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One system or four? Cross-border applications and entries to full-time undergraduate courses in the UK since devolution

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Abstract

This paper uses UCAS data on applications and entries to full-time undergraduate courses to examine the changing flows of students across the boundaries of the four countries of the United Kingdom (UK), over a period (1996–2010) that embraces parliamentary devolution. It asks whether the emergence of more distinct *administrative* systems of higher education, following devolution, is reflected in more distinct *social* systems as reflected in reduced cross-border flows of students. It reveals a declining tendency for UK applicants to apply to, and enter, higher education in another home country. This trend is partly attributable to devolution and to consequent changes such as differential fees. However the detailed patterns vary widely across the countries of the UK, across categories of student and across types of institution and programme.

Introduction

Higher education in Wales, and universities in Scotland, have been administered separately from the rest of the United Kingdom (UK) since 1992; higher education in Northern Ireland and non-university institutions in Scotland have been administered separately for much longer. In 1998–99 these separate arrangements were placed under the newly established Scottish Parliament and National Assembly for Wales and (subject to delays and suspensions) the power-sharing Northern Ireland Assembly. The impact of this parliamentary devolution was evident after 2010 when the Browne Review (2010) recommended a large increase in student fees and a market-led approach to the funding and governance of higher education in England. The devolved administrations rejected this new policy direction, but their reactions to Browne illustrated the complex relations of independence and interdependence among the higher education systems of the UK (Gallacher and Raffè, 2012). Each devolved administration wanted its own domiciled students to avoid the increase in fees planned for England, but in doing so it had to anticipate possible changes in student flows into and out of its own territory and the impacts on the competitive strength of its institutions within the UK. It had to pursue its own priorities within parameters created by policies in England. The devolved administrations' responses drew attention to the continued interdependence of the four systems, reflected not only in the significant staff and student flows between them but also in common arrangements for admissions, infrastructural support and research funding, in UK-wide representative organisations for institution leaders, staff and students and in a shared UK 'brand' (Robertson, 2010). They raise the question of whether, rather than four systems going their separate ways, higher education in the UK continues to function as a single system.

The answer to this question depends on how a higher education system is defined. Writing when the prospects for parliamentary devolution were still uncertain, Rees and Istance (1997, p. 59) distinguished between higher education as an administrative system, reflected in separate governance arrangements generating distinctive policies, and higher education as a social system, a 'set of social processes framed by the administrative system'. Welsh higher education had recently become a more distinct administrative system but this did not necessarily change its relationships to the Welsh social structure as exemplified by its economic or cultural functions or patterns of participation. Welsh higher education remained part of an integrated social system of recruitment and participation that embraced both England and Wales. Nearly a decade later Rees and Taylor (2006) suggested that the early years of parliamentary devolution had seen the partial re-emergence of Welsh higher education as a social system, reflected in a growing tendency for Welsh students to study in Wales and for students in Welsh institutions to be Welsh-domiciled.

The broad question posed by Rees and colleagues, and that is addressed in this paper, is: to what extent has the (re-)emergence of more distinct administrative systems of higher education in the home countries led to their (re-)emergence as more distinct social systems? Distinctiveness is defined here in terms of the strength of the boundaries between systems, as indicated by the flows of students across those boundaries, rather than the similarities and

differences between systems (Filippakou *et al.*, 2012). The paper addresses three sets of questions. First, to what extent does higher education in England, Wales, Northern Ireland and Scotland comprise one social system or up to four distinct systems, as defined by their patterns of entry and recruitment, and specifically by the propensity of applicants to apply to, and to enter, institutions in a home country other than their own? Has this changed since the 1990s? Second, how does this vary in relation to the characteristics of students and of institutions? To what extent does a UK-wide social system of higher education survive amongst advantaged students seeking places in ‘research-intensive’ universities, while other students and institutions inhabit systems whose boundaries are the home country or region? Third, can any changes in social systems be attributed to changes in administrative systems and in particular to devolution? Conversely, can they be attributed to changes in the societal context, such as a general trend towards studying closer to home?

Similar questions may be posed in relation to other federal or quasi-federal countries where higher education is the responsibility of state or provincial governments. The extent to which students study in their own state or in other states varies widely across these countries. The authors are aware of no overview of this type of student mobility, although it would appear to be related to features of administrative systems such as fee regimes and admissions arrangements (Braun and Dwenger, 2009).

Universities and Colleges Admissions Service data

The questions posed above are addressed using data on applications through the Universities and Colleges Admissions Service (UCAS) to full-time undergraduate programmes in the UK in 1996, 2000, 2004, 2006, 2008 and 2010. Established in 1993, UCAS provides a centralised admissions system that covers most full-time undergraduate courses in the UK. Each applicant in each annual cycle can make up to five applications (formerly six), each of which receives an unconditional offer, an offer conditional on qualifications to be achieved or a rejection. Applicants with no offers may make further applications. When applicants’ qualifications are known, those still without a place may enter a clearing stage and compete for courses with unfilled places.

