MAPPING THE POPULATION, CAREERS, MOBILITIES AND IMPACTS OF ADVANCED DEGREE GRADUATES IN THE SOCIAL SCIENCES AND HUMANITIES (POCARIM)

Policy Report 9

Intersectoral mobility of Social Science and Humanities PhD graduates in Europe

Debbie Millard
University of Salford

This project is funded by the European Union under the 7th Framework Programme

The POCARIM project is funded by the European Commission under the Framework 7 Programme. Any views represented in this report are those of the authors.
Enquiries regarding this publication should be sent to:
Dr Debbie Millard: d.m.millard@salford.ac.uk

Contents

Tables

Background: The POCARIM Project

Between 2011 and 2014 a multinational team of academics and researchers collaborated on a research project funded by the European Commission under the Framework 7 Programme: 'Mapping the Population, Careers, Mobilities and Impacts of Advanced Research Degree Graduates in the Social Sciences and Humanities (POCARIM)'.[1]

One aim of the project was to explore the main issues and trends in relation to the intersectoral mobility of social sciences and humanities (SSH) PhD graduates. Intersectoral moves are defined here as job moves between the academic sector and other sectors, including the private, public and third sectors.

Our purpose with regard to sectoral mobility was to, firstly, identify some of the main trends in terms of the employment of PhD graduates in the social sciences and humanities in different sectors and to understand more about the nature of intersectoral moves, including the direction of job moves (from academia to other sectors, or from other sectors to academia), the timing of moves (e.g. prior to the PhD, immediately after the PhD, or some years later) and the extent of repeat moves. Secondly, we aimed to improve understanding of the factors shaping intersectoral mobility, in particular to investigate the barriers to intersectoral mobility and the factors that promote intersectoral mobility.

In this policy report we present the project's key findings on intersectoral mobility. Our findings are based on original work carried out in each of the POCARIM countries. This includes: a review of the literature, policy and existing data, as well as original empirical survey and interview research. In the conclusions we draw out the implications of our findings for policymakers.

Methods

The project consisted of two core phases. Each phase was coordinated by a nominated partner and carried out across the 13 countries by all partners.

Phase one of the research consisted of:

- A review of over 350 studies on the themes of: employment trends, career paths and graduate destinations; and impact, engagement and the contribution of SSH research (Gustafsson and Hansen, 2013).
- A review of policy approaches to interdisciplinarity, doctoral education as the first phase of an academic career, and responses to the economic crisis in terms of funding of doctoral education (Bitusikova, 2013).
- A review of existing statistical data sources on the population of social science and humanities researchers in the POCARIM countries and beyond (Cañibano *et al*., 2013).

Phase two consisted of:

- An online survey of 2,723 SSH doctoral graduates which asked a number of questions on the key themes of the project. These included the perceived impacts of respondents' work, and their international, intersectoral and interdisciplinary mobilities. Survey data was cleaned and analysed in SPSS and EXCEL (Kupiszewska *et al*., 2013).

[1] The countries in which the study was carried out were: France, Germany, Hungary, Italy, Latvia, Norway, Poland, Portugal, Slovakia, Spain, Switzerland, Turkey and the UK. For further details of the project see http://www.salford.ac.uk/nmsw/research/research-projects/pocarim-home.

- In-depth, qualitative interviews with 25 respondents in each of the thirteen POCARIM countries. Each interview was transcribed, translated into English if necessary, and entered into a single NVIVO project file for analysis.

Intersectoral mobility

With the increasing emphasis on demonstrating the impact of research (see Policy Report 5), attention is being paid to the role of 'knowledge brokering' or 'knowledge translation' (eg Jansson et al 2010, Knight and Lyall 2013). Fritsch and Krabel (2012) argue that intersectoral mobility is important for transferring knowledge between sectors, and in particular applying knowledge produced in academic research in industry, government or the third sector. However, whilst there has been extensive academic research on university-industry links, commercialisation and academic engagement, there has been less on intersectoral mobility. University-industry links may be insufficient to effectively translate knowledge. Co-presence or prolonged periods of working in other sectors may be effective at transferring tacit knowledge. PhD graduates potentially have a role in translating knowledge gained in the academic sphere in order to allow it to be applied in other sectors (Vandewelde 2014). Vandewelde argues that intersectoral mobility of PhD graduates is an element in the 'Knowledge Transfer Pyramid.' Data indicates that that fewer researchers are employed in the business sector compared to countries such as the US and Japan (IDEA Consult 2013, Vandevelde 2014) and efforts are being made to increase intersectoral mobility of researchers and PhD graduates. In 2005 the European Commission set up a Steering Group on Human Resources and Mobility to look at ways of improving mobility between academia and industry (European Commission 2006). They came up with a set of key recommendations based on the following:

Table 1. Recommendations on researcher mobility

1. Joint researcher training programmes
2. Employment skills
3. Joint PhD supervision
4. Intersectoral mobility: internship, consultancy
5. Appreciation of staff through evaluation criteria
6. Permanent positions for intersectorally mobile staff
7. Remove administrative barriers esp. recruitment
8. Align academia-industry interests through framework conditions: co-location, grants, TTO
9. Appreciation of institutions through evaluation criteria/incentives
10. Informal networks SMEs-academia
11. Professionalise academic staff
12. Raise awareness: social security, pensions, EU programmes
13. Joint researcher training programmes

Source: Vandewelde (2014)

In 2014, a further working group was set up to revisit the recommendations from this workshop, which found that progress had been made in some areas (Vandewelde 2014). An increasing number of initiatives have been instigated to increase intersectoral mobility. The vast majority are targeted at early stage researchers at PhD or postdoctoral stage. Mobility is often one way from academia to other sectors after the PhD. The mobility of established researchers into other sectors is only a policy in few countries (eg Norway, France).

This report considers the extent and experiences of intersectoral mobility in social science and humanities. The first section reviews literature on the employment of PhD graduates in different sectors. The second section presents some data on employment of PhD graduates in different sectors. The third section presents some findings from our own survey. The fourth section considers the factors that act as barriers or facilitators to intersectoral mobility, based on the interviews. This is followed by the Conclusions and Policy Recommendations.

