From guests to hosts: a first whole picture of immigrant-native wage differentials in Spain

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FROM GUESTS TO HOSTS: A FIRST WHOLE PICTURE OF IMMIGRANT-NATIVE WAGE DIFFERENTIALS IN SPAIN

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ABSTRACT

This article analyses the immigrant-native wage differentials in Spain, which only recently has become a host country. The paper exploits the *Earnings Structure Survey 2006*, which is the first nationally representative sample of both foreigner and Spaniard employees. Using the Machado-Mata econometric procedure, wage differentials between locals and foreigners are decomposed into the gap related to characteristics and that due to different returns to endowments (i.e., discrimination). We found that, in absolute terms, the latter component grows across wage distribution, reflecting the existence of a kind of glass ceiling consistent with the evidence of over-education found by previous research.

KEYWORDS: Immigration, Wage differentials, Spain, Quantile regression.

JEL CLASSIFICATION: J71, F22.

1. INTRODUCTION

Three decades ago Spanish was a country of emigrants, with more than 3 million workers abroad (around 10% of total population), whose remittances financed around 10% of imports, contributing to alleviate serious balance of payments constraints (Oporto del Olmo, 1992). Dwarfing all expectations, in barely ten years, this country has witnessed a gargantuan increase in the number of immigrants. According to the *Spanish Censuses*, the proportion of population born abroad rose from less than 2% in 1996 to roughly 12% in 2008, which made Spain the country that experienced the largest increase of non-native population in the European Union during the last decade, apart from Greece and Ireland (Eurostat, 2006). However, there has been not only a radical shift in migration flows, but also a substantial change in the composition of migrant population, which is now predominantly composed by individuals born in countries less developed than Spain. The arise of a so different reality makes interesting to look at how migrant workers are performing in Spanish labour market, characterized by a high employment creation associated to construction and low-productivity services but also a high degree of segmentation and fixed-term contracts.

The aim of this paper is to analyze wage differentials between native and migrant workers in Spain across wage distribution using a nationally representative database. In order to do so, we are able to use a recent earnings survey containing enough observations of migrants, which overcomes the problems present in previous studies. This feature makes the study the first one in providing a whole picture of wage penalties faced by foreign workers in Spain. Furthermore, we improve previous estimations by analytically computing standard errors and interval confidences for wage gaps.

The interest of the Spanish case derives not only from the gargantuan increase of immigration flows experienced by the country during the last decade, but also from the Spaniards' surprisingly rough attitudes towards foreigners according to opinion polls. For example, immigration was considered the most important problem in the country, well above unemployment and housing (CIS,

2006). In addition, most studies on wage discrimination of migrants are centred on Anglo-Saxon, Nordic and Central Europe and Benelux, which have been the main host countries in the OECD during the last decades.

In spite of the relative novelty of immigration flows in Spain, there is some literature dealing with the labour market integration of foreign workers. The pioneering work of Dolado, Jimeno and Duce (1997) points out a negligible effect of migration on labour market outcomes at the beginning of nineties, when the intensity of immigrations flows was very low. A more recent research exploiting several data sources –among others, the *Spanish Earnings Structure Survey 2002*, which does not offer coverage of small firms- report similar findings for the second half of nineties (Carrasco, Jimeno and Ortega, 2008). Other researchers have focused on employment outcomes and occupational segregation of foreign workers, documenting different patterns of labour market integration among foreign-born workers depending both on socio-economic characteristics and country of origin (Amuedo-Dorantes and De la Rica, 2007; Simón, Sanromá and Ramos, 2008). These eventual bad employment outcomes, however, tend to improve along with years of residence in Spain (Fernández and Ortega, 2008). Finally, the work of Canal-Domínguez and Rodríguez-Gutiérrez (2008) is the only one that, to our knowledge, aims to study wage differences between natives and foreigners in Spain, finding a substantial pay gap not explained by observable characteristics and which does not rise across the wage distribution, as in the case of high-educated women –the so-called glass ceiling phenomenon- (De la Rica, Dolado and Llorens, 2008). From our point of view, this work has three main limitations. First, it is based on the *Earnings Structure Survey 2002*, which does not include any information on firms with ten or less workers, which accounts for almost a half of salaried workers in Spain. Second, in 2002 migration flows were not as relevant as they would be later and, according to the *Spanish Labour Force Survey 2002* (2^{nd} quarter), less than 3% of employees had a non-Spanish nationality. Finally, this work does not compute any interval confidence for estimates or other sorts of ways of determining if differentials across the distribution are statistically significant.

Regarding international case studies, there is plenty of evidence of important wage differentials between locals and migrants once we control for observable characteristics. There is no consistent patter across countries. For example, the pay disadvantage faced foreign-born workers is concentrated mainly on the bottom of earnings distribution in Sweden (Hammarstedt and Shukur, 2006 and 2007) and the U.K. (Hunt, 2008) and increases along with wages in the U.S. and Australia (Chiswick, Le and Miller, 2008).

