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# **Related variety, branching and regional innovation policy**

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## structure of lecture

- 1. related variety and regional branching
- 2. mechanisms behind regional branching
- 3. regional branching and policy intervention?
- 4. mechanisms and policy actions



## 1. related variety and regional branching

- variety as key driver of regional growth: the more, the better
- Jacobs: knowledge will spill over to other sectors, and geographical proximity is an enabling factor
- however, effective learning requires cognitive proximity between sectors
- but too much cognitive proximity between sectors may be harmful (lock-in)
- need for technological relatedness between sectors in a region to enable knowledge spillovers
- regional level might be crucial in this respect: knowledge spillovers are often geographically bounded



## 1. related variety and regional branching

- so, what matters for regional growth is not a diversified regional economy *per se*, but a high number of sectors that are technologically related to each other in a region
- the higher related variety in a region, the higher regional growth: effective knowledge transfer requires some but not too much cognitive proximity between sectors in a region
- Frenken *et al.* (2007) for the Netherlands, more or less confirmed by studies in other countries (e.g. Finland, Germany, Great Britain, Italy, Spain, US), though with different methodologies, among others

Italy: Boschma and Iammarino (2009), *Economic Geography*

Finland: Hartog and Boschma (2012), *Industry and Innovation*

Spain: Boschma, Minondo and Navarro (2012), *Papers in Regional Science*



## 1. related variety and regional branching

- technological relatedness also major input for regions to diversify into new industries and develop new growth paths
- regional branching: new industries branch out of technologically related local industries from which existing capabilities are exploited and recombined in new activities
- case studies on regional branching, but no systematic study

Neffke, Henning and Boschma (2011) *Economic Geography*: long-term analysis of 70 Swedish regions 1969-2002

Boschma, Minondo and Navarro (2013) *Economic Geography*: long-term analysis of 50 Spanish regions 1988-2008



## 1. related variety and regional branching

- Neffke, Henning and Boschma (2011), How do regions diversify over time? Industry relatedness and the development of new growth paths in regions, *Economic Geography*
- creative destruction: rise and fall of industries in regions
- depends on degree of technological relatedness with existing industries in a region?
- two main findings:
  - (1) rise of new industries: industries have a higher probability to enter a region when these are technologically related to existing industries in a region
  - (2) fall of existing industries: industries have lower probability to exit a region when these are technologically related to existing industries in a region



## 2. mechanisms behind regional branching

- through which mechanisms new industries branch out of existing related industries?
1. **entrepreneurship** is crucial mechanism through which regional branching occurs: **experienced entrepreneurs** (with relevant knowledge from related industries) are crucial for first stage of the industry lifecycle: experienced entrepreneurs have a higher survival rate, in comparison to other types of entrepreneurs
  2. **labour mobility** may be another mechanism: this has not (yet) been investigated in the context of the industry life cycle: does labour recruited from related industries impacts on the survival of firms in a newly emerging industry?
  3. **collaboration networks** (like R&D networks) may be another mechanism: no systematic evidence yet in the context of the industry life cycle, but there is evidence that networks with partners with related competences perform better
  4. there may be other mechanisms, like foreign investments, etc.