Employability of PhD graduates outside academia

Academic and policy literature revealed a mixed picture as regards the employment satisfaction and employability of PhD graduates in other sectors. Some studies have identified positive effects of PhDs. In the UK Hunt *et al.* (2010) found PhD graduates were highly employable. In Portugal, Gaio Alves found some favourable indications in terms of general employability and job satisfaction among researchers (Gaio Alves, 2005).

However, other studies have been less positive. In a 2012 study in Spain, Domínguez and Pérez found that 91% of PhD holders from SSH did not consider their advanced academic degree to be necessary in their jobs. In Poland and France, studies have found that having a PhD degree does not count for much compared with other degrees, whilst the Polish studies reported that PhDs are not valued in all professions, especially those in non-academic fields and the private sector (Sztabinski, 2002; Kwiek, 2003; Kwiek, 2004). In Spain, it was found that young researchers struggled to apply their skills outside academia. Some studies in Italy (one on political sciences and one on PhD graduates from Northern Italy) have found that PhD graduates had difficulties finding academic and suitable non-academic employment (Graziano, 2006; Ballarino and Colombo, 2010)

Borrell-Damian stresses the importance of mobility of SSH doctoral candidates across sectors, but notes that raising awareness of the value of SSH research in companies is crucial, and so is raising awareness among social scientists themselves who rarely address businesses or industries (Borrel-Damian, 2009, p. 58).

Transferable training

Recommendations to increase transferable training of PhD students have resulted in an increase in collaborative training between industry and academia. At the EU level, Marie Curie Training increasingly incorporates intersectoral collaboration and mobility in terms of PhD training. Innovative Training Networks (ITNs) are based on intersectoral collaboration, where secondments are completed in other sectors and the other sectors contribute towards PhD training[2]. The literature and policy review in several countries (e.g. Italy, Poland, Switzerland and France) suggested that PhD training should be geared also to employment in fields outside academia (Graziano, 2006; Kwiek, 2004; Reget Colet, 2008; CRUS, 2009; Prawelska-Skrzypek and Baran, 2010; Schubert and Engelage, 2011).

Transferable (or generic) skills development has become a very common part of doctoral training whether it is organised via structured programmes at faculties and departments or at doctoral schools or centres for doctoral studies. In addition to courses related to research such as methodology or ethics, other courses, workshops, colloquia and summer schools are offered to doctoral candidates in order to broaden their skills portfolio and chances to develop good career opportunities. Transferable skills training is well developed and organised in the UK thanks to massive funding ('the Roberts money' – until 2011), and some other countries such as France, Norway or Switzerland have also developed good transferable skills training models.

[2] See http://ec.europa.eu/research/mariecurieactions/about-msca/actions/itn/index_en.htm

Industry-academia collaboration

Vandewelde (2014) finds that progress has also been made in reducing administrative barriers, for example to strengthen research collaboration. In Hungary a study showed that professional connections originating from undergraduate and graduate studies are determinative in PhD holders' careers (Fábri 2008). Studies in Germany, Spain and France (not necessarily only SSH researchers) show that researchers' contacts with and activities in private companies increased their employability (Fritsch and Krabel 2012, Sempere and Rocha 2003).

At the national level, some good examples of academia-business/industry collaboration were identified. However, most were individual institutional initiatives, and not specifically in social sciences and humanities. National and structured support for this kind of collaboration has been well developed in France through the CIFRE Programme (Industrial agreements for training through research, funded jointly by the state and by a company), in the UK through CASE studentships (collaborative training grants that allow doctoral candidates to undertake research within the context of mutually beneficial research collaboration between academic and partner institutions) and in Norway through the Industrial PhD Scheme which aims to facilitate the recruitment of researchers to Norwegian industry (a scheme managed by the Research Council for funding industry-oriented doctoral research fellowships). In Portugal, The Portuguese Foundation for Science and Technology offers Doctoral Degree Grants in Enterprises (BDE). In order to qualify for this type of grant, a plan of work must be submitted detailing the objectives, the support to be provided for the recipient's research activity in the enterprise and the expected interaction between the enterprise and the university where the recipient is enrolled in the doctoral degree program; the form of articulation between the academic orientation for the doctoral programme provided by a university professor or researcher and the corresponding company supervision must be set forth in a protocol signed by both entities involved. Italy has introduced new regulations for collaborative doctoral programmes with companies (Decree from the Ministry of University Education And Research). In Turkey, there is good collaboration in research and doctoral training between some universities (especially Middle East Technical University (ODTU) and Istanbul University) and ministries. In most countries academia-business/industry collaboration, especially in SSH, is based on institutional policies or more often individual/departmental initiatives. Therefore data is difficult to find. Despite the rhetoric of the need to develop academia-business collaboration, universities in countries such as Latvia, Poland, Slovakia or Spain still train doctoral candidates mainly for the academic market. The report concludes that the higher the innovative performance of the country, the more progress has been made in supporting intersectoral mobility, the 'research leaders' being Finland, Germany, Denmark and Sweden. Of the POCARIM countries, the next highest performing countries, classed as 'innovation followers', are France and the UK.

Academia-business/industry collaboration and mobility remains a challenge, especially if we want to encourage two-way mobility and collaboration (not only university-industry one-way street). One of the barriers is different needs and performance indicators in these sectors: while an academic has to build his/her career on the basis of peer reviewed publications, a researcher in industry is not encouraged (sometimes not allowed due to Intellectual Property Rights) to publish and is supposed to focus more on applying and transferring knowledge in innovation, economic and social outcomes. This problem has been highlighted also in an evaluation of Marie Curie Fellowships Scheme. Marie Curie fellows in industrial placements expressed their concerns about having less time for publication activities, and as a result, a reduction in this form of output (Ackers *et al*., 2010).

The employment of social science and humanities PhD graduates: trends

At the present time there is no European-wide systematic source of data on the employment of SSH PhD graduates. This need may be met by the recently launched ESF Career Tracking Pilot Project[3]. However, currently, only patchy data is available, which is presented here. It is not available for all countries and is not broken down by discipline; thus comparative data presented below covers all disciplines, not just social sciences and humanities. Due to differences in definitions, the data presented is in most cases not directly comparable, and does not present a clear pattern. Only very speculative conclusions can be drawn from the data (See Cañabano et al 2013).