This process generates data on the qualifications, social and demographic backgrounds and domiciles of applicants and on the institution, subject and level of the courses to which they applied. It also provides details of the outcome of each application and therefore enables us to identify entrants to higher education and the courses that they entered, although these include some whose formal acceptances were not followed through to actual entry and some who deferred entry. These data constitute a rich resource for research with few equivalents in other countries. Nevertheless, like other administrative data they present issues when used for research purposes (Gorard *et al.*, 2007; Hoelscher and Hayward, 2008). Researchers, and UCAS itself, express caution about the personal and demographic data, notably on social class (Harrison *et al.*, 2011), although as seen below these data have face validity. As a UK-wide admissions service UCAS is itself a reflection of the extent to which the UK has an integrated social system of higher education; Osborne (1996) credits its predecessor, the

Universities Central Council on Admissions, with encouraging Northern Ireland institutions to focus on UK rather than Irish recruitment. UCAS tends to cover the types of programmes that recruit across the UK and to exclude those that do not. It covers the vast majority of applications to full-time undergraduate courses in higher education institutions. However, it does not cover part-time courses and it covers relatively few courses in colleges of further education. Colleges are important providers of higher education in Scotland (Gallacher, 2009) and since the Dearing Report of 1997 they have been central to government policies for expansion in England and, to a lesser extent, in Wales and Northern Ireland, although their actual share of provision has not increased substantially (Parry, 2009). In order to have a clearly defined population the following analyses are restricted to applicants, applications and entrants to higher education institutions. They thus exclude 2% of UCAS applicants who applied only to further education colleges and they disregard the college applications of a further 5% who applied both to colleges and to universities. The analyses also exclude a further 2% of UK-domiciled entrants who were accepted directly by higher education institutions, whose data on qualifications and social and demographic backgrounds are largely missing.

The administrative systems of higher education in the four home countries

For much of the twentieth century, up to 1992, the administrative system of higher education in Wales was largely integrated within an ‘England and Wales’ system (Rees and Istance, 1997; Evans and Roderick, 2003; Fitz, 2007). Higher education in Northern Ireland had been part of an all-Ireland system before the partition of Ireland; it was then devolved to the Stormont Parliament until its suspension in 1972. Nevertheless, this did not prevent education policy before and after 1972 being driven by an ‘almost slavish desire to keep in step with England and Wales’ (Osborne, 1996, p. 156). Scotland has the longest history as a separate administrative system of higher education, with distinct traditions of organisation and governance. However, some of these differences, and especially its distinctive ethos and values, were eroded during the post-war period when it was part of a UK-wide system (Paterson, 2003; Gallacher, 2007).

The four higher education systems articulate with systems of secondary education that vary in their distinctiveness. Scotland’s four-year honours degree has traditionally followed a secondary education based on broader but shorter programmes of study, with an earlier transition to university (Gray *et al.*, 1983). Most Scottish school-leavers who apply to university do so on the basis of different upper-secondary qualifications than those held by school-leavers from elsewhere in the UK. Many college sub-degree programmes articulate with degrees and provide alternative routes to university. These distinctive pathways may encourage Scots to apply to Scottish institutions. The distinctive features of the other home countries’ school systems, such as Northern Ireland’s selective system, have fewer implications for the choice between study in the home country and in the rest of the UK. However, the development of separate national curricula since the 1990s, and the home countries’ different policies regarding diversity of institutions and qualifications, may have strengthened the links between secondary and higher education within each country. For

example, the Welsh Baccalaureate and 14–19 Learning Pathways may have encouraged more Welsh school leavers to apply to Welsh institutions.

Parliamentary devolution has resulted in differentials in tuition fees and student support, with consequent incentives to study in the home country. In 2000, the Scottish Executive abolished up-front tuition fees, introduced across the UK two years earlier, in favour of a smaller income-contingent charge to be paid after graduation; this charge was abolished in 2007. Scots entering higher education elsewhere in the UK continued to pay the up-front fees. In 2006, England and Northern Ireland raised the maximum fee, initially to £3000 per annum, with payment deferred until after graduation. Wales did the same one year later. Scottish-domiciled applicants therefore faced an increasing incentive to enter Scottish institutions rather than other UK institutions. (This was less true of students from other UK countries, who were charged fees by Scottish institutions.) There was a similar but temporary incentive for Welsh students: following the fee increase in England in 2006, fees were raised to the same levels in Wales in 2007 but the increase was balanced by an increase in the support available to Welsh-domiciled students who attended Welsh institutions. This additional support was withdrawn in 2010, removing the financial incentive for Welsh students to study in Wales. This study covers the period from 2010; since then another increase in fees in England, to a maximum of £9,000 in 2012, has led to further changes in fees and student support across the UK, with likely further impacts on the trends described in this paper.

Students may be encouraged to remain in the home country by other policies of the devolved administrations, such as widening participation measures that target groups more likely to study near to home, measures to make higher education more responsive to local labour-market needs or measures to balance the supply and demand for places. The supply of places in Northern Ireland has failed to match the local demand, forcing many less-qualified applicants to seek places elsewhere. This under-supply was alleviated between 1996 and 2004 when the number of places in Northern Ireland institutions, as measured by the number of entrants through UCAS to full-time undergraduate courses, rose by 58% (70% for UK-domiciled entrants) compared with 26% in England and 17% in Wales and Scotland. Over the following six years, from 2004 to 2010, the supply of places in the territory levelled off: entrants to Northern Ireland institutions increased by only 2%, compared with 30% in England, 22% in Wales and 18% in Scotland. Places expanded fastest in England, where the UK government had set a target, in 1999, to increase participation to 50% of the age group by 2010. The Scottish and Welsh governments did not set similar targets for expansion (Bruce, 2012).

