

# The determinants of labour market earnings for Bulgarian migrants: Some micro-level evidence from Madrid, Spain

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## Abstract

This paper investigates the wage determination process in a migrant labour market using a unique survey conducted among legal and illegal Bulgarian immigrants in the city of Madrid in late 2003 and in the early months of 2004. The role of human capital, the time spent in Spain, language competence, and an individual's legal status are empirically assessed. In addition, the magnitude of the gender pay disparity within the migrant's labour market is also computed.

**Keywords:** Bulgarian; migrants; earnings; Spain.

## Introduction

The final decade of the twentieth century witnessed a radical transformation process that influenced the direction of economic and social policies, and enterprise business practices in the former communist countries of Europe. The collapse of the central planning system provided citizens of these countries with greater opportunities to migrate abroad and by the mid-1990s Bulgarian emigration was primarily driven by economic factors. In this early era, Bulgarian emigration was mainly towards destinations in Central European countries, notably the Czech Republic, Hungary and Austria (see SOPEMI 1999).

In more recent years, there has been a growing tendency towards temporary seasonal or even circular rather than permanent migration with the preferred destinations comprising Greece, Italy, Austria, Netherlands, Germany, UK,

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Turkey and Spain. The main motives remain economic in nature (see Guentcheva *et al.* 2003). The rise in temporary undocumented economic migration has been attributed to increased unemployment in certain regions of Bulgaria. The opportunity to stay in countries in the Schengen-area of the European Union (EU) for three months without a visa has provided an additional incentive<sup>1</sup>, and this has been further strengthened with Bulgaria's recent accession to the EU from January 1<sup>st</sup> 2007.<sup>2</sup>

Spain in particular emerged as an attractive destination for Bulgarian migrants in the second half of the 1990s. Researchers at the Gabinet d'Estudis Socials (GES) in Barcelona estimated the total number of registered Bulgarians in Spain on January 1<sup>st</sup> 2007 to be 118,182 (GES 2008). Anecdotal evidence suggests that Spain became a favoured destination for many Bulgarians because of the comparative tolerance of both the Spanish authorities and employers towards undocumented foreign labour. In addition, legislative programmes sympathetic to migrants in the past, and an anticipation of new legislative initiatives in the future, encouraged these flows. Most recently in May 2005, the Spanish government completed a new regularisation programme for the estimated one million undocumented foreigners in their country. Over 25,000 Bulgarian workers (roughly 3.7% of the estimated foreign workforce in Spain) subsequently applied to regularise their status.<sup>3</sup>

Given the quasi-legal and illegal nature of much emigration into Spain, little is known about migrant labour market behaviour in this host country. This paper exploits a rela-

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<sup>1</sup> Bulgaria was removed from the 'black Schengen list' in April 2001, and this allowed Bulgarian citizens to travel freely within the Schengen area for three months. It has been conjectured that many Bulgarians exploited this facility to undertake illegal employment in Europe while residing there legally.

<sup>2</sup> All EU-15 countries with the exception of Sweden and Finland approved measures restricting labour immigration from Bulgaria. All EU-10 decided to open their labour markets, with the exception of Malta, which restricts access, and Hungary, which imposes certain conditions.

<sup>3</sup> See [www.mtas.es/balance/pagina8.htm](http://www.mtas.es/balance/pagina8.htm)

tively rich, albeit small-scale, dataset acquired through interviews undertaken with a sample of Bulgarian immigrants in Spain to fill this lacuna. In particular, we are interested in exploring the earnings determination process for immigrants in a major Spanish city. The role of human capital, the time spent in Spain, language competence, and an individual's legal status are empirically assessed. In addition, we are also interested in determining the magnitude of any pay disparity experienced by Bulgarian women within the migrant's labour market.

