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Innovation in UK higher education: A panel data analysis of undergraduate degree programmes

Nola Hewitt-Dundas[a], Stephen Roper[b,*]

[a] Enterprise Research Centre and Queen's Management School, Queen's University Belfast, Belfast, BT9 5EE, United Kingdom
[b] Enterprise Research Centre and Warwick Business School, University of Warwick, Coventry, CV4 7AL, United Kingdom

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ABSTRACT

In the UK, higher education is increasingly a marketised service sharing many characteristics with other professional services such as legal, medical or financial services. With marketisation comes competition, and the need for Higher Education Institutions (HEIs) to develop and maintain strong programmes to attract and retain high-class faculty and fee-paying students. Here, we consider the drivers of programme innovation − i.e. the introduction of new programmes and the withdrawal of existing programmes − in UK universities. Our focus is on undergraduate programmes as these account for three-quarters of all student enrolments. Using panel data for UK universities we identify significant resource, internationalisation and business engagement effects. Financial stringency and more extensive international market engagement both encourage programme introduction. Collaboration with businesses has offsetting effects depending on the nature of the interaction. The results have both strategic and systemic implications.

1. Introduction

Internationally, higher education 'is moving from being a public good, funded through governments, to a private good where more of the cost is put on students and families' (Kandiko and Blackmore 2010, p. 29). This trend − strongly evident in the UK − positions undergraduate higher education as a 'marketable service' sharing many characteristics with other professional services such as legal, medical or financial services − i.e. their intangible nature, inseparability, and extensive inter-activity between client and provider (Miozzo and Soete, 2001). With marketisation comes competition, and the need for Higher Education Institutions (HEIs) to develop and maintain strong portfolios of undergraduate programmes which can attract and retain high-class faculty and fee-paying students. This requires programme innovation − the development and introduction of new programmes and the withdrawal of programmes which are outdated, unattractive or unviable. To date, studies of programme innovation in higher education have been case-based, focussing on the formulation of organisational strategy in HEIs and the delivery of programme change (Brennan et al., 2014; Kandiko and Blackmore 2010).[1] Here, we provide an alternative, quantitative, perspective identifying the drivers of undergraduate degree programme introduction and withdrawal across the UK university sector.

Our starting point is a recognition of the complex stakeholder pressures and organisational objectives of universities, and the inherently interactive and social nature of the innovation process (de Medeiros et al., 2014; Harrison and Leitch, 2010). As Jarzabkowski (2005) outlines, 'curriculum change is often a contentious and political endeavour' (p. 26) as a result of a complex stakeholder landscape and a frequent lack of agreement about objectives between academic and administrative staff (McInnis, 1998). Here, to reflect the increasing marketisation of undergraduate higher education provision in the UK, we focus on three main drivers of undergraduate programme introduction and withdrawal: the financial performance of each HEI, engagement with international markets and the extent of business engagement.

The context for our analysis is that the UK, like many other countries, has struggled to ensure adequate financing of higher education. Closest to the UK model is that of Australia where student fees (from 1989) and loans (from 2005) have sought to promote diversity and student choice in higher education. Over the same period, the USA has seen a growth of private (non-profit and for-profit) education providers. Models differ, but generic issues remain such as widening access to socially disadvantaged individuals, ensuring the quality of programmes delivered, managing the costs and revenue (fees) models, and ensuring

* Corresponding author.
E-mail addresses: nm.hewitt@qub.ac.uk (N. Hewitt-Dundas), Stephen.roper@wbs.ac.uk (S. Roper).

[1] As Perkmann et al. (2013, p. 431) suggest the result has been that 'extant analyses have neglected to consider [innovations'] impact on educational output, such as time devoted to teaching, curriculum and programmes development, and teaching quality'.

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the provision of business-relevant skills (HEPI, 2017). Fundamentally, as HEPI (2017) argue 'reforms under [these] different jurisdictions over the past two or three decades have aimed to open the public higher education system to competition, privatisation and marketisation' (p. 40).

In contrast to the marketised model of higher education in the UK, Australia and the USA, in many European countries universities continue to be funded from tax revenues with no, or limited, student fees. In Germany, modest tuition fees (up to €500 per semester) were introduced by seven Lander from 2006/07. However, in the absence of public support, most of these were abolished within a year with Lower Saxony the last to remove student fees in 2014/15.[2] Despite the desire to publicly fund higher education, the limitations of current funding are apparent with Hillman (2015, 25) quoting the OECD Director for Education and Skills that 'European countries like France, Germany or Spain, too, say higher education is important, but their governments are neither willing to put in the required funds nor allowing universities to charge for tuition'. In Germany, the University Rectors believe that in the absence of tuition fees to supplement public funding, the current system is unsustainable (Hillman, 2015, p. 41).

