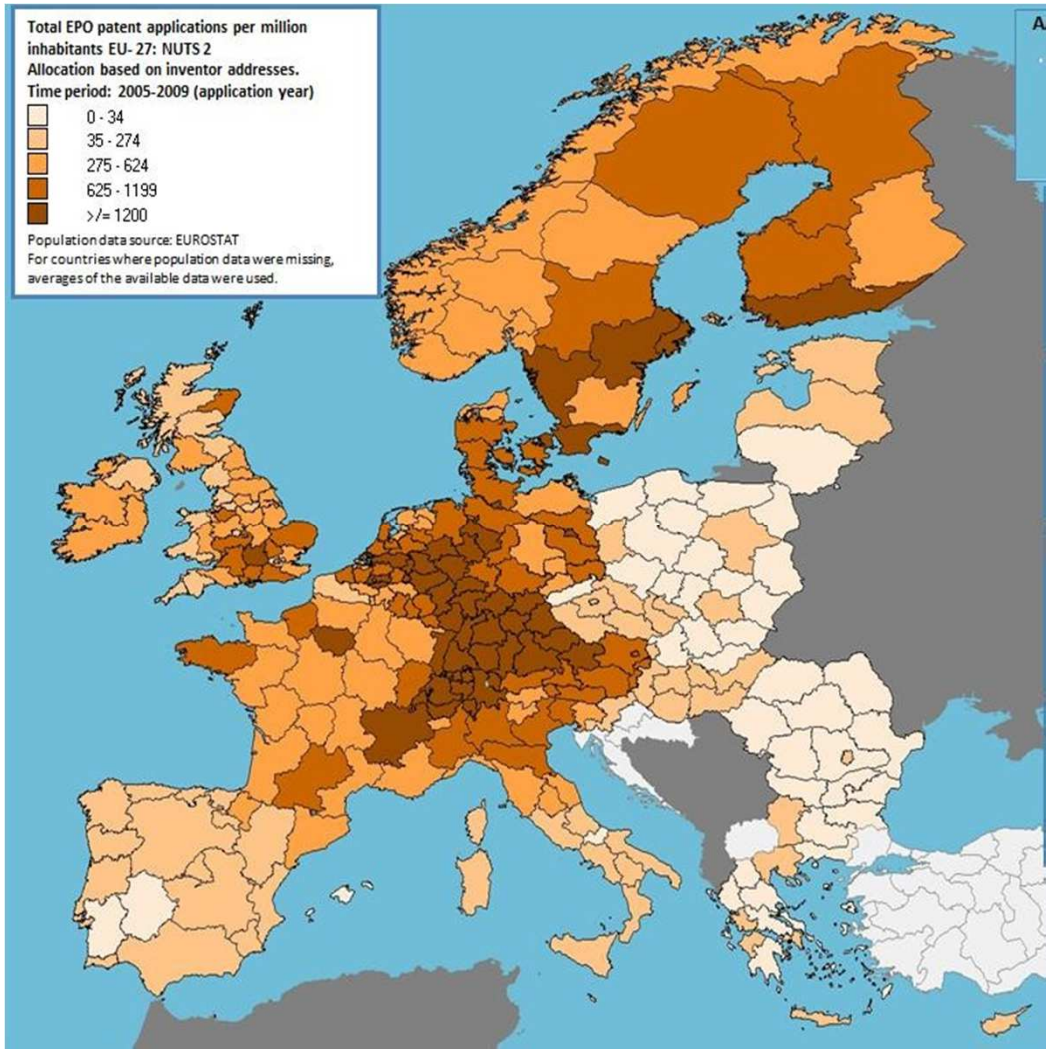
KU LEUVEN

THE ANALYTICAL BASIS, STIE strenghts



Source: ECOOM

