Les HES, entre inscription locale et intercantonalité. Quels impacts sur l'emploi régional ?

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Why UAS in Switzerland?

- 1994 Federal Message on UAS:
  - Created to boost national & local economy
  - Regional Cooperation (max. 10 UAS)
  - Generalist education
  - Valuation of vocational training
  - Applied research & services, in particular for SME
  - Complementarities with the Universities (location, research, training type, training mode)
  - Complementarities Confederation - states

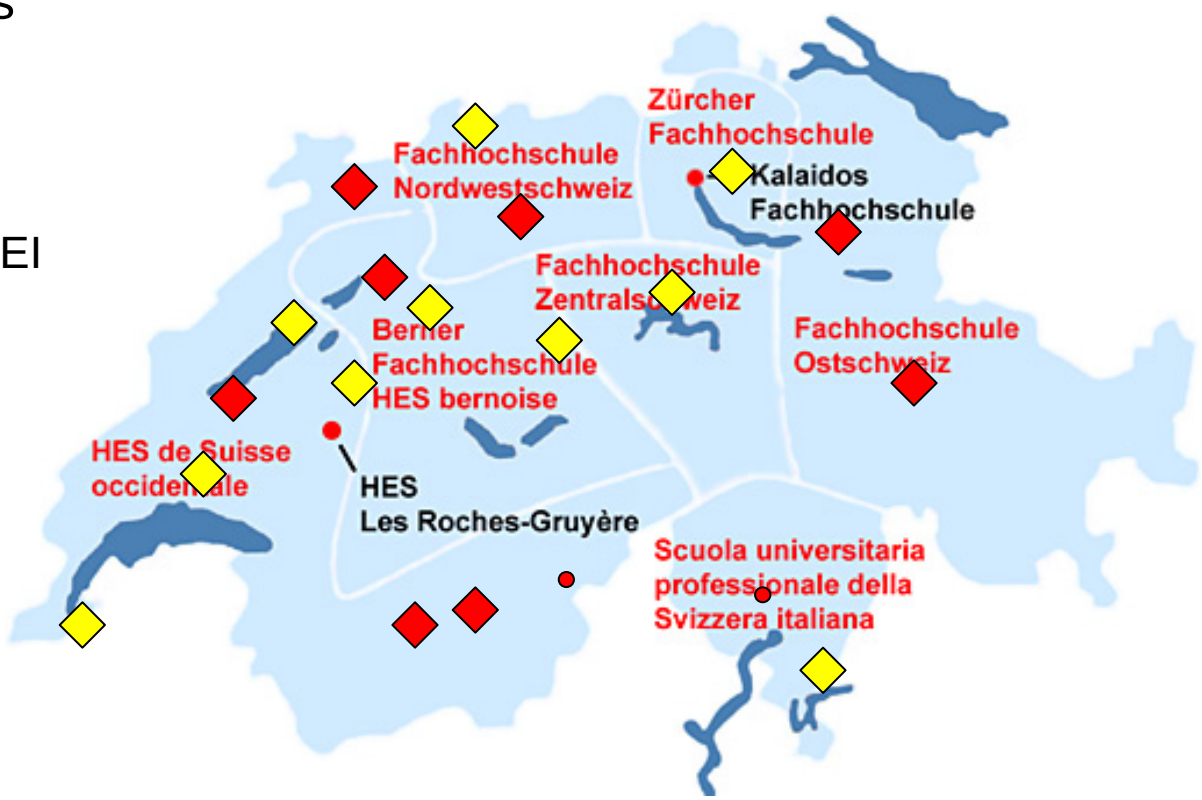
UAS Recognition criteria

- Placed in a region sufficiently large, demographically and economically
- Sufficient numbers of students and graduates (min. 500)
- Strong financial base
- Regional and interregional contacts in education and research
- Integration into the politics of Confederation and the states in education and research

  - Technical cluster or
  - Regional cluster

First casualty: regional development

- States HEI vs states without HEI
  - 5 states UAS
  - 10 states UAS & Universities
  - 11 states without HEI (mainly Central Switzerland)
- Regions = Cities



Second casualty: generalist education

- Based on 60 bachelor degree courses (KFH listing):
  - 21 bachelor degrees in only one UAS
  - 16 bachelor degrees in two UAS (mainly one in german, one in french)
  - 5 bachelor degrees in three UAS

➢ 70% of the bachelor degrees are “kind of” specialization

A UAS Typology

	Inter-states	State	Infra-state
Regional basis integration	HES-SO (7 cantons)		
Regio & technical	FHO (2 cantons)	ZFH (greatZurich)	SUPSI (Aggl. Lugano)
Technical basis integration	FHNW (3 cantons)	BFH (north Bern)	HSLU (Aggl, Luzern)

Is there a model behind the strategy?

