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Location, Location... Employment? Understanding Welsh Graduate Mobility Over Time

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Given the importance of human capital to economic performance, it is widely acknowledged that graduates play a key role in Wales' economic future. Historically however, Wales has been a net loser of graduates, often described as the 'brain drain'. This article sets out some of the key findings of research (see note at end) into the scale and nature of the problem, specifically the extent to which Wales retains its graduates in employment, and labour market outcomes for 'Welsh' (ie. Welsh-born) graduates in relation to their migration behaviour. This seeks to provide some useful insights for the future development of Higher Education and regional economic development policies.

Graduate Mobility and Employment

Existing research into the UK's geography of graduate labour highlights some key themes to aid understanding

of graduates' migration and employment decisions. First, the main result of human capital acquisition amongst graduates is that they are more able to gain higher quality employment in a much broader set of locations (Faggian et al, 2007). In turn, a region's ability to generate, retain and attract graduate workers is critically linked to the employment opportunities available. Secondly, patterns of graduate mobility are strongly connected to previous patterns of migration for education – if you have moved before, you are more likely to move again. Thirdly, it is increasingly clear that graduate mobility evolves over time. This carries important implications for 'loser' regions if they are able to attract graduate returnees at a later stage in their life cycle. Overall, therefore, graduate mobility over time is likely to be influenced by the complex and perhaps competing 'pull' forces of

places where graduates grew up or studied, as well as the powerful 'push' of career opportunities.

A Note on the Data

Previous studies have made much use of data produced by the Higher Education Statistics Agency (HESA), which provides excellent coverage of recent graduates in terms of their location and employment, but is limited as the data are collected just 6 months after graduation. Here we augment HESA data with data from the Labour Force (LFS) and Annual Population (APS) surveys, which are household surveys of the UK population. The LFS enables consideration of how graduate mobility and graduate careers evolve over time, focused on 'young' (aged 25 or below when graduated) graduates since the 1992 expansion of Higher Education. The APS adds values to the LFS analysis as it enables identification not only of

Table 1: Non-Student Population under Age 45 in Possession of a Degree/Higher Degree (%)

Country of birth	Region of residence					Migrant Summary		
	IRC	Rest of England	Wales	Scotland	N. Ireland	Non-Migrants	Migrants	Total
England	25.0	16.4	28.6	34.9	24.7	19.4	31.1	19.7
Wales	55.9	37.4	14.6	38.8	-	14.6	43.9	19.8
Scotland	48.9	28.5	27.5	15.6	22.8	15.6	35.7	18.4
N. Ireland	50.3	43.6	32.9	61.5	18.0	18.0	48.8	22.0
Total	25.8	16.8	17.7	18.1	18.3	18.9	36.4	19.7

Source: Labour Force Survey 2006-2010

Table 2: UK Migration among Post-1992 Young Graduates (%)

Country of birth	Region of residence					Migration Incidence (%)
	IRC	Rest of England	Wales	Scotland	N. Ireland	
England	44.8	51.9	1.6	1.6	0.1	3.3
Wales	17.5	19.6	61.9	1.0	0.0	38.1
Scotland	13.5	10.5	0.6	75.0	0.4	25.0
N. Ireland	7.6	11.1	0.4	7.4	73.5	26.5
Total	39.6	45.5	4.3	7.6	3.0	7.5

Source: Labour Force Survey 2006-2010

Welsh-born and Welsh-working graduates, but also those who have gained their highest degree in Wales. It also enables analysis of the UK's stock of Welsh-born graduates.

Graduate Mobility in Wales

Graduate mobility is a particularly pertinent issue for Wales given the relatively poor performance of the Welsh economy; the related desire to attract and retain graduates which is constrained by the range of employment opportunities available; the strong interconnections between Welsh and English Higher Education and labour markets; and the spatially variable changes being made to Higher Education policy and fees by the Westminster and devolved governments. Here we first look at the scale of graduate flows to and from Wales within the UK, and secondly at the 'quality' of employment amongst Welsh graduates, to inform understanding of how these flows of human capital are shaped.

Welsh-born graduates are particularly likely to migrate (Table 1). In Wales, 15% of those under the age of 45 who were born and live in Wales have a degree, compared to 44% of those who have migrated elsewhere in the UK. This 29 percentage point difference for Wales contrasts to a 20 point difference for Scotland and 12 for England. Within England, we differentiate between the Inner Region Core, or 'IRC', of London,

the South East and East regions, and the rest of England. This is because of the unique economic circumstances and opportunities for graduates that exist within the IRC.