The MORE Survey

According to the MORE survey there are 1.59 million FTE researchers[4] in the EU, the largest numbers in larger countries like Germany, with an estimated 500,000 (HC[5]), the UK 400,000 and France 300,000. The Nordic countries have the highest share of researchers in their active working population (labour force): 1.0 to 1.5% compared to the EU average of 0.66%. Less than half of researchers in the EU27 (44.9%) work in the business enterprise sector and 55% in the public sector. Of these, 41.6% work in higher education. This varies between countries as is shown by Table 2.

Table 2. Researchers by Sector 2010 (MORE Data)

	Higher Education	Business Enterprise	Government	Not for profit
France	29.3	58.4	11.2	1.2
Germany	27.6	56.7	15.8	0
Hungary	28.3	48.1	23.6	0
Italy	42.0	37.0	16.9	4.0
Latvia	67.5	16.2	16.3	0
Poland	60.7	18.2	21.0	0.1
Portugal	61.8	22.9	5.3	10.1
Slovakia	67.2	12.7	19.8	0.3
Spain	48.0	33.7	18.1	0.2
UK	62.3	32.8	3.4	1.5

Source: Adapted from IDEA Consult (2013)

In some countries the majority of researchers (all disciplines) work in business, notably France and Germany, where just under 60% are in business and slightly under 30% in higher education. This is almost the reverse of Portugal and the UK, where just under two thirds work in higher education and less than a third in business (in Portugal a relatively high proportion also work in the not for profit sector). In the former communist countries, a high proportion work in government and all of these except Hungary have a low proportion in business.

[3] http://www.esf.org/serving-science/career-tracking/career-tracking-pilot.html

[4] The definition of researcher is that used in the Canberra Manual, covering HRST and the Frascati Manual, covering R&D personnel. See IDEA Consult p 56.

[5] Head Count.

OECD Data

Of the POCARIM countries, OECD data by sector of employment is available for Italy, Poland, Portugal and the Slovak Republic and for some sectors in Germany, Hungary, Spain and Norway and the UK to a very limited extent. Table 3 gives the numbers in each sector where available:

Table 3. Researchers by Sector (OECD) Data

Country	Higher Education %	Business %	Government %	Not for profit %
Germany	25	60	15	
Hungary	36.4	34.4	29.2	
Italy	42.5	35.8	17.6	4.1
Norway	34	50	16	
Poland	64.3	14.3	21.3	0.1
Portugal	53.1	21.9	13.2	11.8
Slovakia	60	17	23	0
Spain	51	32	17	
UK	58	37	3.5	1.5

Source: OECD data. Adapted from Cañibano *et al*. (2013)

The data shows a large variation by country, broadly in line with the MORE data, with Germany and to some extent Norway having a high proportion in business; Poland, Slovakia and the UK having high proportions in higher education and Hungary, Poland and Slovakia having relatively high numbers in government compared to other countries.

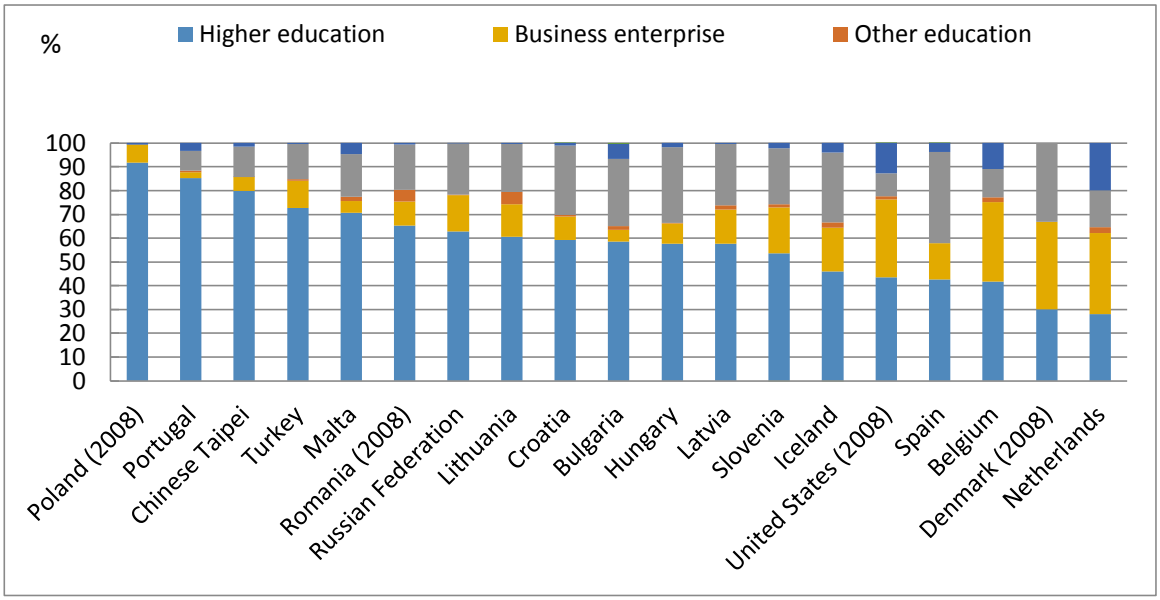
Careers of Doctorate Holders

The Careers of Doctorate Holders (CDH) project is an initiative of the OECD, with the cooperation of UNESCO and Eurostat.[6] The CDH provides useful information regarding labour market outcomes and international mobility.

Data from 2009 shows that the majority of doctoral holders in the countries surveyed are employed in higher education with important variations according to country. The following shows that in some countries covered (The Netherlands, Belgium, Denmark and the US), more than a third are employed in business. However the report does not cover the majority of POCARIM countries. Of the POCARIM countries, only Poland, Portugal, Turkey, Hungary, Spain and Latvia are covered. Of these, Spain is the country with the highest percentage employed in business (15.1%).

[6] The core objectives were to better understand the labour market, career paths and mobility of the doctoral population. A pilot data collection was conducted in 2005 in Argentina, Australia, Canada, Germany, Portugal, Switzerland and the USA, followed by a second and larger-scale data collection in late 2007 with 25 participating countries. These data were then processed to focus on those who received their PhD between 1990 and 2006, improving comparability of the results. A further data collection was then conducted in 2009.