The higher education system across the world is therefore is changing significantly, not only in response to constrained public finances, but also in response to the international mobility of students, greater sophistication of information and communication technologies and disruptions in technologies and markets that emphasise the importance of lifelong learning. The UK therefore represents a competitive context where increased privatisation (non-profit and increasingly, for-profit) is culminating in the marketisation of higher education. In a complex market with low elasticity of demand to student fees, and further, limited evidence of elasticity of demand to quality improvements as evidenced by improvements in student evaluations, our conceptual and analytical framework here, focuses on University's innovation through programme development.

Our analysis is based on data provided by the Universities and Colleges Admissions Service (UCAS), and draws on concepts from the study of innovation in commercial organisations. We make three main contributions. First, we develop a range of new quantitative indicators of programme introduction and withdrawal in HEIs and use these metrics to profile the main trends in UK HEIs' programme innovation and withdrawal over the last decade. Second, we use panel data econometric techniques to examine the impact of financial performance, international engagement and business engagement on programme introduction and withdrawal across the UK higher education sector. Each turns out to play a significant role in shaping some aspects of HEIs' undergraduate programme portfolios.

The remainder of the paper is organised as follows. Section 2 provides a brief overview of the context for our study and the increasing marketisation of UK higher education. Section 3 outlines our conceptual framework and hypotheses. Section 4 describes our data which covers the period 2005–2013 and draws on information provided by UCAS and the Higher Education Statistics Agency (HESA). Sections 5 and 6 report our empirical analysis and Section 7 considers some of the strategic and systemic implications of the findings. Our focus here is solely on undergraduate programmes which accounted for three-quarters of all registered students in UK Universities in 2013–14. Undergraduate registrations also increased over the study period by 24% in contrast to a smaller 8.4% increase in postgraduate taught programmes (Universities UK, 2015).

[2] There are a small number of private higher education providers in Germany and while these universities charge fees, the rate is low and they account for less than 5% of all students (Hillman, 2015).

2. Policy context

The full marketisation of higher education would require little or no regulation of market entry by higher education providers, no regulatory limits on fees or numbers of students enrolled, that the cost of teaching was met through fees (as opposed to a combination of fees and grants), and that users would decide what, where and how to study on the basis of information about the price, quality and availability of relevant programmes and providers (Brown, 2014). While in many countries e.g. UK, Australia, New Zealand and parts of Canada, there has been a move towards such marketisation, this has been partial, displaying some of these dimensions. In the UK the shift towards the marketisation of higher education has been significant including an 80% reduction in direct public funding of university teaching, increased price competition, and the introduction of regulatory changes permitting market entry of new providers of undergraduate degrees. These changes have been justified on the basis of growing national current account deficits and a philosophical shift from state to individual-responsibility. This has led to a shift from teaching grants to repayable student loans, ensuring a revenue stream for universities to provide undergraduate education coupled with greater emphasis on the student experience. Changes have been made despite a lack of empirical evidence of any positive effect of a marketized model on student learning outcomes (Taylor and Judson, 2011).

The increased marketisation of higher education in the UK has to be seen in its political context. In the mid-1990s, with a Conservative government in power and spending on education at an historic low, a review of higher education funding was undertaken, chaired by Lord Dearing, 'Higher Education in a Learning Society' (HMSO, 1997). One of the central tenets of Conservative policy was to shift the burden of higher education funding from taxation to students. The Labour government (in power from 1997 until 2010) adopted the recommendations of the Dearing review and student fees were introduced in 1998 representing approximately 25% of tutition cost. Fees were contingent on family income[3] and paid back at a later date by the graduate through an income-contingent mechanism (Lupton and Obolenskaya, 2013). This policy was resisted by both students and also Universities who claimed that the funding model was inadequate.

The Labour government's aspiration to reform higher education is evident in the UK White Paper 'The Future of Higher Education' (2003, 22 January), and subsequent Higher Education Act (1 July 2004), which presented plans for radical reform and investment in the higher education sector. The Act consolidated both the recommendations of the earlier 1997 Dearing Report and the Prime Minister's Initiative of 1999[4] which stressed that the UK higher education sector needed to expand to meet rising skill needs, and be more closely aligned with the needs of business and the economy.[5] A participation target in higher education of 50% of 18–30 year olds was implemented and changes made to student fees. From 1998,[6] a maximum fee remission grant had existed, however, the 2004 Higher Education Act enabled HEIs to determine their own tuition fees up to a cap of £3000 pa.

In 2010, following the economic crisis a Conservative-Liberal Democrat coalition government came to power. Policy again, as in the pre-Labour government era (1997–2010), emphasised public sector spending cuts to higher education and a move away from a government

[3] Approximately 40% of students from families in the lowest income band did not pay fees, students in the next income band paid £500 and the remainder paid £1000 per annum (Lupton and Obolenskaya, 2013).

[4] The 1999 Prime Minister's Initiative (PMI) funded projects targeted at increasing enrolments in both HE and FE. Other countries were undertaking similar investments (e.g. Nuffic Netherlands, AEI Australia, Education New Zealand, Campus France, DAAD Germany, Education USA).

[5] At the same time, there was recognition of significant underinvestment in teaching and research compared to international comparators and that participation in higher education needed to expand.

[6] Teaching and Higher Education Act 1998.