The capacity of a country's higher education to function as a social system depends on its absolute scale as well as its scale relative to demand. Between 1996 and 2010 the number of separate higher education institutions that admitted at least 30 entrants through UCAS fell from 130 to 127 in England, from 15 to 12 in Wales and from 19 to 18 in Scotland and rose from 2 to 4 in Northern Ireland. UCAS allows up to five initial applications (six before 2008); to the extent that applicants choose five higher education institutions (as opposed to

colleges, some of which recruit through UCAS), a small system such as Northern Ireland with fewer than five such institutions will inevitably function as part of a wider UK recruitment system.

For all these reasons the emergence of more distinct administrative systems of higher education may have led them to become more distinct social systems, as reflected in patterns of recruitment. However, trends in the societal context may also have had an effect. During the 1990s and 2000s people in England, Wales and Scotland have increasingly seen themselves as primarily English, Welsh or Scottish rather than as primarily British, although a majority accept both types of identity (Paterson, 2002; Bechhofer and McCrone, 2008). The implications of this trend are uncertain (identity is not, for example, closely linked with views on Scottish independence) but it might lead more people to apply to institutions within the home country rather than in a part of the UK with which they identify less closely. In many parts of the UK, notably Scotland, there is a tradition of attending university near to home, although this had earlier been declining (Paterson, 1993). There has been a more recent trend, at least within England, for students to choose institutions within the home region (Holdsworth, 2009). A decline in applications to other home countries might simply reflect this growing regionalism rather any ‘national’ effect. There has been a countervailing trend for more students, especially the most qualified, to study abroad (Findlay *et al.*, 2010). However, the number of students is relatively small (probably fewer than 2% of UK-domiciled students) and the factors underlying this trend could either reduce the number of students choosing to study in another UK country (if the same students are looking further afield) or increase it (if other countries of the UK are increasingly perceived as ‘foreign’).

[Tables 1 and 2]

Cross-border patterns of application and entry

In 2010, virtually all English-domiciled applicants applied to at least one institution within England; 9% applied to at least one institution in Wales, fewer than 1% to Northern Ireland and 7% to Scotland (Table 1). Smaller proportions of English-domiciled applicants entered institutions in these countries: 3% entered institutions in Wales, 0.1% in Northern Ireland and 1% in Scotland (Table 2). These proportions had declined since 1996, although much of the decline in applications to other UK countries coincided with the reduction in the number of choices allowed by UCAS, from six to five, between 2006 and 2008.

The proportions of Welsh-domiciled applicants applying to, and entering, UK institutions outside Wales declined steadily after 1996 to a low point in 2006 and 2008, when it was more expensive for Welsh students to study at English than Welsh institutions. In 2010, when the grant that sustained this differential was withdrawn, there was a slight reversal of the trend (more recent UCAS data show that this upswing in applications outside Wales continued in 2011 and 2012). Most Welsh applications and entries to UK institutions outside Wales were to English institutions.

In Northern Ireland the proportion of applicants and entrants to institutions elsewhere in the UK fell between 1996 and 2004, encouraged by the expansion of places in Northern Irish institutions and by a decline in the competition for places from applicants in the Republic. The expansion of places within Northern Ireland levelled off after 2004 and the proportions of Northern Irish applications and entries to English and Welsh institutions began to rise again while the proportions applying to Scottish institutions continued to fall. At the beginning of the period Scotland closely followed England as the chosen destination of applicants and entrants from Northern Ireland to institutions elsewhere in the UK; by 2010, many more students from Northern Ireland studied in England (24%) than Scotland (8%). This relative divergence of the social systems of higher education in Northern Ireland and Scotland may have reflected a divergence of their administrative systems: policies in Northern Ireland followed English trends more closely than Scottish trends during this period (Osborne, 1996, 2007).

The proportion of applicants applying outside their home country declined most steeply in Scotland, especially in the early part of the period when the abolition of up-front fees provided a new incentive to remain within Scotland. However, the proportion of Scots remaining within Scotland to study had already approached saturation point in 1996, when it was 92%; it increased only marginally to 94% by 2010.

Inflow perspective

Applicants from Wales and Northern Ireland have continued to be much more likely to apply to institutions in other UK countries than those from England or Scotland. In this respect Wales and Northern Ireland have had the weakest claims, and England and Scotland the strongest claims, to be counted as distinct social systems of higher education. This conclusion is based on ‘outflow’ patterns: the choices and destinations of applicants domiciled in each country. ‘Inflow’ patterns, based on the propensities of institutions in each home country to attract applications and students from the rest of the UK, present a different picture. England and Northern Ireland now appear as the most distinct social systems of higher education, with fewer than 5% of applications or entrants in 2010 from the rest of the UK (Table 3). Wales is still the least distinct system, with more applications from the rest of the UK than from Wales itself and nearly as many entrants. Scotland lies between these two positions: in 2010 around one in five applications and one in nine entrants were from the rest of the UK, fewer than in Wales but considerably more than the corresponding ‘outflow’ proportions among Scottish-domiciled students.

[Table 3]

Institutions in England, Wales and Scotland all experienced a decline in the proportion of applications and entrants from other UK countries. This decline did not affect institutions in Northern Ireland, which already received only a few applicants and entrants from the rest of the UK; the decline affected Scottish institutions most of all, particularly with respect to entrants.