- A marshallian's logic: a special and productive atmosphere that would develop between high school, research and industry and would support and increase regional development.
- A work division and a specialization of the production process at a regional scale and not only at the firm's level. Firms organize themselves in grapes (cluster) ; they do collaborate and compete at the same time.
- An interest for a social and cultural environment which produces an attractive industrial atmosphere. Enterprises get together in order to get benefices from services, equipments, etc. that increase the cumulative process of implantation in core of growth.

Are there links with the new regional policy (NRP)?

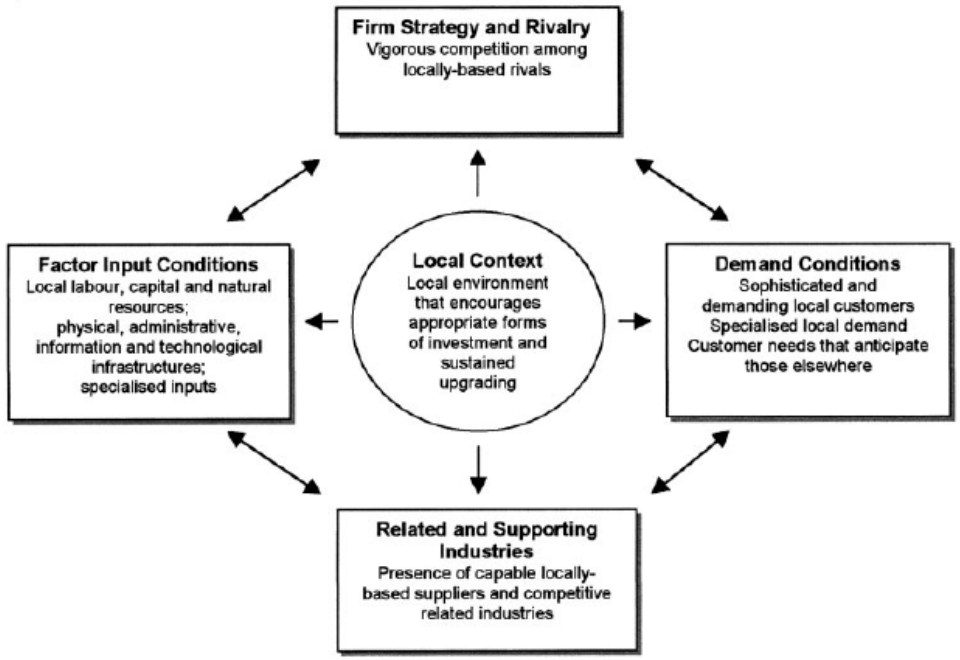


Figure 1. Porter's 'competitive diamond' of local industrial clustering (based on Porter, 1998, Ch. 10).

According to Porter (2000): Firms competitiveness produces regional competitiveness.

Governments have to act on "condition cadres".

The strategy actions have to consider the level of the economic development (stage of resources, of investment, of innovations).
Firms competitiveness is bonded with technological innovation which have high value-added.

How to measure the impacts of this regional policy?

- What is the validity of the marshallian's theory? What is the validity of the cluster concept ("a chaotic concept" [Martin, Sunley, 2003] – too many definitions, eclecticism, scale jump)?
- In the meantime, how to construct indicators of policy efficiency which target an "atmosphere" (an imponderable)?
- How to implement new capacities in a particular "industrial soil" ? How to add a new segment on a pre-existing cluster? How to get specialized factors emerging?
- More specifically, how to measure the economics' impacts of the Universities of Applied Sciences (UAS)? By the number of patents that have been laid down? By cantonal's GDP? By the number of jobs that have been created?