Table 4. Sectors of employment of doctoral holders (2013)



Source: OECD (2013)

Country data

Data for social science and humanities was only available to a limited extent. Data from Norway and the UK on the employment paths of SSH PhD graduates found that the majority work in the higher education sector. In the UK, 78% of those with a PhD in arts and humanities were found to work in the HE sector compared to less than 60% in the social sciences. The remainder work both in the public and private sectors, where they are employed in highly skilled professions such as creative industries, publishing, law, finance, non-academic R&D, and further and secondary education. A Norwegian survey found that about 50% of SSH PhD holders work in academic positions in HE. A survey in Switzerland found that the majority of SSH PhD holders work in the academic, public or not for profit sectors (Koller and Meffre, 2010). Based on this limited data it would appear that, compared with data for all PhDs (above), a higher proportion of PhD graduates in SSH work in higher education and a lower proportion in business.

In the UK over the past decade the national HE data collection agency, the Higher Education Statistics Agency (HESA) has begun to collect data on the destinations of doctorate holders from British institutions.[7] Work on the most recent data (collected in 2010 three years after graduation), undertaken by Vitae, found that whilst 43.9% of all doctoral graduates were employed in higher education, the figure was 57.5% for arts and humanities and 67.6% for social sciences (Mellors-Bourne *et al*., 2013).

Norway is unique in providing detailed occupational data, linked to regular census data collections and labour market surveys. This provides a better alternative source for data as well as a better building block for trying to construct harmonized and relatively comprehensive data across the EC.

[7] See various publications by VITAE (Haynes & Metcalfe 2007; Haynes, Metcalfe & Videler 2009; Hooley & Videler 2009; Hunt et al. 2010).

Data from POCARIM on intersectoral mobility will now be presented, firstly the survey and secondly the interviews.

The POCARIM Survey

On average, 76% of the POCARIM respondents who responded to the survey worked in the public sector, 18% work in the private sector and 3% in the third sector.

As can be seen from Table 5, the vast majority of respondents, 78% on average in the POCARIM countries, are employed in a higher education (HE) or research institution, with less than 10% in any other sector.

Table 5. Respondents by country of current employment and type of institution (%)

Type of institution	CH	DE	ES	FR	HU	IT	LV	NO	PL	PT	SK	TR	UK	POCARIM average
Business	7	14	7	16	6	4	6	3	11	2	10	2	8	7.4
HE/research	70	65	78	60	74	86	77	91	70	91	83	91	76	77.8
Primary/secondary education	2	1	7	6	1	2	3	0	4	2	1	0	4	2.6
Government	16	8	5	6	9	4	9	5	9	3	3	4	7	6.8
NGO	0	5	1	2	4	0	2	1	4	0	2	1	2	1.8
Other	5	8	2	10	5	3	3	1	2	1	1	3	2	3.5

Source: POCARIM

The majority of respondents were employed in higher education and research in all countries, but still with quite important variations by country. In particular, higher education was dominant as an employer in Norway, Portugal and Turkey and to some extent Italy. In some other countries businesses were more important as employers, in particular France, Germany and Poland, and government administration was quite important in Switzerland.

Direction of moves

One of the aims of the POCARIM project was to examine the career paths of SSH PhD holders. Career paths were investigated in the survey through questions concerning the first[8] and subsequent jobs after the award of the PhD (up to five jobs in addition to the current one) including unemployment. Table 6 shows the employment sector for the first job.

The dominant first employers in our sample are higher education and research institutions (74% on average in POCARIM countries). Business and commercial institutions accounted for 10% of jobs and government and administration, 7%. Again there are quite important differences between countries, higher education employing around 90% of respondents in Norway, Portugal and Turkey, compared to less than 70% in Switzerland, Germany, Spain, France and Poland.

Comparing tables 5 and 6 shows that there is a slight tendency for people interviewed to move from business to higher education between their first job post PhD and their current job. In the first job, 74.0% of people were employed in higher education, compared with 77.8% in their current job. 10.2% were employed in business in the first job, decreasing to 7.4% in the current job. There was virtually no change in the numbers employed in government or administration (6.9% first job and 6.8% current job). In some countries this trend to move from business to higher education was more marked, for

[8] Including also jobs that started before the PhD that lasted after the PhD was awarded.

example in Spain (10% more respondents worked in Higher Education in their current than in their first job) and Poland and Slovakia where the difference was 9% (In Latvia 7%). In some countries people had moved in the opposite direction, notably Italy where there has been a move from higher education to businesses.

Table 6. Respondents by country of first employment and type of employing institution (%)

Job sector	CH	DE	ES	FR	HU	IT	LV	NO	PL	PT	SK	TR	UK	POCARIM Average
Business	10	14	14	19	8	7	11	4	15	3	12	2	13	10.2
HE/research	63	68	68	62	71	77	70	92	61	91	74	89	75	74.0
Primary/secondary education	2	2	7	7	2	5	5	0	7	2	6	2	4	3.9
Government	17	8	6	2	10	5	8	3	12	4	7	3	5	6.9
NGO	1	3	1	1	3	2	3	0	4	0	2	2	1	1.7
Other	7	5	3	10	6	4	3	1	2	1	0	3	2	3.4

Source: POCARIM

The POCARIM Interviews

The interviews gave a greater insight into the nature and direction of intersectoral job moves, revealing several types of moves, which will now be discussed. These were (1) Move from academia into other sectors straight after PhD (2) Mid-career 'switchers' from other sectors to PhD in academia (3) Several or multiple intersectoral moves (4) Partial intersectoral moves.