In England and Scotland the proportionate decline in applications and entries from other UK countries was matched by an increase in applications and entries from outside the UK. In England, these outnumbered applications and entries from the rest of the UK throughout the period, with a growth in the proportion from countries outside the European Union. In Scotland the proportions of applications and entries from other European Union states roughly doubled over the period, probably attracted by lower costs of study than in the rest of the UK. By 2010, non-UK countries accounted for about as many applications to Scottish institutions as other UK countries and for a considerably larger share of entries. In Wales non-UK applications and entrants grew slowly but were dwarfed by those from the rest of the UK. The trend in Northern Ireland is affected by the high proportion of 1996 applications (30%) and entries (13%) from the European Union. In the mid-1990s there was a substantial flow of students from the Republic of Ireland to the north (more than in the opposite direction: Osborne and Thanki, 2000). This declined after 1998 when fees were introduced in the UK. In 2000, the European Union accounted for only 12% of applications and 7% of entries to Northern Ireland institutions. These figures declined further by 2010 but applications and entries from other European Union states still considerably outnumbered those from the rest of the UK.

Applicants from other home countries accounted for 6% of UK applications to Russell Group universities in England, compared with 3% to other pre-1992 universities and 4% to post-1992 universities. Russell Group institutions also received the highest proportion of applications from other home countries to institutions in Wales, in Northern Ireland and in Scotland, although the actual proportions involved were considerably higher in Wales (69%) and Scotland (42%). Only 4% of UK applications and 3% of UK entrants to English post-1992 universities were from the rest of the UK. However, as the largest institutional sector in the largest country, English post-1992 universities had a much larger 'outflow' profile. They received applications from 42% of all Welsh applicants and 35% of all Northern Irish applicants to UK higher education institutions; and they were the destination of 18% of all Welsh entrants and 15% of all Northern Irish entrants to UK higher education institutions. Nearly half of all Welsh and Northern Irish students who entered institutions outside their home country entered English post-1992 universities.

In all countries medicine, dentistry and veterinary medicine attracted the highest proportions of applications from elsewhere in the UK. In Scottish and Northern Irish institutions arts subjects also attracted relatively large proportions of applications from other UK countries, but most other differences between subject areas were small.

The characteristics of cross-border applicants and entrants

Multivariate analyses are used to identify the links between applicants' social, demographic and educational characteristics and applications and entries to institutions in another home country. The analyses are restricted to under-21s, whose data are more complete and based on more consistent definitions. The first analysis uses logistic regression to predict the

probability of a 2010 applicant in each home country applying to an institution in a different home country (Table 4). The second predicts the probability of a 2010 entrant joining an institution in a different home country (Table 5). The analyses show the extent to which these probabilities were separately associated with gender, ethnicity, social class, prior qualifications and the subject applied for. A further analysis using OLS regression to predict the number of applications by each applicant to institutions in other home countries produces similar results to the first analysis.

[Table 4]

[Table 5]

Gender

Gender differences were small. Males in England were slightly more likely than comparable females, and in Northern Ireland slightly less likely, to make an application to (Table 4) and enter (Table 5) an institution in another UK country. In Wales slightly more males than females applied to institutions in another UK country but there was no gender difference in entries. There was no gender difference in Scotland.

Ethnicity

Asked to choose among eleven ethnic identities, 2% of applicants in Northern Ireland, 7% in Wales and Scotland and 24% in England reported an identity other than 'white'. Fewer English applicants from these visible ethnic minorities made applications to institutions in another UK country, and fewer entered institutions in another UK country, than comparable whites. Among applicants domiciled in Wales, Northern Ireland or Scotland, the opposite was true: more minority applicants than comparable whites applied to and entered institutions in another UK country. The biggest difference was in Scotland: 12% of Scottish minority entrants studied outside Scotland, compared with only 5% of whites.

Social class

Apart from the one-in-five who provided insufficient information for coding, applicants in the higher managerial and professional class (as defined by the National Statistics Socio-Economic Classification (Rose and O'Reilly, 1998)) were the most likely, and the working class the least likely, to apply to an institution in another UK country. There was a similar class difference in entries. Class differences were somewhat weaker among the English than other domiciles.

Qualifications

Qualification levels are expressed as quintiles (calculated separately within each country) of the UCAS tariff, a points score available for 84% of under-21s. Scottish and Northern Irish applicants in the top two quintiles (especially the top quintile) were most likely to make an application to institutions in another UK country (Table 4), while there was little difference between medium- and low-qualified applicants. Among English and Welsh applicants the association was linear: the higher the qualification quintile, the more likely to apply to

institutions in another UK country. The same was true for entry to an institution in another UK country among Welsh entrants (Table 5) and also among English entrants except for the top quintile, who were less likely to enter an institution in another UK country than all other quintiles except the lowest. It appears that many English high attainers applied to institutions in another UK country as fall-backs in case they were not accepted by their preferred English institutions. In Northern Ireland the relation between qualifications and entry to an institution in another UK country was U-shaped. Entrants in the top quintile and the bottom two quintiles were the most likely to enter institutions outside Northern Ireland. This is consistent with earlier research that identified a group of (often well-qualified) ‘determined leavers’ who studied elsewhere in the UK by choice and another group of ‘reluctant leavers’ who did not have the high qualification levels needed to enter institutions in Northern Ireland (Gallagher *et al.*, 1999; Cormack *et al.*, 2006). There was a similar U-curve among Scottish-domiciled students.

Main subject

Applicants for medicine, dentistry and veterinary medicine were particularly likely to make an application to institutions in another UK country and (except for Scots) to enter an institution in another UK country. A preference for arts subjects was also associated with applications and entries to institutions in another UK country. The association with other subjects varied across countries. For example, Northern Irish and Welsh applicants for subjects ancillary to medicine were particularly likely to study elsewhere but the opposite was true for Scottish-domiciled applicants for these subjects.

