ESRC / HEI Funding Councils Initiative

Impact of HEIs on Regional Economies

The Overall Impact of HEIs on Regional Economies

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Resources

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Introduction to HEIs’ Impacts on Regional Economies: What do they do? (And who influences this?)

**Inputs**
- Labour
- Land
- Capital
- Management
- Intermediates

**Extra-regional Influences on HEIs**
- World economy (globalization)
- EU
- UK Government
- Other regions’ HEIs etc

**Higher Education Institutions**
(Student impacts)

**Own-region Influences on HEIs**
- Wales, NI Assemblies
- Scottish Parliament
- Funding Councils,
  - Scottish Enterprise, RDAs; ITIs
  - culture; tradition; KTPs

**Outputs**
- Graduates
- Research Consultancy/Advisory
- Cultural outreach
- Community outreach
- Other Knowledge Exchange
Gap1: Economic Impacts of HEIs on Own-Regions

• First really major gap we tackle is macroeconomic or system-wide impact of HEIs on the host region - especially current neglect of supply side.
• Have been studies - the best of these have been thorough input-output (IO) analyses:
  – Clear methodology, useful description of linkages
  – Extremely useful databases created- and results transparent
• But, as the best practitioners (many of whom are on our team!) recognise, these studies:
  – Embody a restrictive view of host region’s economy (excess capacity, significant unemployment) – passive supply side
  – Focussed on the demand-side effects and “one-shot” in nature
• The approach cannot capture:
  – Heterogeneity of host regions (in terms of e.g. supply conditions)
  – Any of the potential supply-side impacts of HEIs
Gap1: Economic Impacts of HEIs on Own-Regions

Demand-side
- Expenditures by the University, students and staff within the region (which stimulate demand within the region)

Supply-side
- Skills
  - Provision of high level generic skills for the regional economy
  - Provision of specialist professional skills to region
- Migration
- Technology transfer/ exchange
  - Direct contribution to development through spin-outs, licensing and other commercialisation activity
  - Contributing indirectly to development through skills and knowledge of academic staff to technological innovation in local businesses (perhaps through consultancy or advisory role)

*HEIs are likely to exert a complex combination of demand and supply side impacts on regional economies*
Closing Gap 1: Own-Region Impacts

Need to develop databases and evidence on key behavioural relationships:

- Input-output and SAM databases with HEI sector separately identified for: Scotland, Wales, NI, South-East
- Quantitative representations of the supply-side transmission mechanisms from HEIs to regional economies
- Sources: existing literature and new analyses of microeconomic databases

Proceed through development/adaption of a suite of regional *computable general equilibrium models* (CGEs) disaggregated to include HEI sector

- Include supply-side – so allow for heterogeneity among host regions
- In principle can accommodate impacts of e.g. technology transfer and any other supply-side impacts
- though evidence required to specify and parameterise key relationships
Progress on Gap 1: Construction of an IO table for Scotland 2006

- Published IO table for 2003 by Scottish Government, rolled forward to 2006

- Disaggregate the Higher Education sector by institution using two sources of information:
  - HESA data for wage costs, exports and total output
  - Previous study of Kelly, McNicoll and McLellan for intermediate demand coefficients and import shares
Preliminary results

Type I multipliers range from 1.01 (Bell College) to 1.86 (UHI).
• Differences stem from different weights of wages in total output. The higher the share of wages the lower the multiplier.

Type 2 multiplier is 2.74 for all institutions.
• Share of wages is the only difference in input structure. Therefore when we endogenise wage expenditure, the composition of inputs is the same for all institutions.
• Value is close to that calculated by Kelly et. al. (2002) and (2006) – 2.52, 2.56 respectively.
Results: hypothetical extraction

• We have also simulated the impact of “hypothetically extracting” each institution as well as the whole HEI sector in Scotland. The HEI sector has an impact of £2.2bn. (It’s own contribution to GDP is £1.3bn.)

• Results for individual Institutions range from £459m (University of Edinburgh) to £11m (RSAMD)
Results - impact of each institution

GDP impacts (£m)

Abertay
Bell College
Dundee
Edinburgh
Glasgow School of Art
Heriot-Watt
Napier
Paisley
QMU-Ed
Robert Gordon
RSAMD
St Andrews
SAC
Stirling
Strathclyde
UHI
Gap 2. The Overall Impacts of HEIs on Other Regions and the Nation

The activities of HEIs have impacts on regions other than the host region (e.g. impact of “RUK” on Scotland, Wales and NI)

- Regions interdependent through e.g. trade and migration flows (HEI-system itself interregionally interdependent - migration of students and graduates; 40% more graduates employed by London than it produces)
- HEI impacts on host region will inevitably spillover into others (devolution and policy differentiation e.g. student financing?)
- Spillovers could be positive as, for example, through demand changes
- But may also be negative (compete away other regions’ students; graduate migration; concentration of centres of excellence in South East; RAE?)
- Best way forward is exploration of HEI system as a whole, since spillovers multidirectional, and interregional system
Closing Gap 2: Impacts on Other Regions and the Nation

We shall augment CGE (and IO) approach to provide an explicitly *interregional* analysis of HEI impacts

- Need interregional input-output tables and Social Accounting matrices
- Interregional transmission mechanisms (illustrate with Scotland –rest-of UK model)
- Greater challenge than single-region models, and inevitably even greater uncertainties, but
- Have to do it if aspire to any kind of cost benefit analysis (CBA) of HEI impacts in UK
Gap 3. Towards a CBA of HEIs’ Regional Impacts

Assessment of the *impact* of HEIs is insufficient to provide an *evaluation* of the effects of HEIs on national and regional economies

- Impacts would, of course, be a part of such an evaluation
- But would require detailed assessment of all the costs and benefits associated with HEIs from the perspective of society as a whole
- In principle include all the externalities (positive and negative) of HE
- General presumption of positive externalities
  - But do these relate to education rather than HE?
  - Negative interregional spillovers are examples of negative externalities
  - And would be interested in regional distribution of costs and benefits even if evaluation perspective was UK as a whole

More speculative and challenging, but *not* a reason for inaction

- CBA is the official evaluation approach (Green Book)
- Integrating (traditionally micro) CBA with (traditionally macro) impact effects
  - Mega project analyses and the need for a general equilibrium approach?
Conclusions

• Targeting three major gaps, each of which constitutes a major challenge:
  – Host-region economic impacts
  – Other-region economic impacts
  – Wider effects of HEIs

• Given the nature of the topic and policy interest, interaction with the wider policy community is critical – ESRC and HE Funding Councils, but also devolved governments/ agencies.
  – Committed to engaging with both academic and policy communities: both critical to success

• One key determinant of success will be our ability to capture impacts in the graduate labour market….