(1) Move from academia into other sectors straight after PhD

The first type is of those who left academia soon after the award of their PhD. They tended to be younger and to have gone straight through from undergraduate studies to PhD without a break (although not necessarily without short-term professional experience outside academia). It was also common for interviewees making this sort of transition to be open to a variety of professional possibilities rather than to have a clear career path in mind; there was therefore an element of serendipity involved, as reported by the following interviewees:

> *I was hired by the company, and that went well and I really liked it so much I decided that it makes more sense to continue for now [CH04].*
>
> *[Interviewer: What was it like to leave the academic ground after so many years [left shortly after PhD, aged around 30]?] It was strange. I replied to this job, I only sent my CV and they called me in for an interview. I didn't even know what the job was. But since they gave us all the training, I wasn't worried [SK10].*

Moves were reported to be easier at this early career stage, but more difficult once people had developed a career in one sector, as also reported by Vandewelde (2014). This finding was further reinforced by the findings of the MORE study of mobility patterns and career paths of researchers, which reported that it was rare for a full professor to leave an academic post to join industry full-time.

(2) Mid-career 'switchers' from other sectors to PhD in academia

There was a second category of people who switched mid-career, starting their career in industry or in the public sector, and later on moving to higher education to pursue a PhD, in some cases linked to the previous job. In the first case the PhD was funded by the previous employer and in the second case the interviewee chose to develop their private sector experience during their PhD:

> *I hit a point where I'd had enough of the civil service [...] I was late 20s I thought, you know, time to move on if I'm going to move on [...] the PhD was funded by the [civil service body] [UK10].*
>
> *[Interviewer: What were you doing before your PhD?] I was in the private sector 1990-2002. I was an RA at [university] 2002-2004. [Interviewer: What was the reason for going to a PhD?] Sharing my private sector experience at the university [TR07].*

(3) Several or multiple intersectoral moves

A third, and less common, type was of multiple moves between sectors. This was less common, and tended to take place between similar environments and professional fields, for example between academia, government departments and research organisation working in related fields, which is explained well by the following two interviewees:

> *I went from the University to [a conservation organisation] and then … back to [university] … this shift between these two worlds has been very easy, maybe because it has always been in the science and technology field. It has not been private industry. [CH01].*

I haven't really seen myself really in the private sector. I would maybe more have a career in international organizations or NGO where I guess things are quite similar. [CH17].

Another interviewee had then also later moved to the Norwegian Research Council. He had made a number of moves, all within the area of science policy.

After the PhD [...] I stayed there at this institute for some years but I also was on leave [...] when I worked as senior advisor in the Ministry of Education [NO04].

A Polish interviewee had also made a number of moves, having worked in an NGO, then moved for a while to a private sector research organisation, which he left to finish his PhD. After his PhD he was offered a position of assistant professor, which he did for a few years. He then moved to the Institute of Public Affairs and is now again moving back to the NGO he started at. However, there were not many examples of this type of career, where there were several moves between sectors.

(4) Partial intersectoral moves

A final category was partial inter-sector moves, the practice of combining work in more than one sector simultaneously being quite common, mostly without the intention of making a permanent move. Interviewees spoke of sector-spanning networks, or part-time or occasional academic teaching or seminar work, such as the following:

Sometimes I teach at the university, I go there for a course or two or to do thesis advising [HU01].

The reason why I'm working at this law office is that I hope the way in which this law office works is a bit different from other law offices. We hold seminars and we teach at the university [HU17].

The combined positions identified in this research, reflected informal arrangements, where researchers kept up some links to academia and other sectors. The MORE Report indicated that 13% of researchers have a dual position in academia and non-academia. A European Science Foundation report (2013) identified more formalised types of arrangements, whereby employees in other sectors such as industry or hospitals have an add-on of 20% to their main position.

Case studies

The following describe cases of people who managed to make a number of intersectoral moves, their work often spanning sectors

A Norwegian respondent completed his PhD in comparative education after which he immediately took an academic position at the same university where he stayed for several years. He then took leave from his academic position for 3-4 years to work as a senior advisor at the Ministry of Education. His position was kept open and he returned to his position at the university after the secondment. However, several years later he again felt the need to expand his horizons, and moved to more of a leadership role that enabled him to increase his impact. At this point, he then moved a post at the Confederation of Norwegian Enterprise (NHO), where he was developing education policies in conjunction with the Ministry of Education.

He continued to have links to the academic environment, writing academic papers with colleagues and also editing a journal, but had recently been offered a 10% professorship, and was intending to leave his role as journal editor to do this. He regards this policymaking role combined with a small academic role as ideal, '*I think it is more or less my perfect mix, actually, when I can have this small, compact academic role and then I have this full time leadership position and continue to develop it in this field*' [NO04].

A British interviewee first had a career in race relations, employment and community organising. He spent some time in an academic research role in a university. Finally, he moved to a trade union where he led research in educational policy. Whilst employed at the trade union he completed a part-time PhD, which was closely linked to his role at the union, and helped to support policy development in the union and inform representations that they made to the government. He explains the choice to do a PhD whilst working in the same area in the trade union: '*It seemed to me that if I could do so in a … semi, supported environment in the context of doing a PhD with a leading institution which has a very good track record in the area of educational development and education leadership development, … it seemed to be the right kind of environment in which to examine in more detail the issues which were of increasing interest to me but also increasing interest if not concern to the union.'* His PhD also benefited him because he had recently between promoted twice and was in a very senior position [UK23].

Prior to his PhD, a Polish interviewee worked in marketing in a private higher education institute, and also did a little teaching. He decided to undertake a PhD in the economics of tourism both for personal satisfaction and for career advancement. He benefited immediately from his PhD because he was immediately promoted to assistant professor.

He then decided to leave his academic job both for personal and professional reasons and obtained a position in a private market research company where he had completed a large international project several years earlier. Due to his PhD he was immediately appointed as director of the analysis and research division. He explains that the transition to working in a private company rather than a HE institute was challenging, but the obstacles were not insurmountable, '*The beginnings were hard … maybe not dramatically hard, but it was necessary to switch to a slightly different pathway, from this more non-profit system to a typically commercial system, where research projects have real merit, but sometimes are in fact limited by a number of commercial restrictions.'*

Although he had some methodological training, he had to become familiar with different techniques, methods and software, as well as taking on more management responsibilities. He was happy to do this, and was appeared satisfied with his role in the market research company [PL20].

These cases show that a PhD can be valued and useful in other sectors. In the first two cases, the respondents linked the topic of their PhD closely to their policy development roles in other sectors, government or the third sector, and were able to span the HE, policymaking and third sectors in their work. The Norwegian case is a good example of maintaining both an academic role and a policy-making role. These types of dual posts are well established in Norway.