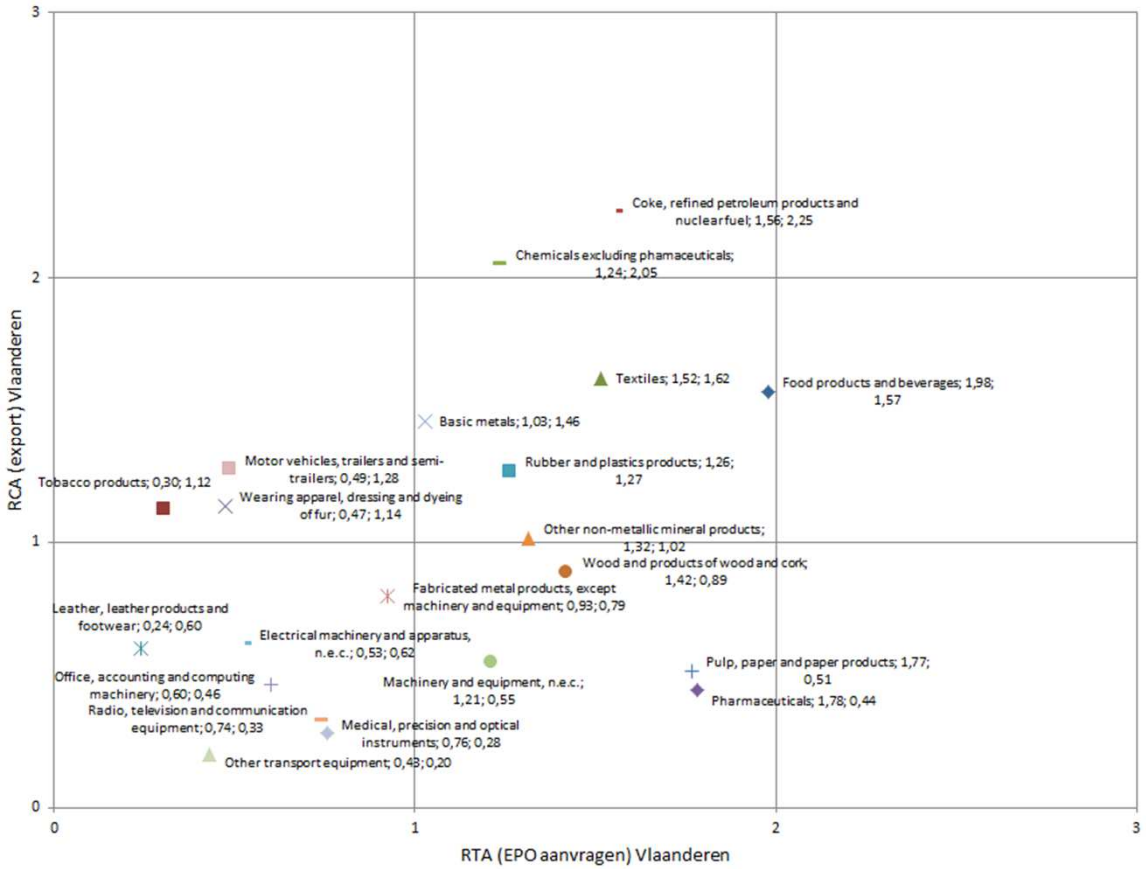
THE ANALYTICAL BASIS, STIE strengths



Source: ECOOM

KU LEUVEN

