

Comments on the Calculation of Mobility Rates of Human Resources in Science and Technology

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Introduction

The aim of this document is to bring the attention of the Mobility of Human Resources Focus Group to some facts and methodological issues that may explain some of the disparities obtained so far between the national HRST mobility indicators. This will be done based on the National HRST mobility rates for the EU, EFTA and Candidate Countries (1994-1999) shown in Alex Stimpson's paper for Discussion entitled "Preliminary Results from the HRST Mobility analysis" (Version Two, 15 June 2000; Table 5 – p.8).

The motivation for this comment is the extremely high HRST mobility rate for Spain which appears in Stimpson's paper. As a matter of fact, Spain appears as the EU country having the highest rate of HRST mobility. In the following lines I will briefly expose some recent trends of the Spanish labour market which lead me to conclude that the "Mobility rate" calculated may be, in the case of Spain, much more a "Temporariness rate".

Recent Trends of the Spanish Labour Market

In the latest years, the Spanish economy has created jobs at a very high level, shortening the distance with the average rate of unemployment in the European Union. Since 1995 the Spanish rates of unemployment have decreased importantly, keeping however an average unemployment rate for 1999 of 15,9%.

Several factors have contributed to the improvement of the labour market general situation. I will underline two of those factors: first, the general trend of economic expansion, shown by the rates of GDP growth, which for three consecutive years (1997-99) have been close to 4%. And second, the effects of the labour market policies oriented to market flexibility promotion.

These two factors however, have also contributed to the maintenance of very high temporariness rates. Temporariness might be fostered either by a bad economic situation or by an economic expansion. Since 1995, the Spanish economy has created stable work at a very high rate but temporary work still plays an important role. This fact is mainly due to flexibility policies as, for example, the promotion of temporary contracts in the public sector and the creation of a large variety of contracts which enable companies to create temporary jobs that may become indefinite in the future. Moreover, the expansion of sectors which by their own characteristics require temporary jobs, as the building sector and the tourism industry (hotel and restaurants), explains also the high rates of temporariness.

Table 1 shows the evolution of the type of contracts signed by employees in Spain since 1994.

Table 1: Number of employees by type of labour contract and institutional sector, 1994-1999 (Thousands of people and rates of variation comparing to the precedent year)

Employees	1994	1995		1996		1997		1998		1999	
	thousands	Thousands	%	thousands	%	thousands	%	Thousands	%	thousands	%
Public Stor.	2 058.3	2 121.5	3.1	2 236.2	5.4	2 259.1	1.0	2 225.1	-1.5	2 254.9	1.3
Indefinite C.	1 720.4	1 781.9	3.6	1 883.2	5.7	1 892.1	0.5	1 826.3	-3.5	1 814.1	-0.7
Temporary C.	337.6	339.2	0.5	352.3	3.8	366.0	3.9	397.9	8.7	440.8	10.8
Tempo. Rate*	16.6%	16.0%	-0.4	15.8%	-0.2	16.2%	0.4	17.9%	1.7	19.5%	1.6
Private Stor.	6 567.9	6 821.2	3.9	7 047.9	3.3	7 448.6	5.7	7 931.5	6.5	8 581.8	8.2
Indefinite C.	3 988.1	4 038.3	1.3	4 258.4	5.4	5 549.8	6.8	4 964.6	9.1	5 467.4	10.1
Temporary C.	2 576.8	2 777.9	7.8	2 783.8	0.2	2 888.4	3.8	2 954.6	2.3	3 114.3	5.4
Tempo. Rate*	39.2%	40.7%	1.5	39.5%	-1.2	38.8%	-0.7	37.3%	-1.5	36.3%	-1.0
Total	8 622.9	8 937.3	3.6	9 277.6	3.8	9 696.3	4.5	10 143.3	4.6	10 836.6	6.7
Indefinite C.	5 708.4	5 820.2	2.0	6 141.6	5.5	6 441.9	4.9	6 790.9	5.4	7 281.5	7.2
Temporary C.	2 914.4	3 117.1	7.0	3 136.0	0.6	3 254.4	3.8	3 352.4	3.0	3 555.1	6.0
Tempo. Rate*	33.8%	34.9%	0.9	33.8%	-1.1	33.5%	-0.3	33.1%	-0.4	32.8%	-0.2

Font: Consejo Económico y Social (CES) *España 1999: Memoria sobre la situación socioeconómica y laboral*. Madrid 2 000.

(*)Tempo. Rate : $\text{Temporariness Rate} = 100 \cdot (\text{Temporary Contracts} / \text{Total Number of Contracts})$

Table 1 shows, especially for 1999, the high rates of job creation both in private and public sectors, compared to precedent years, as well as the maintenance of the temporariness rates. In most cases in Spain temporary contracts are signed for a duration no longer than three months.