Changes over time

The characteristics of young people who applied to and entered institutions in another UK country changed relatively little between 1996 and 2010. Despite changes in social and educational classifications, analyses of applications and entries to institutions in another UK country in 1996 show very similar patterns to those reported above for 2010. There were only three significant changes: the tendency for more ethnic-minority Scots than white Scots to apply outside Scotland grew stronger; the relation between qualifications and applications to institutions in another UK country also became stronger, especially in England; and there was a stronger tendency in the later cohort for Welsh and Northern Irish entrants to institutions in another UK country to be highly qualified.

[Table 6]

The impact of fee differentials on social inequalities in higher education can be tested by comparing data for Welsh students in 2006 and 2008, when they could study more cheaply in Welsh institutions than in most institutions in other UK countries, with 2004 and 2010 when they faced similar fee levels throughout the UK. Rees and Taylor (2006) speculated that the cost differential might encourage more middle-class students to study at Welsh institutions where they would displace working-class students. Alternatively, it might deter more working-class than middle-class students from applying to non-Welsh institutions and

increase social inequalities in study within and outside Wales. Either way, the effect might be reversed in 2010. The UCAS data for 2004–2010 provide a test of these speculations (Table 6). The cost differential introduced from 2006 did not change the propensity of working-class learners to apply for higher education: they increased slightly as a proportion of all Welsh-domiciled applicants. There was a fall in the proportion of all Welsh applicants who applied to non-Welsh institutions and this fall was slightly greater among working-class than middle-class applicants. However, the class differential in the proportion *entering* a non-Welsh institution narrowed in 2006 and 2008: the cost differential appears to have deterred more middle-class than working-class entrants from studying outside Wales. The overall success rate (the chance of an applicant entering higher education) fluctuated over the period; the difference between middle- and working-class success rates increased by one percentage point in 2006 and 2008 and fell back again in 2010. However, there was no net displacement effect; working-class students increased as a proportion of Welsh-domiciled students both in Welsh and in non-Welsh institutions. In conclusion, changing fee differentials had a clear impact on the choices and behaviours of Welsh domiciles but they did not increase educational inequalities.

Countries or regions?

The tendency to apply to and enter higher education within the home country is stronger than the general preference for studying close to home. There are three pieces of evidence to support this conclusion.

First, the proportions of applicants and entrants to institutions in another UK country are smaller, and have declined faster, than the proportions of English applicants and entrants choosing institutions outside their home region. In 2010, two-thirds of students from Wales and Northern Ireland, and the vast majority from England and Scotland, entered institutions within their home country compared with fewer than half of English-domiciled entrants who studied within their home region. In 1996, 73% of Welsh applicants applied to UK institutions outside Wales, nearly as many as the 80% of English applicants who applied to institutions outside their home region. By 2008, these percentages had fallen to 56% and 74% respectively, leaving a much wider gap between them.

The second piece of evidence comes from multivariate analyses of the propensity to apply to, or enter, institutions outside one's home region. In each analysis a single model is estimated for the whole UK: 'dummy variables' are included for Wales, Northern Ireland and Scotland and for each region of England. The analyses thus provide estimates of the 'effect' of domicile in each region or country on the probability of application or entry to higher education outside the region or country, controlling for personal characteristics. Without exception, the 'effects' for the other three home countries are smaller than those for any of the English regions (Table 7). The third piece of evidence is an elaboration of the same analyses to include the interactions between region or country and other predictor variables such as social class, gender and qualifications (table not shown). The factors associated with applying outside the home country tend to differ from those associated with applying outside

the home region of England. For example, the association between qualification levels and applying (or entering) away from home is U-shaped in Northern Ireland and Scotland (as discussed above) but not in the English regions.

[Table 7]

The home-country effect is therefore both stronger than, and qualitatively different from, the home-region effect. On both criteria, the home country that behaves most like an English region is Wales and the English region that behaves most like a home country is the North East.

Conclusion: one system or four?

This paper set out to address three questions. The first was: to what extent does higher education in England, Wales, Northern Ireland and Scotland comprise four distinct social systems, as defined by their patterns of application and entry? Across the UK, a majority of learners apply to, and enter, higher education institutions within their own home country. More apply to courses in another UK country than actually enter them and applications within the home country are more likely to result in entry, suggesting that many applications to institutions in another UK country are either aspirational or fall-back options. Across the UK, there has been a clear trend for applications and entries to institutions in another UK country to decline and for home-country applications to increase, as a proportion of the total.

Higher education in England has the strongest claim to be described as a distinct social system, although this reflects its relative size rather than the impermeability of its boundaries. Only a small minority of English applicants have applied to institutions in another UK country and an even smaller minority of English entrants have entered them. England has been the principal destination for students leaving the three other home countries, having displaced Scotland as the first choice of many Northern Ireland students. However, students from Scotland, Wales and Northern Ireland have accounted for a tiny proportion of all applicants to English institutions, easily outnumbered by those from the rest of the European Union or overseas.

Welsh higher education has the weakest claim to be a separate social system but it has moved in that direction. The proportions of applications and entries to institutions in another UK country by Welsh-domiciled learners, and of applications and entries to Welsh institutions from students in other UK countries, all declined significantly over the period. By 2010, a majority of Welsh students applied to, and two-thirds of the successful ones entered, Welsh institutions. However, Wales is a net importer of students; in 2010 it still received more applications from the rest of the UK than from Wales and Welsh-domiciled entrants were still outnumbered by non-Welsh entrants to Welsh institutions.