Welsh Graduate Retention

Turning to our first key question, the extent to which Wales retains its graduate labour in employment, Table 2 shows that Wales has the lowest retention rate of the home nations. Some 38% of Welsh-born graduates reside elsewhere in the UK, a markedly lower retention rate (of 62%) than that of Scotland (75%) and Northern Ireland (74%). Over 95% of English-born graduates remain in England. However, as the LFS does not record information on region of birth we cannot compare the Welsh graduate retention rate with that of the English regions.

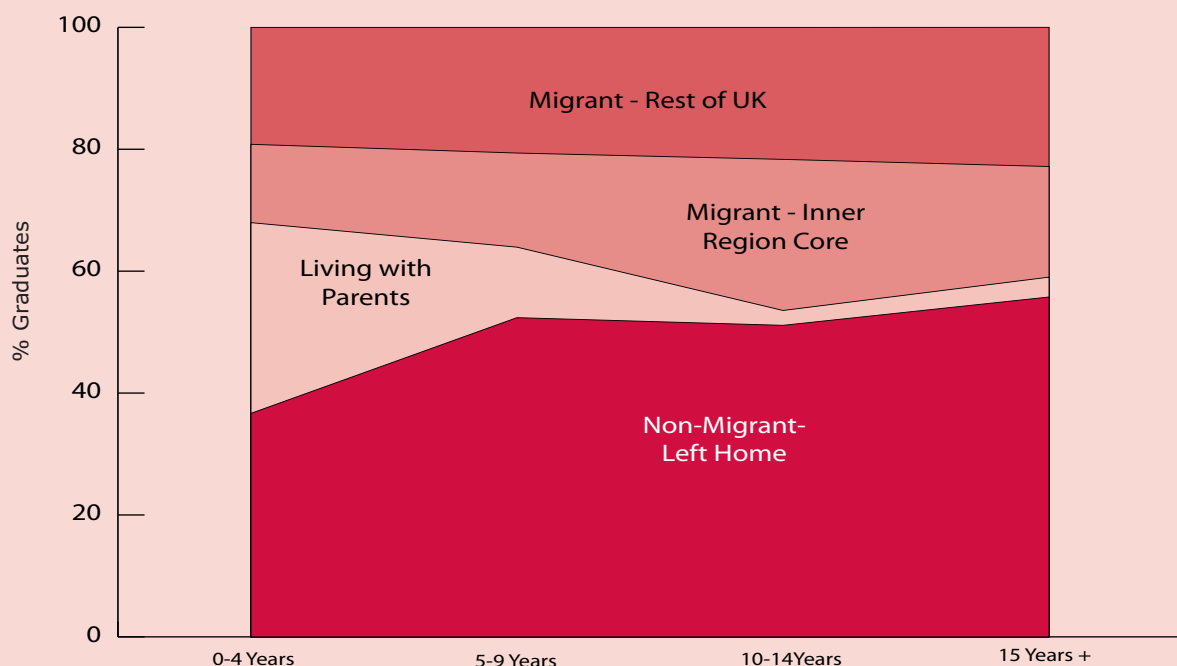
That Wales is a 'loser region' is not surprising given the extent to which it imports students to its universities from other parts of the UK, especially England. The latest HESA data for students in Higher Education (2009-10) show that 42% (or 25,000) undergraduates studying in Wales are English-domiciled. Interestingly, the post-1992 expansion of Higher Education has raised the proportion of Welsh-born students studying in Wales (revealed by analysis of the stock of Welsh-born graduates enabled by APS data). This has particularly been the case since the introduction of student

top-up fees in England in 2004, highlighting the significance of spatially variable changes in Higher Education fees to student choices about where to study.

In turn, while Wales is a 'loser region', with a net flow of graduates out of Wales, there is not an unequivocal 'brain drain'. Whilst Wales' retention rate of graduates is lower than the other home nations, analysis of 5 years of HESA first graduate destinations data show that it is higher (at 62%) than that observed among a majority of English regions (an English regional average of 56%), and is only exceeded by London and the North West (Mosca and Wright, 2010).