Porter (1998a, p. 199) 'A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities.'

Crouch and Farrell (2001, p. 163) 'The more general concept of "cluster" suggests something looser: a tendency for firms in similar types of business to locate close together, though without having a particularly important presence in an area.'

Rosenfeld (1997, p. 4) 'A cluster is very simply used to represent concentrations of firms that are able to produce synergy because of their geographical proximity and interdependence, even though their scale of employment may not be pronounced or prominent.'

Feser (1998, p. 26) 'Economic clusters are not just related and supporting industries and institutions, but rather related and supporting institutions that are more competitive by virtue of their relationships.'

Swann and Prevezer (1996, p. 139) 'Clusters are here defined as groups of firms within one industry based in one geographical area.'

Swann and Prevezer (1998, p. 1) 'A cluster means a large group of firms in related industries at a particular location.'

Simmie and Sennett (1999a, p. 51) 'We define an innovative cluster as a large number of interconnected industrial and/or service companies having a high degree of collaboration, typically through a supply chain, and operating under the same market conditions.'

Roelandt and den Hertag (1999, p. 9) 'Clusters can be characterised as networks of producers of strongly interdependent firms (including specialised suppliers) linked each other in a value-adding production chain.'

Van den Berg et al. (2001, p. 187) 'The popular term cluster is most closely related to this local or regional dimension of networks … Most definitions share the notion of clusters as localised networks of specialised organisations, whose production processes are closely linked through the exchange of goods, services and/or knowledge.'

Enright (1996, p. 191) 'A regional cluster is an industrial cluster in which member firms are in close proximity to each other.'

Martin, Sunley, 2003.

Some empirics: first results

Was there a significant statistical relationship between the localizations of the Universities of Applied Sciences and the regional employment growth rates (1995-2005)?

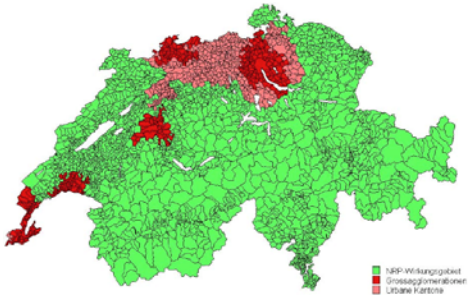
Context: the metropolization–technopolization nexus

- In a world where economic predominance is based on the control of the scientific and financial networks, and on the economies of scale and scope, the areas which win are the metropolitan areas.

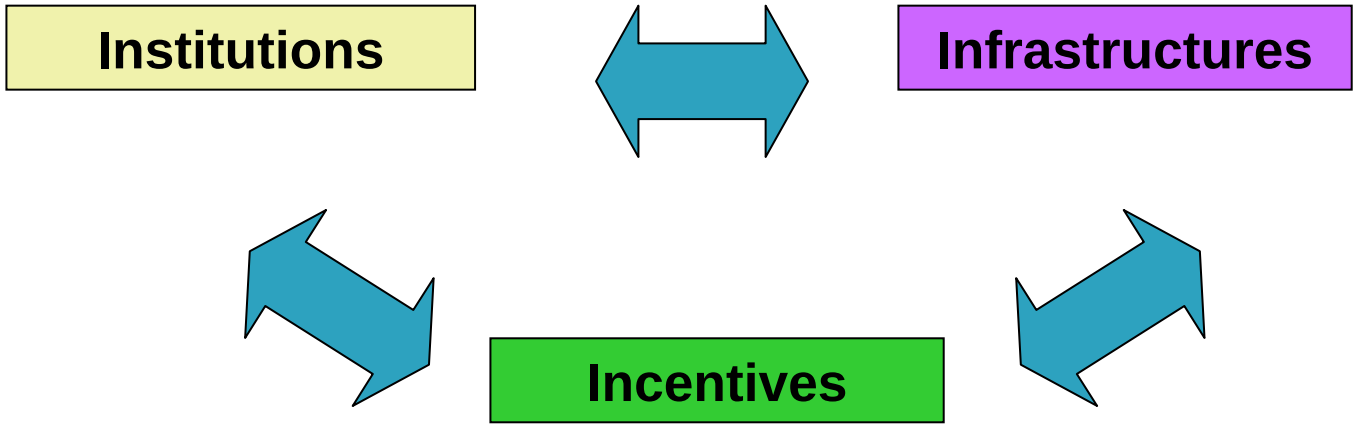
  The economic growth of the Swiss metropolitan areas follows this path:
  - They attract the decision-making centers of the large companies, the money markets, the international organizations, the qualified workers, etc.
  - They produce more wealth then the less urbanized areas