Northern Ireland is a net exporter of students and its ability to function as a separate social system has been affected by supply constraints as well as its small scale. Between 1996 and

2004, when the supply of places in Northern Ireland increased faster than elsewhere in the UK, the proportions of applications and entries by Northern Ireland-domiciled learners to other United Kingdom institutions fell substantially. They stopped falling after 2004, when the number of places reached a plateau. Supply constraints are further reflected in the high proportions of less-qualified learners who applied outside Northern Ireland and in the high proportion of these applicants who accepted places in institutions in another UK country, suggesting that many were unable to find places at home. Northern Ireland institutions received relatively few applicants or entrants from another UK country.

Scots have been less likely even than English applicants to apply to institutions in another UK country, although they have been slightly more likely to enter one. They have shared in the general trend towards home-country study although Scotland, like England, was already close to saturation point in 1996. However, there have been many more applications and entries from other UK countries to Scottish institutions than flows in the opposite direction. Scotland is a net importer of students although its focus of recruitment has shifted from the UK to Europe and beyond. In 1996, more than twice as many undergraduates from other UK countries as from outside the UK entered Scottish institutions; by 2010 this position had almost been reversed.

The second question was whether the strength of system boundaries varied in relation to students' social, ethnic and educational backgrounds and the status hierarchy of institutions. Applicants and entrants from other UK countries have tended to be well-qualified and middle-class and to apply to study medicine, dentistry or veterinary medicine, or arts subjects, at a Russell Group university. However, there have been variations around these general patterns. A significant proportion of Welsh and Northern Irish applicants and entrants to English institutions choose post-1992 universities. The correlation between qualification levels and applications to institutions in another UK country is not always reflected in actual entry. In England the highest qualification group are the most likely to apply to an institution in another UK country but not the most likely to enter one. In Northern Ireland (and Scotland) the lowest qualification group have been most likely to enter institutions in another UK country, victims of the local shortage of places. English ethnic minorities have been less likely than whites to apply to and enter institutions in another UK country, whereas ethnic minorities from Wales, Northern Ireland or Scotland have been more likely to do so. Therefore, the picture of a two-tier structure in which advantaged students and elite universities inhabit a UK-wide system and other students and institutions inhabit more narrowly bounded systems is not supported by the evidence. The real pattern is complicated by the intersecting influences of ethnicity, subject preferences and the balance of supply and demand.

The final question asked whether any changes could be attributed to changes in administrative systems and in particular to devolution. There is clearly a link. The social systems of higher education became more distinct over a period when devolution took hold and the administrative systems themselves diverged. Of the three devolved systems Scotland,

with the most distinctive administrative system, has been the most self-contained (at least on the basis of student outflows). Northern Irish students increasingly chose English rather than Scottish institutions at a time when the administrative system of Northern Ireland followed that of England rather than Scotland. The trend towards home-country study has been stronger than the trend towards home-region study in England, reflecting the fact that the divergence of administrative systems following devolution has not (directly) affected the English regions. In some cases devolution has led to differences in the costs of attending higher education in one's own or another home country. Such differences boosted home-country study in Wales in the 2006 and 2008 cohorts and they probably contributed to the decline in applications to other UK countries by Scottish-domiciled learners; it is also possible that the decline in applications from England, Wales and Northern Ireland to Scottish institutions was influenced by the perception that students from the rest of the UK were treated differently to Scottish-domiciled students. However, fees are not the whole story: the Welsh differential was reversed in 2010 but patterns of application and entry did not revert to the 1996 position. Nor can the changes be explained simply by supply and demand. The number of higher education places expanded faster in England (the main destination of applicants and entrants from other UK countries) than in the other home countries but this did not result in an increased flow of applicants and entrants to English institutions from other UK countries. However, the experience of Northern Ireland suggests that had supply and demand been better balanced the decline in applications and entries to institutions outside Northern Ireland would have been even steeper.

To conclude: there has been a tendency for discrete social systems of higher education to re-emerge, or become more distinctive, and devolution has contributed towards this. The trends have been partial and uneven and they have varied across the four home countries. The four systems continue in complex relations of interdependence and, perhaps more importantly, of dependence. For the issue that underlies all the foregoing analysis is the overwhelming scale of English higher education relative to the three devolved systems. Except for the shrinking flow of students from Northern Ireland to Scotland, the cross-border applications and entries discussed in this paper nearly all involve England and one other home country. The higher education systems of Wales, Northern Ireland and Scotland may have become a little more distinct but they are still heavily dependent on their giant neighbour.

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Table 1: Country of institutions applied to, by cohort and domicile (percent of applicants)

Domicile	Applied to:	cohort					
		1996	2000	2004	2006	2008	2010
England	England	100	100	100	100	100	100
	Wales	13	12	12	12	9	9
	Northern Ireland	0.5	0.3	0.3	0.3	0.3	0.3
	Scotland	9	8	8	9	7	7
	N (=100%)	294932	310401	327459	344709	408433	476519
Wales	England	73	69	65	59	56	61
	Wales	74	76	80	85	85	83
	Northern Ireland	0.4	0.2	0.3	0.2	0.3	0.3
	Scotland	5	4	5	5	4	4
	N (=100%)	17305	17843	18806	20868	22071	24352
Northern Ireland	England	53	48	47	50	53	53
	Wales	7	6	4	6	5	5
	Northern Ireland	85	85	87	88	86	86
	Scotland	46	40	33	34	30	30
	N (=100%)	14481	15091	16950	17203	17016	19525
Scotland	England	22	20	14	15	13	12
	Wales	2	2	1	1	1	1
	Northern Ireland	1	1	0.5	0.4	0.4	0.4
	Scotland	97	96	97	97	97	98
	N (=100%)	31967	33685	36481	35085	37568	45925