The third case shows that a PhD can also be valued in the private sector. Here, the value of the PhD was more generic and did not appear to be linked closely to the topic. The respondent previously had marketing experience (in HE) and had networks with the private sector. This interview shows that it is necessary to make adaptions to different skills requirements, both different methods and the need for generic skills, in particular management skills.

The following section discusses factors that affect the employability of SSH PhD graduates in non-academic sectors, picking up on some of the issues highlighted by the three case studies. The main factors identified were (1) culture and career structures in academia and other sectors (2) skills and training in academia and other sectors (3) the extent of intersectoral links.

Culture, careers and reward systems

The different cultures and reward systems are a major disincentive to intersectoral job mobility, particularly between academia and the private sector. Since the main aim of academia is to produce knowledge, this is also reflected in careers and reward systems. Academics are expected to obtain research grants to develop knowledge and transmit knowledge through peer-reviewed articles. In the private sector the focus is on exploiting knowledge for income generation. Academia, research organisations, government, NGOs and to some extent think tanks were perceived to share similar cultures and therefore hold more potential for moves (indeed, some respondents reported multiple moves between these sectors). The following identifies the main differences between sectors.

Focus on profit

Compared to academia the private sector was felt to be profit-driven (as opposed to knowledge- and innovation-driven), focused on costs and client demands (one referred to his employer as 'a survey factory' [PL11]), as noted by the following respondents:

> *Working in the private sector means you have to be more aware of earning money. You have to check, we have a budget and you have to check OK, we can spend 30 days on this and I have to check that costs aren't running out of time frame [DE09].*

> *[Interviewer: What are the most notable differences [between working private business and a university]? The difference in noise. The decibels are much more important in a business given that at the end of the month you have to turn a profit [ES26].*

Freedom

Academia was often seen to offer greater freedom both in terms of autonomy in working hours and patterns and in terms of offering a certain degree of freedom to pursue interests:

> *In truth the main difference is freedom. Freedom is everything. After all a company is something that completely ties your hands, you have to be putting in the hours every day [ES01].*

> *[…] being an academic allows me to be flexible with respect to family life. It doesn't mean that I work less but my work hours are more flexible. So if my child is ill and I have to stay home for a couple of days then I just do that and I don't even have to inform anybody. On the other hand it is really the academic freedom in the academic sector so you really work on something you like and are interested in, so it's not somebody telling you what you should produce [DE13].*

Time scale

There was some implication that time frames are shorter in the private sector. The following is viewed in terms of the simplification of messages, where there is little time to explain things in depth:

> *And it was so awful because the first questions they asked [in the interview] was, 'so if you could in one sentence summarise to a journalist your PhD', and I was like, you can't do it in one sentence, it's not like a product for sale [PL03].*

These shorter time frames were viewed more positively by others, such as the following:

> *And I realised when I was an intern [in an NGO] that I had small successes and achievements on a daily or weekly basis, whilst when you are going for a long research study it take you months or even longer to see successes or achievements. So this faster approach and the speed of working and the practical thing about it really suited me [DE22].*

Difficulties accessing academic careers

Those pursuing academic careers faced a number of obstacles, including intense competition for jobs, which in any case tended to be insecure due to difficulties securing tenure; the requirement for frequent mobility; and the long period of training represented by the PhD. There were country differences in this respect, with Germany in particular having a long entry path into an academic career consisting of both the PhD and a *Habilitation*.

> *[Interviewer: Did you ever consider an academic career?] Yes, I did, but to be an academic and to be a professor in Germany it is a very, very, hard process. And the competition is strong and so I never thought that this would be my way to do so [DE09].*

As a result of these differences, career systems are different, which can make mobility between sectors difficult. In academia, the need to accumulate in-depth knowledge and to be a specialist tends to contrast with the expectation that people working in other sectors should be more of a generalist and be able to apply themselves to different situations. The need to publish is a major disincentive to move from back into academia, as commented by a number of interviewees such as the following:

> *Well I believe it would be very challenging and almost impossible to return to academia. I have been outside of academia now for 7 years and usually the amount of project work we have to do to get our funding, 80% of the funding has to come from our client, and that gives you very little time for publications. And therefore I believe that my track record in terms of publications would affect returning to academia if I wanted to [DE07].*

On the other hand, over-specialisation might hinder a move outside academia. The following will discuss PhD skills and training.

PhD Skills and training

The interviews revealed that moves between sectors were also made possible and shaped by the kind of skills and knowledge that individuals possessed. The skills demanded in the private sector, for example, were more general and more focused on management than those in academia, as illustrated by the following:

> *On one hand [...] you have your working relationships with your employees. You have your relationship with the authorities, so all this management, this whole world completely takes over [ES01].*

A number of researchers pointed out that different skills are needed to work in an academic and a private sector role. In particular, it was pointed out that academic researchers tend to be quite specialised and have a research area, whereas people working in the private sector have to be generalists to a greater extent.

> *I'm qualitative and quantitative, I can move more than if I was too specialised [FR13].*

> *I think now moving to like some private company would be relatively easy, I mean especially I think if you have some quantitative background [CH19].*

> *For the jobs I get, CEO of a start-up doing consultancy in history, accompanying an R&D project with social sciences, articulating research and SMEs, [interdisciplinarity] is a major advantage. But it has also strong setback; it is part of the explanation why I couldn't succeed in getting an academic position [FR07].*

Based on a large survey of researchers in the EU, the MORE Project found that the focus of doctoral training was on communication and presentation skills, but less on entrepreneurial skills. It was found that transferable skills, such as people management, intellectual property rights and entrepreneurship were less common features of training programmes (IDEA Consult, 2013), which would seem to offer

scope for the development of PhD training programmes to include a greater variety of transferable skills.