The new regional policy

- ***In our country, fragmented by linguistic and political divisions, spatially targeted interventions are needed.***
- ✓ When lagging areas face the triple challenge of long distances to economic opportunities in leading areas, large population densities, and domestic divisions that limit the movement of labor and capital, institutions and infrastructure investments could be supplemented by targeted incentives to encourage economic production in lagging areas.



The 3 parts of a successful policy



We consider the creation / development of the Universities of Applied Sciences as important institutional contributions to this policy

UAS: In search of localization's economies of scale

Type of economy of scale				Example
Internal	1. Pecuniary			Being able to purchase intermediate inputs at volume discounts
	Technological		2. Static technological	Falling average costs because of fixed costs of operating a plant
			3. Dynamic technological	Learning to operate a plant more efficiently over time
External or agglomeration	*Localization*	Static	4. "Shopping"	Shoppers are attracted to places where there are many sellers
			5. "Adam Smith" specialization	Outsourcing allows both the upstream input suppliers and downstream firms to profit from productivity gains because of specialization
			6. "Marshall" labor pooling	Workers with industry-specific skills are attracted to a location where there is a greater concentration.[a]
		Dynamic	7. "Marshall-Arrow-Romer" learning by doing	Reductions in costs that arise from repeated and continuous production activity over time and which spill over between firms in the same place
	Urbanization	Static	8. "Jane Jacobs" innovation	The more that different things are done locally, the more opportunity there is for observing and adapting ideas from others
			9. "Marshall" labor pooling	Workers in an industry bring innovations to firms in other industries; similar to no. 6 above, but the benefit arises from the diversity of industries in one location.
			10. "Adam Smith" division of labor	Similar to no. 5 above, the main difference being that the division of labor is made possible by the existence of many different buying industries in the same place
		Dynamic	11. "Romer" endogenous growth	The larger the market, the higher the profit; the more attractive the location to firms, the more jobs there are; the more labor pools there, the larger the market—and so on
	12. "Pure" agglomeration			Spreading fixed costs of infrastructure over more taxpayers; diseconomies arise from congestion and pollution

World Bank, 2009

The assumptions

- **A1:** The non metropolitan regions with Universities of Applied Sciences had, from 1995 to 2005, a **qualitatively different** employment growth, compared to the regions without any University.
- **A2:** As the localization of the Universities of Applied Sciences had been made by taking into account the regional know-how and specialization, there is a significant statistical relationship between the regional sectoral employment growths and **the academic curricula**.

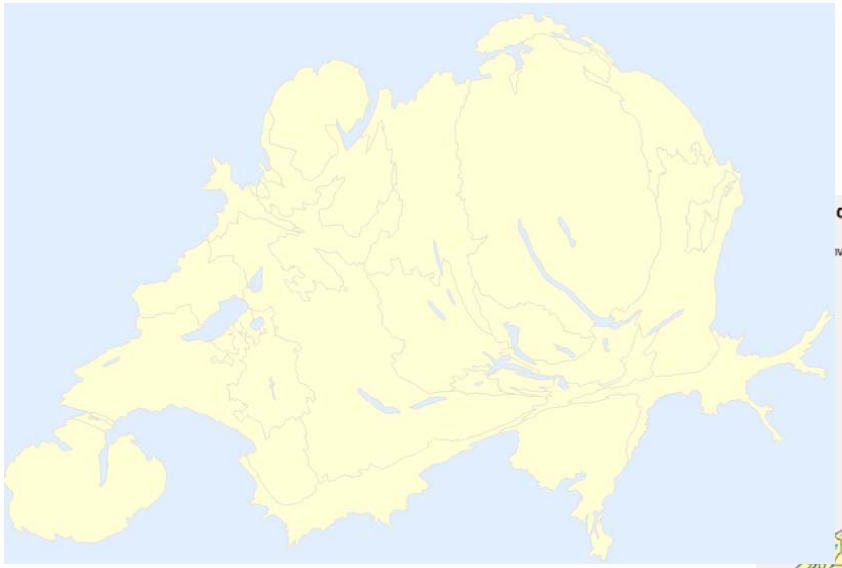
The methodology: multi-factor partitioning model