Note: percentages total more than 100 because each applicant could make multiple applications

Table 2: Country of institution entered, by cohort and domicile (percent of entrants)

Domicile	Entered HE in:	cohort					
		1996	2000	2004	2006	2008	2010
England	England	94	95	95	96	96	96
	Wales	4	3	3	3	3	3
	Northern Ireland	0.1	0.0	0.0	0.0	0.1	0.1
	Scotland	2	2	2	1	1	1
	All	100	100	100	100	100	100
	N (=100%)	216676	244752	264947	276857	329859	338955
Wales	England	45	42	38	32	30	34
	Wales	54	57	61	67	70	65
	Northern Ireland	0.0	0.0	0.0	0.0	0.1	0.0
	Scotland	1	1	1	1	1	1
	All	100	100	100	100	100	100
	N (=100%)	13213	14455	15604	16712	18103	18150
Northern Ireland	England	24	19	22	24	24	25
	Wales	1	1	1	1	1	1
	Northern Ireland	56	67	68	65	67	66
	Scotland	18	12	10	10	8	8
	All	100	100	100	100	100	100
	N (=100%)	8958	10758	12822	12342	13371	13419
Scotland	England	8	8	6	6	6	5
	Wales	0.3	0.3	0.2	0.2	0.2	0.2
	Northern Ireland	0.1	0.1	0.1	0.0	0.1	0.1
	Scotland	92	92	94	93	94	94
	All	100	100	100	100	100	100
	N (=100%)	24088	27114	28126	26675	29275	32091

**Table 3: Domicile of applicants/entrants, by country of institution, 1996 and 2010
(percent of applications/entrants to institutions in each country)**

Location of institution	Domicile	Applications		Entrants	
		1996	2010	1996	2010
England	England	83	81	86	84
	<i>England: same region</i>	29	36	38	42
	Wales	3	2	3	2
	Northern Ireland	1	1	1	1
	Scotland	1	1	1	0.4
	EU	6	6	5	5
	other non-UK	6	9	5	8
	All	100	100	100	100
	N (=100%)	1685423	2287735	236043	386123
Wales	England	53	45	49	42
	Wales	32	42	41	48
	Northern Ireland	1	1	1	1
	Scotland	1	0.4	0.4	0.2
	EU	8	5	5	4
	other non-UK	5	6	3	5
	All	100	100	100	100
	N (=100%)	92004	113607	17401	24787
Northern Ireland	England	2	3	2	2
	Wales	0.1	0.1	0.1	0.1
	Northern Ireland	65	87	83	91
	Scotland	1	0.4	0.3	0.2
	EU	30	8	13	6
	other non-UK	1	1	1	1
	All	100	100	100	100
	N (=100%)	65628	57082	6058	9751
Scotland	England	20	16	14	8
	Wales	1	0.5	0.3	0.2
	Northern Ireland	8	4	5	3
	Scotland	61	60	72	72
	EU	7	13	4	9
	other non-UK	5	7	4	8
	All	100	100	100	100
	N (=100%)	192477	257150	30591	42227

Table 4: Logistic regression to predict making any application to another UK country, by country of domicile (under-21 applicants in 2010)

	England			Wales			Northern Ireland			Scotland		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
male	0.10	.010	1.11	0.10	.038	1.10	-0.20	.038	0.82	0.03	.038	1.04
visible ethnic minority	-0.87	.014	0.42	0.52	.080	1.67	0.72	.159	2.05	0.98	.062	2.67
SEC: higher man & prof	0.29	.015	1.34	0.66	.068	1.94	0.32	.066	1.37	0.64	.059	1.90
SEC: lower man & prof	0.17	.014	1.18	0.18	.055	1.20	0.18	.051	1.20	0.21	.059	1.23
SEC: working class	-0.17	.017	0.84	-0.15	.054	0.86	-0.17	.051	0.85	-0.27	.070	0.76
SEC not known	0.03	.016	1.03	-0.17	.056	0.84	-0.04	.055	0.96	0.01	.065	1.01
quals: top quintile	0.32	.014	1.38	0.80	.075	2.23	0.76	.064	2.13	0.96	.057	2.61
quals: 2nd quintile	0.25	.014	1.28	0.36	.064	1.43	0.20	.057	1.23	0.15	.063	1.16
quals: 4th quintile	-0.30	.016	0.74	-0.32	.059	0.73	0.05	.056	1.05	0.00	.066	1.00
quals: bottom quintile	-0.73	.018	0.48	-0.76	.059	0.47	0.04	.057	1.04	0.10	.065	1.11
quals not known	-0.92	.017	0.40	-1.01	.063	0.37	0.04	.061	1.04	0.08	.095	1.08
main subject applied for:												
medicine, dentistry, vet	0.96	.023	2.60	1.70	.183	5.45	1.50	.139	4.48	0.97	.081	2.65
allied to medicine	0.35	.020	1.41	0.39	.069	1.48	1.04	.084	2.83	-0.21	.082	0.81
sciences	0.39	.014	1.47	0.10	.052	1.10	0.17	.059	1.19	-0.06	.059	0.95
engineering & technology	0.53	.022	1.70	0.25	.087	1.28	-0.10	.076	0.90	-0.04	.078	0.96
arts	0.48	.013	1.62	0.36	.052	1.43	0.56	.065	1.76	1.09	.053	2.99
no single main subject	0.06	.017	1.06	-0.23	.055	0.80	-0.47	.045	0.62	-0.11	.058	0.90
Constant	-1.63	.017	0.20	0.85	.067	2.34	0.50	.057	1.65	-2.72	.073	0.07
<i>N</i>	345549			17532			15671			31307		

Note: the reference category is female, white, intermediate-class, in the third qualifications quintile and applied to study social or business subjects. The Exp(B) column can be interpreted as an 'effect size' for each variable, holding constant the other variables, in the form of odds ratios (a value of 1.00 indicates no effect).