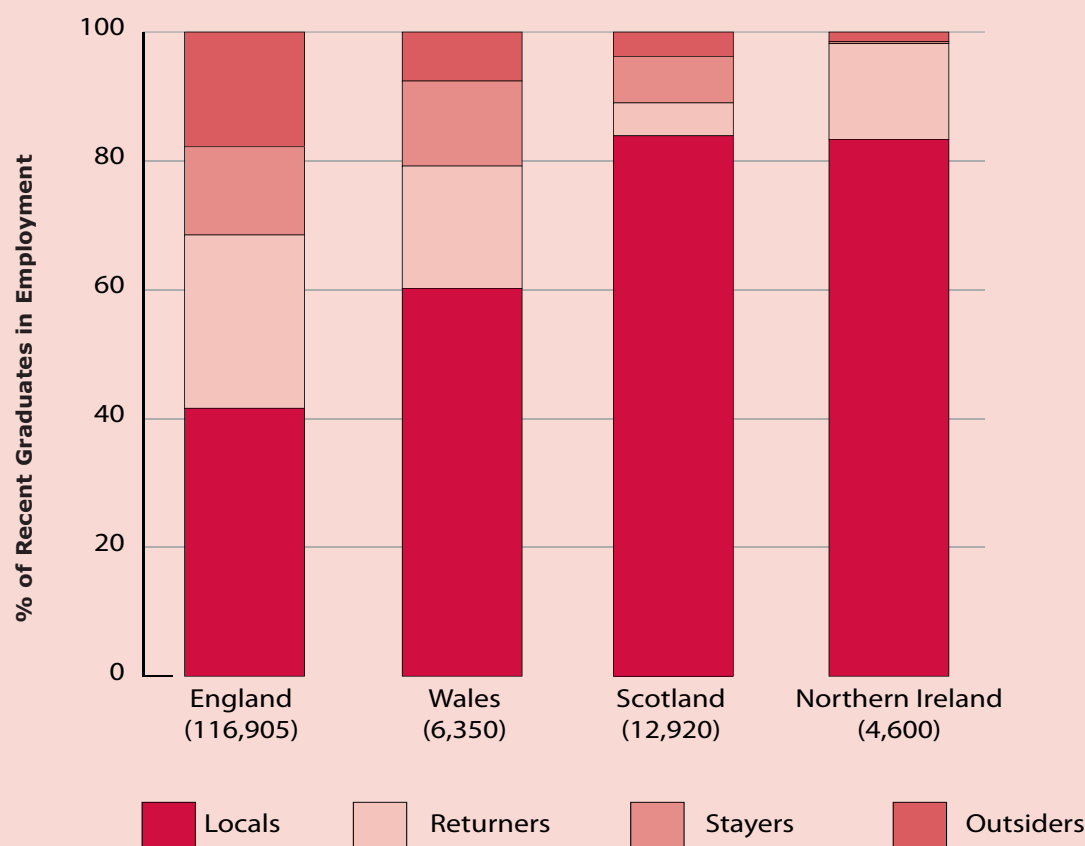
There is also some evidence of returners in the short-term (students returning home) and later in the graduate life-cycle. This highlights the importance of looking at graduate mobility for Welsh-born graduates over time. In Figure 1 we can see students returning home upon graduation. We can also see this group diminishing over time as they get their own home in Wales, or migrate elsewhere in the UK. In addition, about 15 years after graduation, we can see that some graduate migrants leave the IRC. This provides us with some evidence of 'returners' to Wales, likely associated with family formation, who may have developed valuable skills and networks.

Figure 1: Evolution of Graduate Mobility (Welsh-Born Graduates)



Source: Labour Force Survey 2006-2010

Figure 2: Graduate Pathways into Home Nation Labour Markets



Source: 'Graduate Mobility: who goes to work in each region' (2008) prepared by HECSU for Prospects.ac.uk, using HESA 'Destinations of Leavers from Higher Education' (DLHE) 2005/06.

The Pull of Home: Locals and Returners

HESA data provide useful insight regarding the geographic 'pathways' into regional labour markets, particularly pertinent given the large inflow of English students to study in Wales. Using HESA data, Hoare and Corver (2010) found that Wales is one of only four of the 12 'regions' (along with Scotland, Northern Ireland and the North East) which draws its largest

single volume of graduate recruits from the 'locals' pathway. This is confirmed by the analysis of HESA data shown in Figure 2 on a more recent cohort (2005/06) of graduates six months after graduation in (full-time, paid) employment. 'Locals', who are Welsh-born and studied in Wales, are the most significant source of graduate labour recruitment for Wales (at 60% of total employed graduates). 'Returners', the Welsh-born who studied (probably) in

England, and then returned home for employment, are the second most important source (at 19%). Finally, 'stayers', the non-Welsh born who came to Wales to study and stayed to work comprise 13%; and 'outsiders', who are working in Wales but have no prior connection through home or study, comprise only 8 per cent of graduates recruited. This demonstrates the 'pull of home' on graduate migration flows.