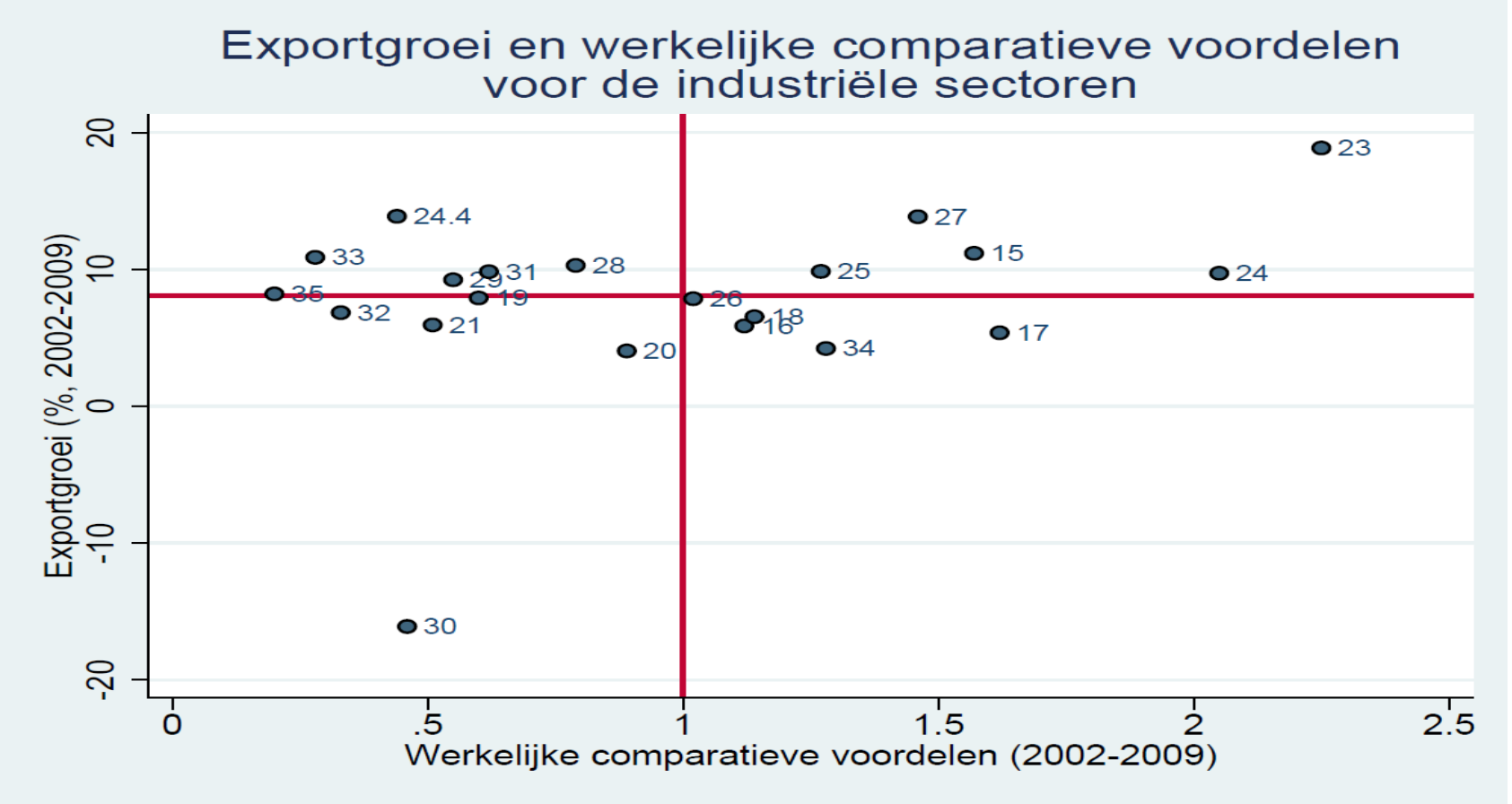
THE ANALYTICAL BASIS, STI & Economic Performance based on RCA



