

Impact of Higher Education Institutions on Regional Economies Joint Research Initiative

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Research Brief Number 14

The expenditure impacts of universities on the Scottish economy vary greatly: different sources of funding are the cause of the variation

Conventional expenditure “impact” analyses fail to estimate accurately the contribution of Higher Education Institutions (HEIs) to the Scottish economy, for a number of reasons. They do not take account of the fact that HEIs are partly publicly funded and that the Scottish Government’s budget is constrained by the grant it receives from the central government. They do not distinguish between the exogenous parts of student expenditure (those funds that are independent of the activity of the local economy) and the endogenous parts (those driven by the level of income within the local economy). Furthermore, impact studies typically vary in terms of: the time period to which they relate; their methods of analysis; the precise assumptions they make when implementing their approach. Accordingly, the results of impact studies traditionally cannot be used for comparative purposes.

This paper analyses the expenditure impacts on the Scottish economy of the twenty Scottish HEIs. The primary focus is the expenditures of HEIs and of their students, and the treatment of HEIs as a distinct sector of the economy. The study adopts an input-output (IO) approach (the type of analysis traditionally used to depict the inter-industry relations of an economy in best practice studies) but uses it in innovative ways. The study provides a comprehensive, systematic and consistent IO analysis of the impact of each individual HEI, as well as the impact of the Scottish HEI sector as whole.

Key Findings

Recognition of the Scottish Government’s budget constraint has an important impact on estimates of the expenditure effects of the HEI sector as a whole

- Since the Scottish Government operates with a fixed budget allocated from Westminster, Scottish Government expenditure on HEIs displaces other public expenditure.
- All Scottish HEIs receive significant levels of government funding. Subtracting the impact of this funding inevitably reduces the measured impact of HEIs’ expenditures.

Conventional IO analyses suggest that expenditure impacts of Scottish HEIs are similar, if scaled with size of each institution

- Expenditure impacts on GDP appear to vary between the £468 million, contributed by Edinburgh University, to the £12 million impact of the Royal Scottish Academy of Music and Dance. But when impacts are corrected for scale and expressed in terms of conventional multipliers they appear remarkably invariant across HEIs.

However, HEIs that appear to have similar conventional expenditure impacts turn out to have more varied impacts once the budget constraint is imposed.

- A disaggregation of HEIs’ income by source reveals considerable variation in the extent of their dependence upon government funding and their ability to draw in income from external sources.

- In total, 54 per cent of HEI income comes from the Scottish Government. However, some institutions are much more dependent on public funding than others: Bell College¹ is most reliant, at 88 per cent, with St Andrews the least dependent at only 37 per cent.
- Acknowledging the binding budget constraint of the Scottish Government and deriving balanced expenditure multipliers reveals large differences in the net-expenditure impact of HEIs upon the Scottish economy.
- The source of variation between institutions is not their different expenditure patterns but the origin of income and the extent to which they are dependent on public funding.
- There appear to be two clusters of HEIs with similar expenditure impacts and outliers at each of the lowest and highest end of the impact scale.

HEIs' expenditure impacts on the Scottish economy are lower than conventional impact studies imply but they are not negligible, or zero, as sceptics believe

- Conventional studies overestimate HEIs' expenditure impacts by ignoring the binding budget constraint of the Scottish economy.
- HEIs' expenditures are less import-intensive than those of the public sector. Therefore, Scottish HEIs exert positive expenditure effects relative to the public sector.
- HEIs are relatively export-intensive and draw a significant portion of their funds from sources outside Scotland. HEIs are not formally part of the public sector, nor do they behave "as if" they are: they are export-intensive institutions.

The impact of student expenditure varies between institutions depending on the number of students and whether they come from within or outside Scotland

- Almost one third of Scottish HEI students come from outside Scotland but the proportion in different institutions varies. Bell College recruits almost wholly from Scotland while most students at St Andrews and Edinburgh University are non-Scottish.
- For some institutions, student consumption makes up a large share of total balanced expenditure multiplier. For example: Bell College – 60 per cent, Queen Margaret University College – 54 per cent. At Napier and Paisley it is just under 50 per cent.
- The combined impact of HEI and student expenditure means that for all but two institutions the multiplier value is greater than unity.
- The addition of student spending leads to a marked change in the ordering of HEI's by their balanced budget multiplier values. For example, Queen Margaret University College and Dundee have almost identical balanced expenditure multiplier values but when broken down into university and student expenditure effects, they are quite different.
- When student expenditure effects are added, there is no longer clear clustering of similar institutions, although high and low outliers still remain.

Implications

- HEI expenditure impacts are significant, but their measurement should acknowledge the presence of the public expenditure constraint in devolved regions.
- The impacts of impending budget cut-backs are likely to be quite different by institution depending on their sensitivity to public funding.

¹ Bell College has since merged with the University of Paisley to form the University of the West of Scotland. However, these institutions are separately identified in the 2006 database that was employed in the analysis (the most recent data available at the time the study began).

- Any overall assessment of the contribution of HEIs to their host region must attempt also to measure supply-side impacts such as those that occur through the skills of graduates and the impact of knowledge exchange on innovation.
- It is important to note that external students' expenditures typically have the biggest impact. Yet these students are least likely to stay and stimulate the host region through their enhanced productivity. While the demand side stimulus of such students may be considerable, they may have little or no supply-side impact on the host region once they have graduated.

Methodology

The study provides an overview of the Scottish higher education system and presents key characteristics of individual Scottish HEIs – including their funding sources and the level of funding relative to the number of staff and students.

The study uses the input-output approach to investigate the expenditure impacts of HEIs. However, IO is used as an accounting framework that is modified to acknowledge the presence of binding expenditure constraints in regions with devolved public sector budgets.

The analysis is based upon the official IO tables for the Scottish economy for the year 2004. However, extensive augmentation of the basic table was required to generate an updated Scottish analytical table for 2006 that identifies each individual HEI in Scotland as a separate sector.

In order to provide close impact comparisons, the officially produced IO table for Scotland is augmented so that each individual Scottish HEI is separately identified as a sector, with its own row and column. This allows the first systematic comparison of expenditure impacts across Scottish HEIs.

In comparing the impacts across Scottish HEIs, a number of innovations are introduced. The importance of variation in the sources of revenues to HEIs reflects the crucial role of the regional public sector expenditure constraint that is binding in Scotland through the operation of the Barnett formula.

In measuring the student expenditure impacts the study adopts a novel approach that emphasises the importance of the degree of exogeneity of student expenditure. The regional government budget constraint also impacts on student funding.

Further Information

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