Contacts with other sectors

Based on the POCARIM findings, moves into academia were more difficult for those who had spent time in other sectors and whose academic networks had not been maintained. The following illustrates many of the points noted here:

> *[Interviewer: Have you considered moving into that sector [the police]?] Yes I have, but again it's difficult to get a job position there, it's always through connections [DE10].*

Intersectoral moves were facilitated in cases where interviewees had combined work in more than one sector simultaneously (discussed in the previous section). In most cases there was no intention of making a permanent move. Some interviewees spoke of sector-spanning networks. In particular, links were reported between those outside academia and applied fields or professional schools specialising in their fields. Thus there were links between the private sector and business schools, or other schools connected to professional practice in the areas of psychology, interpreting, journalism and law, such as the following:

> *People in leading positions at the faculty have close contact with the private sector, even though they come from the academic sector. Most of them have worked there, or manage their own business [HU08].*

Other links took the form of consulting work, often undertaken by academics taking their expertise into other sectors; however, consulting work rarely led to longer-term moves.

As mentioned, it was rare for consultancy to result in moves to a different sector but there were at least two cases. In the first case, consultancy work lead to a full-time move to public administration:

> *I started in February as a part time consultant with the Cross-Institutional Coordination Centre. They work on the national development plan [...] And then I got this opportunity to do some work, and I saw how interesting it is in the public administration [LV03].*

In the other case a conservation expert who was working for a foundation had been offered consultancy work in a project that involved constructing a dam and moving a church with mural paintings to a higher position. He was considering either taking unpaid leave or leaving his job at the foundation.

However, as pointed out by some of the interviewees, maintaining links to two sectors involves investing in different types of work, where careers and reward systems are different. One person points out that he avoids too much consultancy because it cannot be used for publications, and is useful to a limited extent to fund his own research expenses such as conference travel. One person had taught at the university in the first half a year of working for a consultancy but had found it too much work and too much travel for the amount of pay and also no longer useful for her career, so had stopped. Professional and academic careers demand heavy investments to achieve goals and there is limited time to be work at both academic publications and teaching and professional and management roles in other sectors, so most people did not devote too much time to extra activities that went beyond their 'day job'.

Conclusions

Data on careers of PhD graduates is quite limited, in particular in SSH, but what data there is suggests that the majority of SSH researchers are employed in higher education. However, better data sources would be needed to be able to say more about trends. This is partly being addressed, as discussed in page 6. Intersectoral moves were generally shown to be more common early on in careers. However, in SSH, it is also quite common to switch mid-career to the academic sector.

Multiple moves between different sectors appear difficult, in particular between academia and business. This is for two main reasons:

(1) The culture is different in academia and businesses. The raison d'être of universities is to produce knowledge, whereas that of business is to sell products. Although university-industry links and commercialisation is increasing, there is still a pronounced distinction. The different culture is reflected in different reward systems, with the main aim in universities being to publish in high quality journals, with exploitation of results being less important. People working in academia are mainly motivated by increasing knowledge rather than making money, although many cooperate with non-academic partners in many ways such as knowledge transfer, policy advice and giving interviews with the media among others. Time scales are longer in academia, where it can take many years to obtain funding, complete projects and produce and publish results; thus it can take many years to establish a career. In industry and the third sector, time scales are shorter and results tend to be more immediate.

(2) As a result of different reward systems, different types of training are developed in universities, with a focus on research and teaching skills and less skill development in management, entrepreneurship and other skills linked to exploitation of results and commercialisation, such as IPR. This makes changing sectors difficult, in particular after long periods spent in one sector, where investments have been made in academic careers or in business careers for example. Moves between academia and government and NGOS appeared to be easier than between academia and business, because the difference in culture is not so great.

It is common for people to maintain links between the two sectors. For example some people working in industry did some limited teaching in universities and people working in universities were involved in some engagement activities such as consultancy, knowledge transfer and policy advice. In most cases, this did not translate into intersectoral moves, although there were a few cases, where intersectoral links lead to a permanent move. There were some cases of people who managed to successfully span sectors, showing the potential for the development of crosssectoral communities of practice.

Policy Recommendations

Policy recommendations fall into two main areas: (1) improving intersectoral links and training (2) changing incentive and reward systems.

Improving intersectoral links and training

1. Individual examples of intersectoral links were identified, which may provide useful models for developing in different countries. Some of these types of arrangement are more formalized. Examples of good practice in terms of promoting intersectoral mobility have been identified and could be extended or developed in other countries. A first step might be an extensive survey (covering the whole of Europe) into types of formal and informal schemes to promote intersectoral links, such as combined positions, industry mentoring and placements of PhD students in industry. Following this, a forum should be established (probably through an existing organization) to share good practice. A number of types of arrangement were identified that are now discussed individually.
2. Promote intersectoral mobility during PhD. This might include placements in industry, government or NGOS. Consider establishing schemes similar to those in the UK (CASE) and France (CIFRE), as well as EU level (ITNs) in other countries.
3. Extend combined or part-time positions common in some countries such as Norway to other countries, where people employed in government or industry also have a part-time role in academia. This research identified individual cases of people who had links, for example who did a little teaching in a university, that could be extended into more formalized arrangements.
4. Increase transferable skills training in PhD programmes, in particular in countries where this is not yet well developed. This may include leadership, entrepreneurship, intellectual property rights, project management and communication skills.
5. This could be facilitated by some of the above types of intersectoral links, whereby, where appropriate, training could be completed in industry or other sectors.
6. It is likely to be necessary to bring in outside trainers, either professional trainings or experts from industry to provide training in some of the above transferable skills.

Changing incentive and reward systems

Making some changes to career paths and incentive schemes to allow people to develop combined careers and move between sectors.

1. Change academic reward systems to reward other achievements than peer-reviewed publications. In the UK the Research Excellence Framework (REF) is also now rewarding impacts alongside peer-reviewed articles. There may be different ways to achieve this, which could include alternative career paths for some academics, creating new 'boundary spanning' roles to exploit or translate knowledge rather than expecting academics to 'do it all'. Additionally, academics should be rewarded both for peer-reviewed articles and high impact work.
2. Encourage joint publications between academics and people from industry, government or the third sector. This would result from increasing links between academia and other sectors. Further incentives could be introduced into rewards systems (eg the REF in the UK). This would both allow people who move from academia to maintain their publications and also increase awareness of the application of research among academics.
3. Reward achievements other than publications in academia, that are more common in other sectors. This might include management achievements, including people management, organisational achievements and commercial achievements.

References

Ackers, H. L. (2010). Evaluation of the Impact of the Framework Programme on the Formation of the ERA in the Social Sciences and Humanities. European Commission.

