

# European Experience in UIIs

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# Literature on UIs

- Most empirical studies are generally based on the experience in the United States as the guiding light.
- Successful university-industry linkages are based on interactions among:
  - Top ranked research university
  - High-tech firms
  - Other supporting services such as venture capitals and intermediary organizations.
- Such linkages are thought to benefit from strong intellectual property right assignments and formal transfer of knowledge from universities to firms.

# Effects and Determinants of UILs

- To evaluate what kind of university-industry linkage is fruitful, one needs to first establish that UILs are beneficial to the economic performance of firms. Once that is established, then some understanding of what makes firms and universities engage with each other is needed.
- The paper by Lööf and Bronström examines whether UILs contribute to the increase in firms' innovation inputs and outputs
- The paper by Lockett and others examines why universities prefer particular forms of UILs over others.
- The paper by Arvanitis and others looks at the determinants from the firms' point of view.

# Is UIL Effective?

- Among those firms studied by Lööf and Bronström, the answer is yes.
- These firms that collaborate with universities spend more on R&D, patents more, and have larger revenues from new products, relative to comparable firms without collaborative arrangement with universities.
- In addition they find that globally-oriented firms also tend to seek relationships with universities.

# Why Universities Engage with Industries?

- At the root seems to lie the financial constraint that these universities face.
- They see UILs as one way of supplementing their budgets, especially expenditure on research to improve its quality of research
- This constraints favor contract research, licensing, and spin-off companies (mainly explicit knowledge transmission) , which brings direct financial resources to universities and tend to be stressed more by universities. While Knowledge Transfer Partnerships, consultancy and mobility of students and researchers (mainly tacit knowledge transmission) tend to receive less attention.

# Why Firms Engages with Universities?

- First, there is a large difference among firms in their propensity to seek relationship with universities. Firms in more innovative sectors (chemicals, machinery, electronics, precision instruments, computer and business services) tend to have relationships with universities than firms in other sectors.
- These firms also tend to have a large number of skilled workers and well-established R&D facilities, suggesting that absorptive capacity at firms are an important determinant.
- Tacit knowledge gained through access to specific skills, graduates, and education and training opportunities at universities prompts firms to seek collaboration with universities.
- Of course, access to codified knowledge is also important, especially for manufacturing firms (for development of new products) and for knowledge-based services industries (for stimulating new research ideas and having access to basic research).
- Firms engage with universities in multiple ways simultaneously, depending on the particular needs

# What does this all add up to?

- University-industry linkages will likely to lead to increase in innovative inputs (such as R&D) and more importantly, innovative outputs (patents, sales from new products, etc)
- However, what particular forms of UILs are most effective is uncertain.
- Firms tend to interact with universities in various ways simultaneously, making it hard to say whether one approach is better than the other (similar to the literature on technology transfer in general)
- In addition, other factors such as sectoral differences, size, the orientation of firms (local, regional, national, or global players) seem to play a role.
- Firms tend to prefer transfer of tacit knowledge, while universities tend to favor transfer of explicit knowledge since it directly benefits universities financially, although some of this is influenced by particular regulation and institutional constraints.

# Way Forward

- Link particular form of university-industry linkages with industry characteristics (technology involved, maturity of an industry?)
- A particular form of UILs the result of Institutional constraints or reflect the best choice?
- Does sphere of firms activities affect the geographical location of UILs and the type of UILs? What are the implications to the quality of universities for these different types of firms?