Table 5: Logistic regression to predict entry to an institution in another UK country, by country of domicile (under-21 entrants in 2010)

	England			Wales			Northern Ireland			Scotland		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
male	0.04	.019	1.04	0.05	.038	1.06	-0.18	.044	0.83	0.04	.062	1.04
visible ethnic minority	-1.12	.034	0.33	0.25	.074	1.28	0.89	.150	2.44	1.02	.098	2.76
SEC: higher man & prof	0.19	.030	1.21	0.48	.061	1.62	0.60	.069	1.81	0.56	.096	1.76
SEC: lower man & prof	0.10	.029	1.11	0.13	.055	1.14	0.21	.058	1.24	0.13	.098	1.14
SEC: working class	-0.22	.034	0.80	-0.24	.060	0.79	-0.20	.063	0.82	-0.41	.121	0.66
SEC not known	0.01	.032	1.01	-0.06	.060	0.94	0.17	.066	1.19	-0.01	.108	0.99
quals: top quintile	-0.24	.028	0.79	0.66	.060	1.94	0.33	.064	1.39	0.44	.088	1.56
quals: 2nd quintile	-0.01	.028	0.99	0.33	.058	1.39	-0.13	.065	0.88	-0.31	.101	0.74
quals: 4th quintile	-0.21	.031	0.81	-0.16	.062	0.85	0.33	.069	1.40	0.19	.103	1.22
quals: bottom quintile	-0.57	.037	0.57	-0.49	.069	0.61	0.39	.081	1.48	0.45	.109	1.58
quals not known	-0.62	.035	0.54	-0.30	.071	0.74	0.35	.074	1.42	-0.10	.153	0.91
main subject applied for:												
medicine, dentistry, vet	0.82	.047	2.28	0.95	.102	2.58	0.23	.093	1.25	0.13	.149	1.13
allied to medicine	0.07	.049	1.07	0.38	.076	1.47	0.47	.083	1.60	-0.73	.163	0.48
sciences	0.51	.027	1.66	0.07	.054	1.07	0.15	.065	1.16	-0.11	.094	0.89
engineering & technology	0.27	.046	1.30	0.43	.084	1.53	-0.37	.090	0.69	0.04	.120	1.04
arts	0.45	.027	1.58	0.41	.053	1.51	0.29	.070	1.34	1.25	.082	3.49
no single main subject	0.07	.036	1.07	0.02	.060	1.02	-0.66	.058	0.51	-0.29	.098	0.75
Constant	-2.98	.035	0.05	-0.83	.068	0.44	-0.76	.068	0.47	-3.31	.115	0.04
<i>N</i>	264880			14004			11153			22753		

Note: the reference category is female, white, intermediate-class, in the third qualifications quintile and applied to study social or business subjects. The Exp(B) column can be interpreted as an 'effect size' for each variable, holding constant the other variables, in the form of odds ratios (a value of 1.00 indicates no effect).

Table 6: Applications and entries to HE, by social class and cohort (Welsh domiciled under-21s with known social class, 2004-2010)

Year	2004	2006	2008	2010
Fee/grant differential for Welsh/non-Welsh study	No	Yes	Yes	No
Working class as percent of all applicants	24	26	28	27
Percent applied to non-Welsh institutions:				
% of middle class	80	75	71	76
% of working class	69	61	57	65
Percent entered non-Welsh institutions:				
% of middle class	49	41	38	43
% of working class	35	29	28	30
Overall success rate: middle class	87	86	87	81
working class	83	81	82	77
Working class as percent of all entrants	24	25	27	26
Working class as percent of all entrants to Welsh institutions	28	29	30	30
Working class as percent of all entrants to non-Welsh institutions	18	19	21	19
N (applicants)	12430	12576	12905	14266

Note. 'Middle class' includes professional and managerial and intermediate classes. An analysis which combines the intermediate class with the working class shows similar trends.

Table 7: Conditional odds of applying to/entering an institution outside the home region/country

Region/country of domicile	Applying	Entering
Eastern	2.42	2.20
South East	2.18	1.12
East Midlands	1.83	1.27
South West	1.53	0.99
West Midlands	1.06	1.24
Yorkshire & Humberside	0.85	0.73
North West	0.66	0.49
North East	0.65	0.50
Wales	0.44	0.39
Northern Ireland	0.35	0.33
Scotland	0.02	0.03

Note. The figures correspond to the Exp(B) columns of Tables 4 and 5, but are taken from analyses covering all UK countries with dummy variables for regions/countries. They show the 'effect' of domicile in each region/country on application/entry outside the home region/country for a white, intermediate-class female, in the third qualifications quintile, who applied to study social or business subjects. The effect is expressed as the odds ratio of applying/entering outside the home region/country compared with a comparable resident of London. A value of 1.00 indicates the same odds as a resident of London.