Table 3: Earnings and Occupations of Post-1992 Young Graduates by Sector of Employment

	Gross Weekly Earnings (£)			Non-Graduate Occupations (%)		
	Private	Public	All	Private	Public	All
IRC	651	530	616	19.9	16.1	18.9
Rest of England	531	499	518	27.7	17.3	23.8
Wales	469	507	487	33.5	18.5	26.7
Scotland	567	533	553	26.9	14.3	22.2
Northern Ireland	535	486	513	32.0	16.9	25.6
All	584	512	558	24.5	16.7	21.9

Source: Labour Force Survey 2006-2010

Welsh Graduate Labour Market Outcomes

We now turn to second key question regarding the labour market outcomes for Welsh-born graduates. We first consider where these graduates work in Wales by sector of employment before considering the consequences of migration for these graduates in terms of their labour market outcomes.

Public Sector as a Graduate Employer

While the public sector provides a source of relatively well-paid employment among graduates living within the UK's devolved regions, this is particularly the case in Wales. About half of post-1992 young graduates who were born and live in Wales are employed in the public sector. This compares to 38% for Scotland and 44% for Northern Ireland (these data are included in the second pane of Table 4). Indeed, the public sector is the main source of 'quality' employment for non-migrant graduates in Wales, where we define quality in terms of earnings and occupations.

As shown in Table 3, in terms of earnings, we found that Wales is the only home nation where average graduate earnings are higher in the public than in the private sector (with a differential of about £40 per week). In terms of occupations, we use Elias and Purcell's (2005) SOC(HE) classification

to distinguish between 'graduate' and 'non-graduate' jobs. A non-graduate job is defined as one where the skills, knowledge and experience associated with the competent performance of work tasks is less than that which would be expected to be held by a person who had successfully completed a degree. While the incidence of non-graduate employment is generally lower in the public than in the private sector, this is particularly the case in Wales, as shown in the right-hand pane of Table 3. Here 34% of post-1992 young graduates employed in the private sector are in non-graduate occupations, compared to 19% of those employed in the public sector. This 15 percentage point differential compares to a UK-wide differential of 8 percentage points, and 13 points for Scotland. The public sector is able to offer a range of roles which are more likely to make use of the skills which graduates have gained.

Consequences of Migrating

So what are the consequences of migrating for Welsh-born graduates' quality of employment? Table 4 sets out findings from our analysis of LFS data on different dimensions of employment outcomes for post-1992 young graduates according to their migration status. This is further refined into a fourfold classification in terms of whether non-migrants are living with their parents, and whether migrants have gone to the IRC (Inner Region

Core) or elsewhere in the UK, which aids understanding of labour market outcomes.

The top pane shows that young graduates from Wales who have migrated have better quality jobs as they are less likely to be employed in a non-graduate occupation (a differential of 13 percentage points between migrants and non-migrants). Overall, non-migrant graduates in the devolved nations are more likely to be employed in a non-graduate job than migrants, but this is particularly so in Wales. Interestingly, Welsh migrants to the IRC are more likely (at 16%) than the other devolved nations to be in a non-graduate job, possibly reflecting the relative proximity of the IRC to Wales.

The middle pane shows that Welsh migrants are less likely to be employed in the public sector (a 16 point differential between migrants and non-migrants). Again, this is particularly the case for Wales compared to the other devolved nations, with an overall 11 point differential between migrants and non-migrants.