Ballarino, G. and S. Colombo. (2010). Occupational Outcomes of PhD Graduates in Northern Italy. *Italian Journal of Sociology of Education*, 2.

Bitusikova, A., (2013) *Work Package 2: Policy Analysis*. POCARIM. Available at: http://www.salford.ac.uk/__data/assets/pdf_file/0012/399576/Policy_analysis_WP2.pdf

Borrell-Damian, L. (2009). *Collaborative Doctoral Education: University-Industry Partnerships for Enhancing Knowledge*. EUA Publications. http://www.eua.be/eua-work-and-policy-area/research-and-innovation/doctoral- education/doc-careers/

Cañibano, C., E. Castro-Martínez, A. García-Aracil, F. Ortega-Colomer, J. Otamendi and R. Woolley (2013) *Work Package 3: Secondary Data Analysis*. POCARIM. Available at: http://www.salford.ac.uk/__data/assets/pdf_file/0005/399596/Data_review_WP3.pdf

CRUS (2009). *Rapport sur le doctorat 2008: Vue d ensemble du doctorat en Suisse*. Rapport dans le cadre du projet de coopération et d'innovation „Soutien à la collaboration en matière de formation doctorale" 2008-2011. Bern, Conférence des Recteurs des Universités Suisses.

Domínguez, J. F. C. and M.A.M. Pérez. (2012). Professional Doctorates and Careers: the Spanish case. *European Journal of Education*, 47(1).

European Commission (2006). Mobility of Researchers between Academia and Industry: 12 practical recommendations. European Commission, Brussels.

European Science Foundation (2013) *New Concepts of Researcher Mobility – a Comprehensive Approach including Combined/Part-Time Positions*. Science Policy Briefing April 2013, European Science Foundation.

Fábri, I. (2008), *Doktoráltak a munkaerőpiacon. A PhD fokozat szerepe a szakmai karrierépítésben* (Doctorate holders on the labour market. The role of PhD graduation in building professional career). Budapest: Educatio Non-profit company, National Higher Education Information Center.

Fritsch, M. and S. Krabel (2012). Ready to Leave the Ivory Tower? Academic Scientists' Appeal to Work in the Private Sector. *Journal of Technology Transfer* 37: 271-296.

Gaio Alves, M. (2005) Como se entrelaçam a educação e o emprego? Contributos da investigação sobre licenciados, mestre e doutores from http://www.eses.pt/interaccoes.

Graziano, P. (2006). Entering Italian Academia in Political Science: Can the 'Sacred Fire' Keep Burning? *European Political Science*, 5, 264–270.

Gustafsson, M. and T. Hansen (2013) *Work Package 1: Research Review*. POCARIM. Available at: http://www.salford.ac.uk/__data/assets/pdf_file/0011/399575/WP1_Literature_Review_final.pdf

Haynes, K. and J. Metcalfe (2007). *What do PhDs Do?* Cambridge, Vitae.

Haynes, K., J. Metcalfe and T. Videler (2009). *What do Researchers do? First Destinations of Doctoral Graduates by Subject*. Cambridge, Vitae.

Hooley, T. and T. Videler (2009). What do Researchers do? Career Profiles of Doctoral Graduates. Cambridge, Vitae.

Hunt, W., N. Jagger, J. Metcalfe and E. Pollard (2010). What do Researchers do? Doctoral Graduate Destinations and Impact Three Years on. Cambridge: Vitae.

IDEA Consult (2013). *Support for Continued Data Collection and Analysis Concerning Mobility Patterns and Career Paths of Researchers*, prepared for European Commission, Research-Directorate-General, Directorate B – European Research Area, Brussels, August 2013.

Jansson, S.M., Benoit, C., Casey, L., Phillips, R. and Burne, D. (2010). In for the long haul: knowledge translation between academic and non-profit organizations.' Qualitative Health Research 20 (1): 131-143.

Knight, C. and Lyall, C. (2013). Knowledge brokers: the role of intermediaries in producing research impact. Evidence & Policy 9 (3): 309-316.

Koller, P. and V. Meffre (2010). La formation et la situation professionnelle des titulaires d'un doctorat: résultats issues des données du Système universitaire Suisse et de l'enquête 2007 auprès des personnes nouvellement diplômés. Neuchâtel: Office fédérale de la statistique (OFS).

Kupiszewska, D. Kupiszewski, M. Kicinger, A. (2013) *Work Package 3: Survey Report*. POCARIM. Available at: http://www.salford.ac.uk/__data/assets/pdf_file/0004/399577/WP4_Survey_report.pdf

Kwiek, M. (2003). Academe in Transition: Transformations in the Polish Academic Profession. *Higher Education*, 45, 455–476.

Kwiek, M. (2004). The International Attractiveness of the Academic Profession in Europe. The Case of Poland. In J. Enders & E. de Weert (Eds.), *The International Attractiveness of the Academic Profession*. Twente: CHEPS.

Mellors-Bourne, R., J. Metcalf and E. Pollard (2013). What do Researchers do? Early Career Progression of Doctoral Graduates. Cambridge, Vitae.

Prawelska-Skrzypek, G. and G. Baran (2010). Management of the Transition from University to Professional Life in the Context of Key Doctoral Students' Competences. Kraków: Malopolskie Centrum Doskonalenia Nauczycieli.

Rege Colet, N. (2008). Revalorisation de la formation doctorale: impact des programmes doctoraux sur le développement professionnel. Paper presented at the Actes AIPU.

Schubert, F. and S. Engelage (2011). Wie undicht ist die Pipeline? Wissenschaftskarrieren von Frauen. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 63: 431-457.

Sempere, M. J. M., and J.R. Rocha (2003). Evaluacion y seguimento de programas de movilidad del personal investigator y del universitario. Madrid: CSIC.

Sztabinski, P. B. (2002). Badanie absolwentów studiów doktoranckich - problemy warsztatowe i wstepne hipotezy. *Nauka i Szkolnictwo Wyzsze*, 2(20), 77-90.

Vandevelde, K. (2014). Intersectoral mobility. A report from the 2014 ERAC mutual learning workshop on Human Resources and Mobility. Brussels.