Flemish data, ECOOM

KU LEUVEN

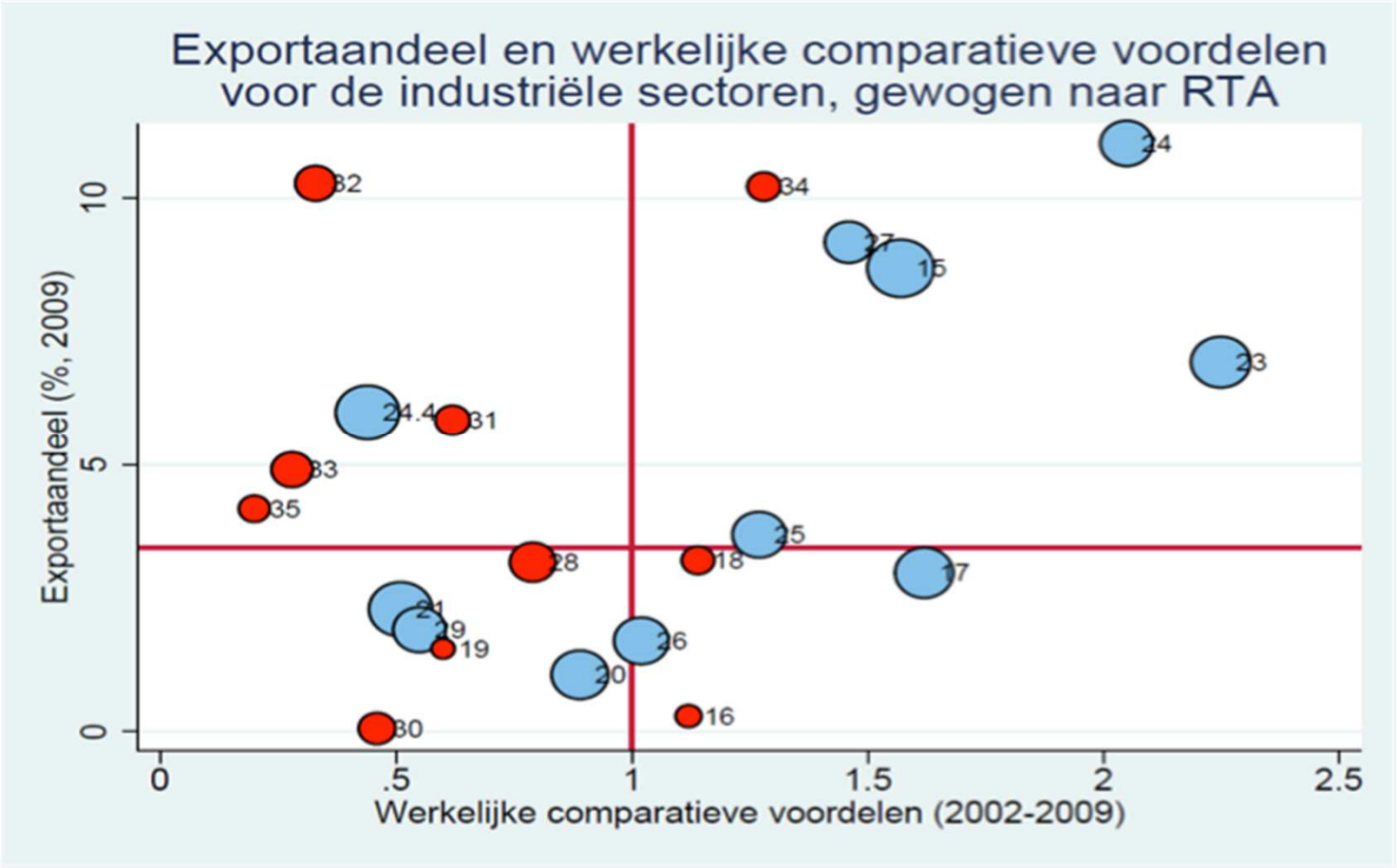
THE ANALYTICAL BASIS, Economic strengths