The groups more affected by temporariness in the labour market are, in general terms, women, young people and people with lower levels of qualification. Belonging to one of these three “risk groups” enhances strongly the probabilities of having a temporary contract, especially in a context where 32.8% (1999) of the employees are attached to this type of contract. Thus, being young or being a women may be sufficient conditions for having a temporary contract despite the level of qualification. In fact, in Spain, HRST are, like any other employee, affected by temporariness, especially young HRST.

However, HRST have less problems in signing new contracts once their temporary contract has expired. The expiration of contracts may force them to move from a public laboratory to the private sector for example, to find another company employer or to change their occupation within the institution they already have been working for.

Temporariness in the Spanish labour market is a very complex problem due to many institutional factors and it is not my purpose here to develop the subject in depth but simply to draw the attention of the Focus Group to the type of Mobility we are really intending to study.

Temporariness versus Mobility

We perceive mobility of qualified personnel, especially of science and technology personnel, as a very important conduit for technology transfer and knowledge diffusion and creation. A flexible HRST labour market which enables the movement of HRST between sectors, firms, governmental research institutions and across national borders is a necessary condition for the efficiency of National Systems of Innovation.

However, we must make the difference between Mobility and Temporariness. The latter might be a symptom of the prevalence of precarious jobs in the market. A young researcher with a great potential may not be a good conduit of knowledge and a source of innovation when he has to worry about his future after his three month contract has expired.

In my opinion, the Spanish rates of mobility presented in Table 5 of Stimpson's paper are due to the high rates of temporariness prevailing in the Spanish labour market which in fact, foster mobility. Temporariness and precarious jobs force people to move. But this is not the mobility that we may consider as a great source of knowledge diffusion and creation.

See Alex Stimpson's Table 5 reproduced below.

Table 5: National HRST mobility rates in the EU, EFTA and Candidate Countries (1994-1999)

Mobility rates (%) Narrow definition						
	1994	1995	1996	1997	1998	1999
B	5.8	6.2	6.7	6.7	8.6	7.6
DK	11.0	11.3	11.2	9.4	11.4	12.2
D	6.7	5.9	6.4	6.0		7.4
EL	4.3	4.0	4.0	3.7	5.2	
E	13.5	14.0	13.6	14.1	14.1	
F	6.4	6.5	6.5	6.9	7.5	8.5
IRL	8.3	9.3	10.5	10.7		
I	2.9	2.8	3.1	3.1	4.6	4.8
L	5.1	4.6	4.8	4.3	4.9	6.2
NL	7.0	7.1	6.2	7.0	10.4	9.1
A		5.7	6.1			
P	5.7	4.6	5.1	5.1	8.0	7.8
FIN				9.6	11.4	12.1
S				7.1	8.4	9.1
UK	9.4	9.9	10.7	11.8		12.0
IS		12.3	11.1	12.1	14.1	
NO			10.8	8.8	13.0	
CH			10.1	9.1	10.8	10.5
CZ					5.9	4.1
EE				10.7	10.6	10.9
HU				5.6	6.0	5.1
RL				4.5	4.2	2.9
RO						
SI			5.6	5.3		
EU-15	7.1	7.0	7.4	7.7	8.5	8.5

Font: Stimpson ; A. (2000) Preliminary results from the HRST mobility analysis. Paper for Discussion. Version Two; 15 June. P. 8.

Methodological issues and suggestions for further work

Alex Stimpson's kindness and co-operation allowed me to know how Table 5 rates were calculated. This was:

$$\frac{\text{HRST that have been working less than one year in their current occupation (and who were employed in the precedent year; t-1)}}{\text{HRST employed in both years of reference (year t and year t-1)}}$$

This rate of mobility may be considered as a general and good comparable indicator for countries having a similar institutional labour market framework. However, disparities among those frameworks are reflected by the indicator and may induce the reader to misleading conclusions.

The calculation of more elaborated indicators which would include some of those institutional differences (by balancing for example the indicator with the rate of temporariness at the national level) could help to obtain more comparable results.

However, at this stage, I think the most important issue is to distinguish among the different types of mobility that the Focus Group wants to address. Mobility (whether it refers to HRST or to human resources in general) is not good and beneficial by itself. It is good under certain conditions and within certain institutional frameworks. I believe the HRST Mobility study could be improved by a clear definition of those conditions. I would allow myself to say that *Mobility differs from Movement*. In Spain, HRST move for the explained causes but Mobility of Science and Technology personnel is very low, mainly for institutional reasons.