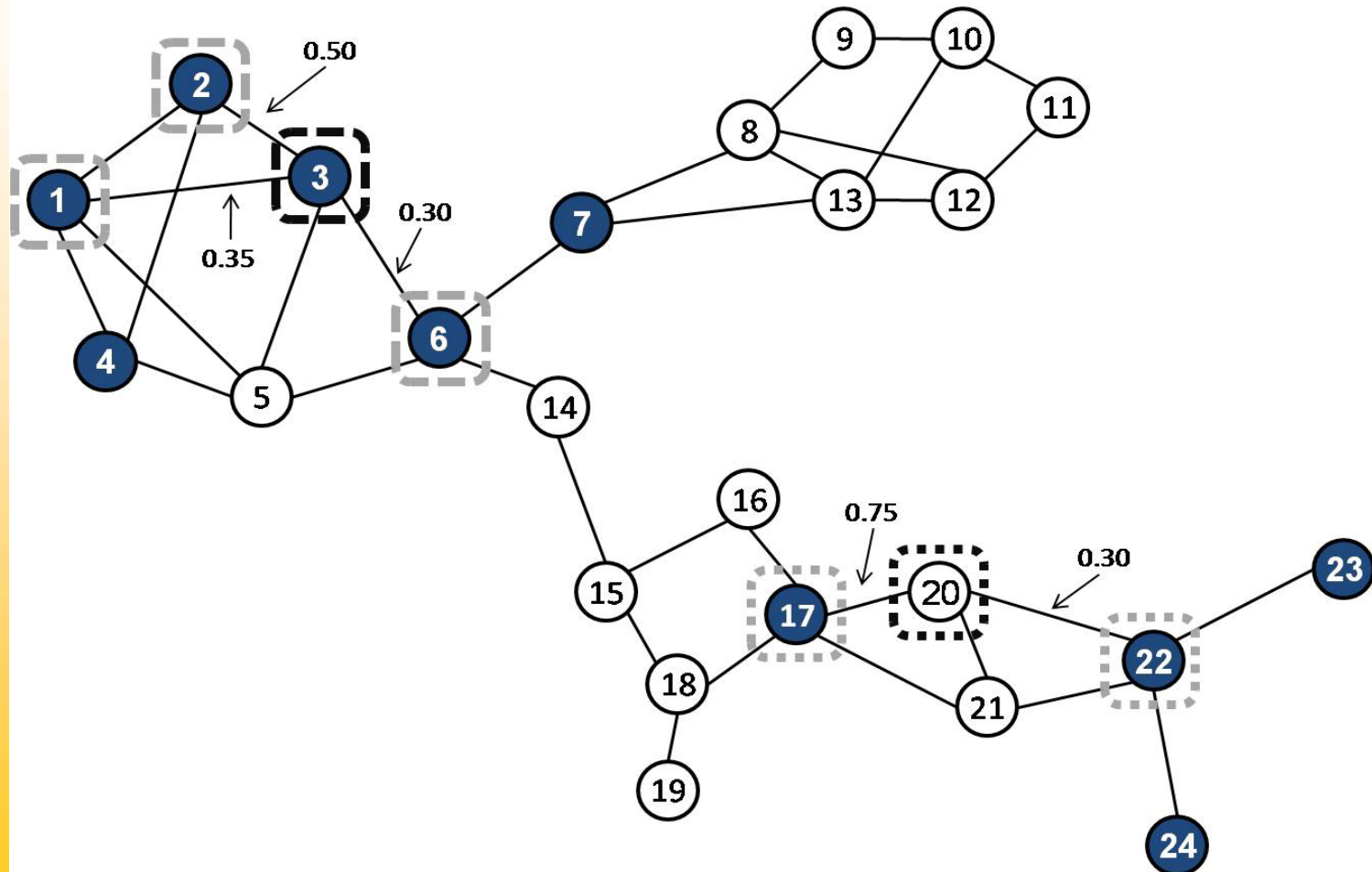
### 3. regional branching and policy intervention?

- regional policy based on regional branching takes the existing industrial structure at the regional level as a starting point
- objective: to broaden and renew the industrial structure of a region: make the region branch into new related fields by making connections between related industries
- no 'one-size-fits-all' policy
  - no universal optimal policy model (no copying of best practices)
  - do not start from scratch: region-specific assets as building blocks
  - history matters: need for tailor-made policy strategies based on relatedness: focus on available options and probable outcomes of regional policy





## where to intervene in the regional industrial structure?





## 4. mechanisms and policy actions

- objective is not to make strong sectors even stronger (not ‘picking-winners’, avoid vested interests), or support weak stand-alone sectors, but to make firms/sectors interact with related activities
- regional policy can build on the mechanisms that make regions diversify through relatedness
  1. entrepreneurship (e.g. focus on experienced entrepreneurs)
  2. labour mobility (e.g. to enhance mobility between skill-related industries, to educate people in related disciplines)
  3. collaboration networks (e.g. to support research collaboration between related partners and local/non-local partners)



## 4. mechanisms and policy actions

- these mechanisms connecting old and new sectors basically take place at the regional level: reduces the risk of leakage effects to other regions
- they have the potential to move regions in new growth paths while building on regional assets
- capabilities at country level, and more generally, linkages with other regions to secure external exposure, remain crucial though
- in principle, every industry can be made part of this policy framework, but every industry is different (in terms of knowledge base and supportive institutions)
- this also applies to every type of region: however, some regions have stronger capabilities and have more related variety than other regions, and thus more opportunities to diversify into new industries: therefore, policy needs to be place-based