Finally, the bottom pane considers the relative earnings of the different graduate groups. Regional price differentials have been applied to the LFS earnings data to account for cost-of-living differences. It shows that Welsh migrants have higher earnings

Table 4: Employment Outcomes of Post-1992 Young Graduates

	Non-Migrants			Migrants			Migrant/Non-Migrant Differential
	Living elsewhere	Living with parents	All	IRC	Rest of UK	All	
Employed in a Non-Graduate Job (%)							
Wales	20.5	50.7	27.2	15.6	13.9	14.7	-12.5
Scotland	18.0	45.6	23.3	10.8	14.7	12.6	-10.7
N. Ireland	19.7	41.1	25.6	11.7	13.9	13.2	-12.4
Total	19.0	45.5	24.8	12.7	14.2	13.5	-11.3
Employed in the Public Sector (%)							
Wales	50.0	45.0	48.9	24.4	41.0	33.3	-15.6
Scotland	39.9	28.9	37.8	17.5	35.1	25.7	-12.1
N. Ireland	45.1	39.2	43.5	28.1	36.2	33.9	-9.6
Total	43.6	36.0	41.9	21.6	37.6	30.3	-11.6
Real Gross Weekly Earnings (£)							
Wales	515	325	480	691	566	621	29.5%
Scotland	579	343	539	766	647	708	31.4%
N. Ireland	546	363	510	603	607	605	18.7%
Total	556	343	517	715	607	655	26.6%

Source: Labour Force Survey 2006-2010

(migrants' gross weekly earnings are 30% higher). The premium associated with migration to the IRC is in excess of 40% among graduates from both Wales and Scotland.

Our APS analysis, not tabled here, shows that all these findings hold true for the stock of Welsh-born, Welsh-resident graduates, that is, across all age groups, and not just for young post-1992 graduates.

In addition to showing the economic returns to migration, Table 4 also illustrates the flipside, or the penalties of staying, particularly for those who remain living in the parental home. In our analysis we realised the importance of differentiating this group as it has the worst employment outcomes (as well as the worst social outcomes in terms of partnership and family formation, not detailed here). The poorer labour market outcomes of non-migrants compared to migrants can generally be attributed to the particular career circumstances of those who remain living in the family home. For example, while Welsh non-migrant graduates are most likely to be employed within a non-graduate job (27%) this is partly explained by the over half of graduates who live with their parents holding a non-graduate position. This may be expected given that assimilation into a graduate-level job takes time following graduation, and younger graduates who are living at home are probably more likely to be in non-graduate employment.

Conclusions and Policy Implications

Wales exhibits low retention rates compared to other devolved nations in terms of the proportion of graduates from Welsh Higher Education institutions who subsequently gain employment within Wales. However, the analysis suggests that the notion of a clear, unequivocal graduate brain drain has to be qualified. Wales does manage to retain high numbers of graduates relative to many English regions and there is a clear 'pull of home' for graduates who have left the region to study elsewhere, as shown by the importance of 'locals' and 'returners' to the graduate labour market.

There are clear benefits of migrating for individual graduates. Young graduates

who have migrated from Wales have better quality jobs, are less likely to be employed in the public sector, and have higher earnings. This reflects the relative lack of opportunities for graduates within Wales. The main source of quality employment is the public sector, which employs approximately half of post-1992 young graduates who were born and live in Wales. This draws attention to the significance of the relationships between graduate migration and retention and the employment structure of the Welsh economy.

There are varied policy implications of these findings. Wales is a public sector dominated knowledge economy and the significance of this in terms of the likely career development opportunities for its graduates has implications in light of public sector cuts which will threaten the ability of Wales to retain graduates (see WAO, 2011 and Wright, 2011). The findings perhaps suggest a need to develop policies which make the courses taught at local universities more appropriate for the specialised needs of the Welsh economy (see Simmie et al, 2006), as well as the need for greater attention on the possibility of nurturing graduate entrepreneurs.

In turn, encouraging locals to study and stay in the region ('grow your own') is more likely to have an impact on graduate retention rates than attracting students from outside the region. But the localisation of Higher Education admissions that such an approach would entail would lead to tensions between individual returns to education, increased through migration, and potential benefits to the Welsh economy. There are also clear implications for Higher Education fees policy. The potential importance of 'returners' also points to a key policy question of how to assist the 'pull of home'? Lessons can perhaps be learnt from the experiences of Scotland (see, for example, Findlay et al, 2008).

Note

This article presents the initial findings of research which commenced in 2010. The research was funded by the ESRC's SKOPE Centre on Skills and Organisational Performance for the Knowledge Economy, based at Cardiff University and Oxford University. It was

conducted in partnership with WISERD, the Wales Institute of Social and Economic Research, Data and Methods. Further information on the research, including the full report and its supporting data, can be accessed here: <http://www.wiserd.ac.uk/research/wiserd-projects-current/welsh-graduate-migration/>

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