Flemish data, ECOOM & STORE

KU LEUVEN

THE ANALYTICAL BASIS, Combining export intensity/share & technology basis



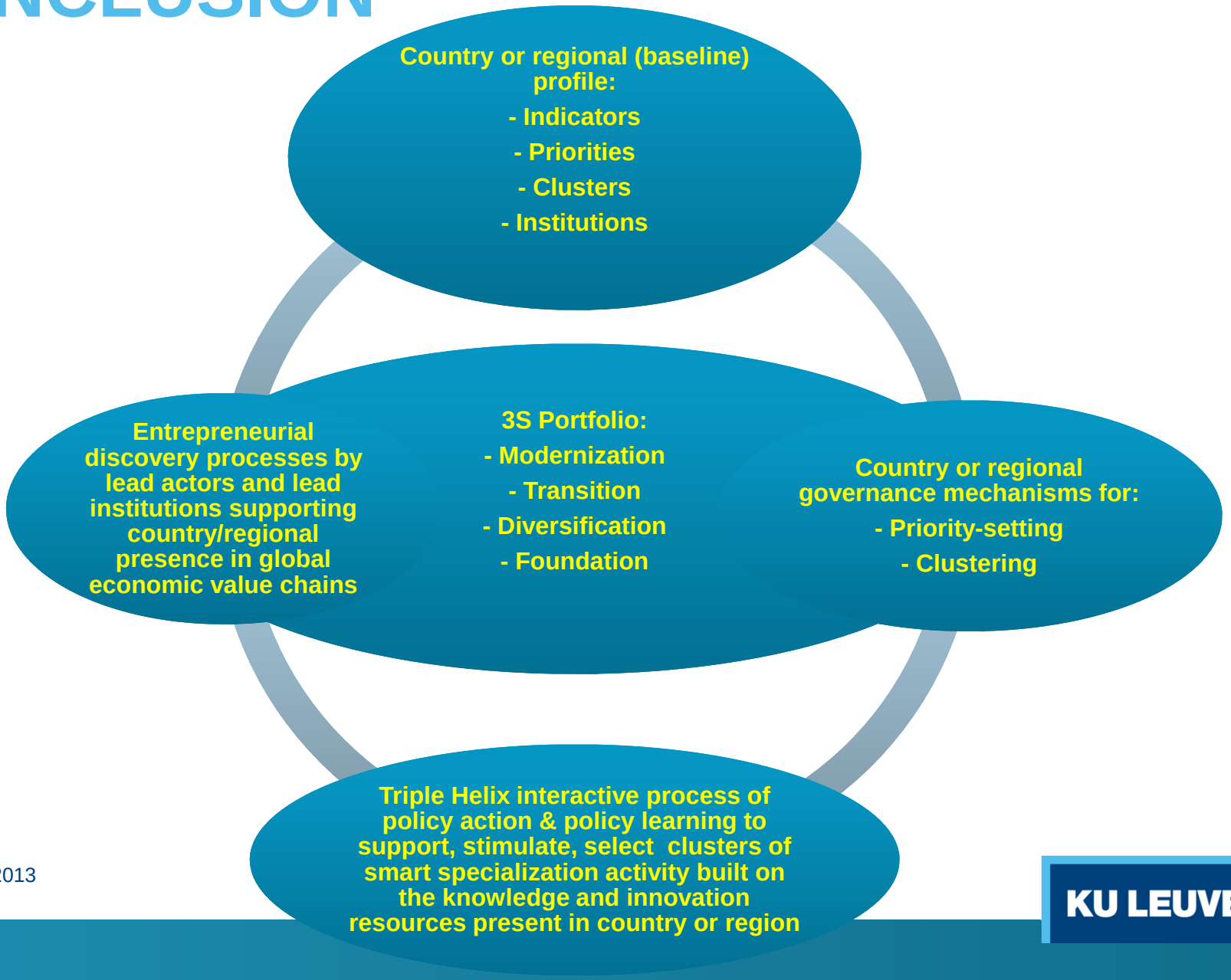
RTA>1

RTA<1

Flemish data, ECOOM & STORE

KU LEUVEN

CONCLUSION



KU LEUVEN