This type of study is apposite given that much of the existing empirical work on the labour market performance of immigrants generally relates to legal migrants in the United States (US) and Australian labour markets (see Hendricks 2002; Chiswick *et al.* 2006). However, there are very few empirical studies on the earnings performance of illegal immigrants, with the notable exception of Chiswick (1991). Some papers for the US have compared the earnings of illegal and legal immigrants (e.g. Rivera-Batiz 1999) while Chiswick and Miller (1998) analysed the earnings effects of language skills among legalised immigrants. In the context of Europe, much of the empirical evidence is again restricted to the performance of legal migrants particularly in Scandinavian labour markets (see Edin *et al.* 2000; Hammarstedt 2001; Hayfron 2001; Hammarstedt and Shukur 2006).

There are few studies that examine the native-born and legal immigrant wage distributions in Spain (Simon *et al.* 2008; Canal-Dominguez and Rodriguez-Gutierrez 2008). Amuedo-Dorantes and De la Rica (2007) examined the occupational segregation of immigrants to Spain compared to native workers. Other studies have examined the effects of immigration on Spanish workers' wages (Carasco *et al.* 2008). Fernandez and Ortega (2008) study the labour market performance of legal immigrants in Spain.

The labour market performance of undocumented migrants in Europe remains limited given a lack of data, though Markova and Sarris (2002) provide one exception in this regard.

The structure of this paper is now outlined. The next section contains a description of the unique dataset assembled for this research followed by a section that reports the empirical results. A final section offers some conclusions.

### **Data and Methods**

This study exploits data from a unique survey undertaken by the first author among Bulgarian immigrants in the Madrid area of Spain (particularly, in the southern suburbs of Parla and Getafe, and in the south-eastern region of Alcalá de Henares). The survey was conducted over two separate periods: November/December 2003 and in late April 2004 and thus pre-dates legislative changes introduced in 2005 designed to regularise the status of illegal or undocumented workers in Spain.

A total of 198 Bulgarian immigrants living in the Madrid area were interviewed in detail about their migration history, labour market experience, and their intentions to return home. An important issue concerning a survey of this type relates to the representative nature of the sample. It is always difficult to obtain reliable estimates regarding the number of immigrants illegally residing and working in a host country, and there is always a great degree of uncertainty about the appropriate sampling frame to use. The sample design by necessity tends to be snowballing, with different entry points (i.e., not only respondents but also migrant organisations, local people, local NGOs). This unavoidable constraint renders broad generalisations to the population of Bulgarian migrants in Madrid difficult but, in our view, does not vitiate the analysis undertaken here. The information acquired can inform on the nature of important empirical relationships for the interviewed sample but inferences do need to be tempered by the conditional nature of the sample used.<sup>4</sup>

In order to ensure worthwhile and informative responses, the primary concern of the interviewer was to build trust and understanding with potential interviewees. This was ensured by the fact that the interviewer is a native Bulgarian

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<sup>4</sup> Further details on this survey are contained in Markova (2006).

who initially knew a small number of migrants resident in the southern suburbs of Madrid. These contacts facilitated initial access to locations where Bulgarians gathered, usually in Bulgarian-owned businesses ('phone and money houses' called '*locutorios*'), coffee-shops, restaurants or private houses. Several immigrants were approached through their acquaintances. Further access was gained by personal contact with influential people among the Bulgarian migrant community in Madrid.

The interviews were conducted entirely in Bulgarian and the questionnaire was available in this language. It is acknowledged, as noted earlier, that the foregoing sampling is unlikely to generate a random set of responses. For instance, the selection of individuals is, to some degree, related to their visibility and those that are more actively engaged in ethnic affairs are more likely to be selected for interview. If the unobservable characteristics that encourage engagement in ethnic affairs, for example, are highly correlated with labour market earnings, there is a potential for bias in the estimates of interest to us. There is little that can be done to address this potential problem given the nature of the survey undertaken. However, it could be argued that this limitation is partially counter-balanced by the quality and detail of the information acquired.

An extensive array of information was collected through the interviews, a sub-set of which is exploited in the empirical analysis reported in this study. Table 1 contains a description of the variables to be used and also reports some summary statistics. Our sample comprises responses from 188 Bulgarian nationals who resided in Madrid in the reference month prior to interview and for whom usable information was obtained. The responses for only ten individuals were excluded, as they were not currently working.