- The traditional shift-share analysis (Jones, 1940) suffers from some mathematical limits, in particular because it does not take into account the interaction effects between the various variables of the model.
- The use of the **multi-factor partitioning model** developed by Ray-Srinath (1990, 2003) makes it possible to mitigate these difficulties and, in particular, to take into account the size effects in the spatial distribution of employment. The measured effects are `standardized', allowing a comparison without statistical bias, whatever the size of the areas.

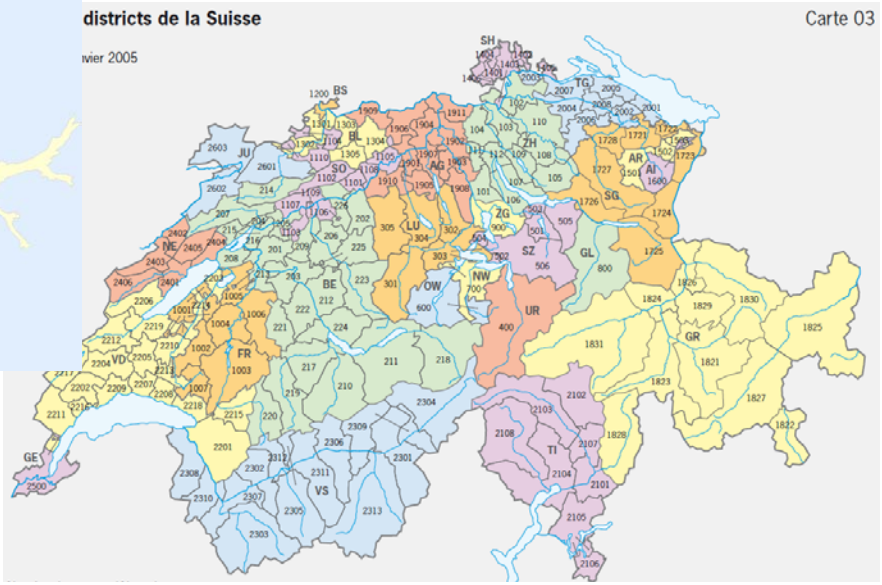
The measured effects

- **Structural effects**: correspond to the relative effect of the initial business portfolio. A strong structural effect means that the area had a high dotation in activities whose employment progressed strongly at the national level. -> A1
- **Interaction effects** : measure the association between the areas and the activities. A strong interaction effect means, for an activity and a given region, that the area has specific resources and attributes which are highly interesting for companies concerned with this activity, according to their own needs. -> A2

The geographical levels



Cantons



Districts

The main results

- **Structural effects:** The localization of the UAS in non-metropolitan regions (cantons or districts) is **not statistically related** to significantly different structural effects from those in the regions *without* any University.
  - The regions without any University could perform at least as well (or as bad) as the non metropolitan regions with UAS.
- **Interaction effects**: In a longitudinal analysis, it is **not statistically possible** to conclude to a relationship between the academic curricula in the UAS and the interaction effects.

-> No *measured* relationships between the localization of the UAS and the non metropolitan employment growth

Next analytical questions/steps

- Do the results change significantly with another employment/regional disintegration? (NB: same conclusions on SMR)
- Are the UAS too small to generate domino effects on regional employment?
- Difficulty for the non metropolitan regions with UAS to keep their graduates on the local job market?
- Too weak specialization-clusterisation of the regions, bringing to a dilution of the interaction effects
- Inadequacy of the UAS to the regional needs (not very operative on markets dominated at 87.6% by enterprises up to 9 people)?
- Employment growth driven by other endogenous specificities -> **need for qualitative analysis**