Over half of the usable sample was male and half again were married. The sample mean level of potential labour force experience (age minus schooling years minus six) was computed at close to 18 years and the average respondent

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**Table 1:** Variable description and summary statistics

Variable	Description	Mean
Log (Monthly Pay)	The natural logarithm of gross monthly pay.	6.65 (0.61)
Labour Force Experience	An individual's potential labour force measured in years and defined as a respondent's age minus years of schooling minus six.	17.56 (10.41)
Time in Spain (Illegal)	Months spent in Spain illegally.	17.89 (12.57)
Time in Spain (Legal)	Months spent in Spain legally.	11.01 (19.15)
Schooling	Total years in schooling.	12.07 (2.07)
Legal Status	= 1 if legal status in Spain; = 0 otherwise.	0.35
Spanish language	= 1 if speaks well or very well; = 0 otherwise.	0.64
Self-employed	= 1 if in a self-employed job; = 0 otherwise.	0.05
Married	= 1 if married; = 0 otherwise.	0.49
Plan to Return Home	= 1 if plans to return home; = 0 otherwise.	0.53
Log(Hours)	The natural logarithm of weekly hours worked.	3.81 (0.47)
Female	= 1 if female; = 0 otherwise.	0.45
N:		188

*(a) The standard deviations are reported in parentheses for continuous variables only.*

had spent, up to the interview date, about 1.5 years in Spain illegally and just under one year legally, was well qualified educationally and had over 12 years of schooling. Almost two-thirds of the sample reported a good competence in the

Spanish language and about one-third had a legal entitlement to work in Spain. Over half of the respondents planned to return home. The average respondent worked about 49 hours per week, and the average monthly pay was 905 Euros. A modest 5% of the sample reported their labour force activity as being in self-employment.

### **Empirical results**

Table 2 reports the regression analysis estimates for the log earnings equation based on the sample of Bulgarian migrants working in Madrid. The semi-logarithmic form specified for the estimated relationship is influenced by the considerations of human capital theory (see Mincer 1974; Card 1999). The equation fit is satisfactory by the standards of the cross-sectional empirical literature on earnings determination and suggests that almost half of the variation in log earnings is explained by the included set of covariates. Nevertheless, using the Breusch-Pagan test for homoscedasticity, the estimated regression model is found to be heteroscedastic and robust standard errors based on White (1980) are thus used to guide statistical inference.

In line with human capital theory, potential labour force experience is found to raise monthly earnings, though a migrant's formal human capital asset level, proxied by their schooling, is found to exert no independent effect on earnings. This latter finding suggests that the educational qualifications acquired in Bulgaria are poorly valued within the migrants' labour market in Madrid. However, a migrant's time spent in Spain exerts a positive effect on earnings and although there is a differential in point estimates with respect to its legal and illegal constituents, the computed t-ratio provides no evidence for a statistical difference in these estimated effects ( $|t| = 1.324$ , prob-value=0.187). These latter estimates highlight a potential importance for location-specific human capital in determining a migrant's earnings.<sup>5</sup>

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<sup>5</sup> We explored the use of quadratic terms in potential experience and time spent in Spain (both legal and illegal). However, neither attained statistical significance.

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A migrant's competence in the Spanish language is associated, all other variables being constant, with an earnings premium of approximately 13% compared to those without such language skills.<sup>6</sup> The magnitude of this estimated effect is consistent with the findings reported by Chiswick and Miller (1999) for the United States in terms of English language competence. The legal status of a migrant is also found to be an important determinant of earnings and raises the average monthly pay by approximately 25%. In addition, the small number of self-employed in the analysis enjoys sizeable pay rewards compared to their wage employed counterparts.

There is evidence of gender differences in the estimated effects for some variables. In particular, being married impacts positively on the monthly earnings of men, raising their pay by about 16% relative to non-married men, but exerts a negative effect on women, reducing the measure by almost the same amount compared to non-married women. In addition, those women who had planned to return to Bulgaria in the future suffer a monthly pay penalty of approximately 18% compared to other women, but men incur no pay mark-down in this regard. This may be attributable to this particular sub-set of Bulgarian women selecting into poorer paid jobs in anticipation of a more marginal or transient attachment to the migrant labour market in Madrid.

Finally, we use the estimates on the gender and the two interaction variables to compute an overall measure for the gender pay gap in the migrant labour market, when all the other variables are held constant. Using the sample average proportion values for being married (0.49) and planning to return home (0.53) in conjunction with the corresponding OLS estimates and the relevant elements of the White (1980) variance-covariance matrix, the gender pay gap, keeping constant the other variables, is computed at -0.451 (with a

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<sup>6</sup> Given the logarithmic nature of the dependent variable, we translate the  $k^{\text{th}}$  dummy variable effect into a percentage change using the transformation  $\exp[\beta_k - 1] \times 100$  throughout.



standard error of 0.067). Therefore, Bulgarian migrant women in Madrid, earn on average 36.3% less than their male counterparts. This is considerably higher than that found to prevail in the non-migrant Spanish labour market where recent estimates suggest a gender pay gap of the order of 25% (see European Commission 2006).

**Table 2:** Monthly earnings equation estimates for Bulgarian migrants

Variable	Coefficient Estimates	
Constant	5.2168***	(0.3833)
Labour Force Experience (years)	0.0058*	(0.0034)
Time in Spain (Illegal)	0.0081***	(0.0025)
Time in Spain (Legal)	0.0040*	(0.0022)
Schooling (years)	0.0112	(0.0134)
Legal Status	0.2238**	(0.0978)
Spanish Language	0.1212*	(0.0741)
Self-employed	0.3419***	(0.0872)
Married	0.1518*	(0.0863)
Plan to Return Home	0.0155	(0.0818)
Log(Hours)	0.2513***	(0.0677)
Female	-0.1696	(0.1092)
Female × Married	-0.3464***	(0.1227)
Female × Planned to Return Home	-0.2121*	(0.1273)
Adjusted R <sup>2</sup>	0.4900	
Breusch-Pagan Test	53.38***	(0.000)
Number of Observations	188	

Notes: (a) The dependent variable is the log of gross monthly earnings. (b) The estimation procedure is OLS. (c) The standard errors reported in parentheses are based on the White (1980) correction. (d) \*\*\*, \*\* and \* denote statistical significance at the 0.01, 0.05 and 0.1 level respectively using two-tailed tests. (e) The Breusch-Pagan test is distributed as chi-squared with 13 with 13 degrees of freedom.

### **Conclusions**

Our empirical analysis found that almost half of the variation in log earnings could be explained by a standard set of wage determining factors, which compares more than favourably to findings in the existing literature. This does suggest, however, that there is a sizeable variation in the monthly pay of Bulgarian migrants in Madrid. The econometric evidence suggests well-determined returns to location-specific human capital regardless of whether acquired legally or illegally. Potential labour force experience was also found to be important. In comport with the existing literature, a competence in the indigenous language was found to be influential in terms of pay rewards as, not surprisingly, was a migrant's legal status. However, the educational level was not found to influence a migrant's pay suggesting that labour earnings in this particular market are flat with respect to this formal human capital measure. The low valuation the Madrid labour market places on this asset may reflect a perception among employers that it is either of poor quality or lacking in relevance.

Finally, the pervasive and almost universal phenomenon of a labour market pay disparity in regard to gender was also found to feature strongly within this particular labour market. Bulgarian migrant women are found, all other variables kept constant, to pay penalty (36%) compared to their male counterparts. Bulgarian migrant women are found to incur a pay penalty (36%) compared to their male counterparts.

### **Acknowledgement**

This research was financed by the European Commission Marie Curie Individual Post-Doctoral Fellowships Programme 2002-2004. It was conducted during the time when Eugenia Markova was a Post-Doctoral Research Fellow at the Sussex Centre for Migration Research. The authors are especially grateful to the Bulgarian immigrants in Madrid, Spain whose patience and friendly attitude made this work possible. However, the usual disclaimer applies.

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