Apart from the role of productivity endowments, several theories can explain the existence of wage differentials between locals and migrants.[1] The departure point is Becker's (1957) view based on employer's tastes: some employers dislike people from other ethnic groups –modelled as a utility loss derived from hiring them- and, in competitive labour markets, if the share of prejudice employers is sufficiently large, foreign workers might earn a lower wage than locals. Theories of statistical discrimination also offer a framework for understanding the existence of wage gaps between natives and migrants based on the lack of information or informational asymmetries (Arrow, 1972a, 1972b and 1973; Phelps, 1972). If there is no perfect information on some migrants characteristics (for example, quality of education) or firms have a worse knowledge about them, employers will tend to base their hiring and pay decisions on observable characteristics of workers, like the ethnic group they belong to. Another interesting perspective of looking at this issue is the idea of monopsonistic discrimination, inspired by Mrs. Robinson's (1933) work on imperfect markets. Drawing on this framework, Barth and Dale-Olsen (2009) suggest that (apparently) unexplained wage differentials are associated to the existence of monopsonistic employers and different labour supply elasticities across population. Other things being equal, those collectives with more rigid labour supplies earn less than otherwise. If migrant workers are employed in sectors where firms have some market power and their labour supply is less elastic than locals one (for example, because a lower access to unemployment benefits and so on), their pay will be lower.

[1] See Arrow (1998) for a comprehensive and didactic review.

The rest of the article unfolds in three parts as follows. Section two provides a briefly description of the database used in the paper. The methodology and results of the empirical analysis are discussed in the third part, while the last one summarizes and discusses the main findings of the paper.

2. DATA

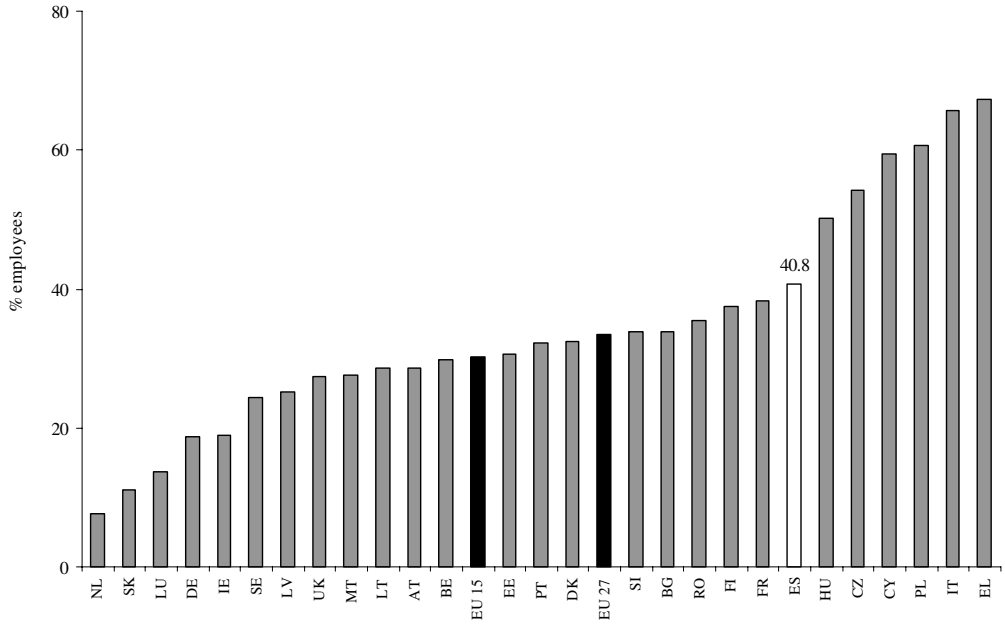
Previous studies of immigrant-native wage differentials have been constrained by serious data limitations, which, to some extent, are linked to the novelty of modern immigration in Spain. However, it should not be neglected that Spain is a step behind other OECD countries regarding data sources for analyzing labour market and social outcomes.

This work is based on the *Earnings Structure Survey 2006* (EES), released by the Spanish National Statistics Institute on December 2008.[2] The EES presents several advantages over previous databases. Firstly, while neither the *European Community Household Panel* nor the *Social Statistics on Living Conditions* (SILC) –i.e., the household surveys containing information on labour income from the middle-nineties- provide an enough large and representative sample of foreign works, the EES includes a sample of local and foreign-born employees representative at national level and whose size can be considered appropriate for analysing foreigners outcomes in isolation. For example, we have more than 10,000 employees born outside the European Union, which is a sample size higher than the whole SILC. In addition, the EES is based on administrative registers of employers, which, as Cowell (1995) points out, increases the reliability of wage data. In the second place, the EES 2006 overcomes evident limitations of the previous wave of the survey, carried out in 2002. Firstly, the EES 2002 only contains information on workplaces with ten or more employees, an important shortcoming considering the undeniable relevance of small firms in Spain, where more than 40% of total salaried workers are employed in firms with less than ten

[2] Details on sample design and questionnaires can be found in INE (2008a and 2008b).

workers, being one of the countries where small and medium-enterprises account for a largest share of employment in the European Union (figure 1).

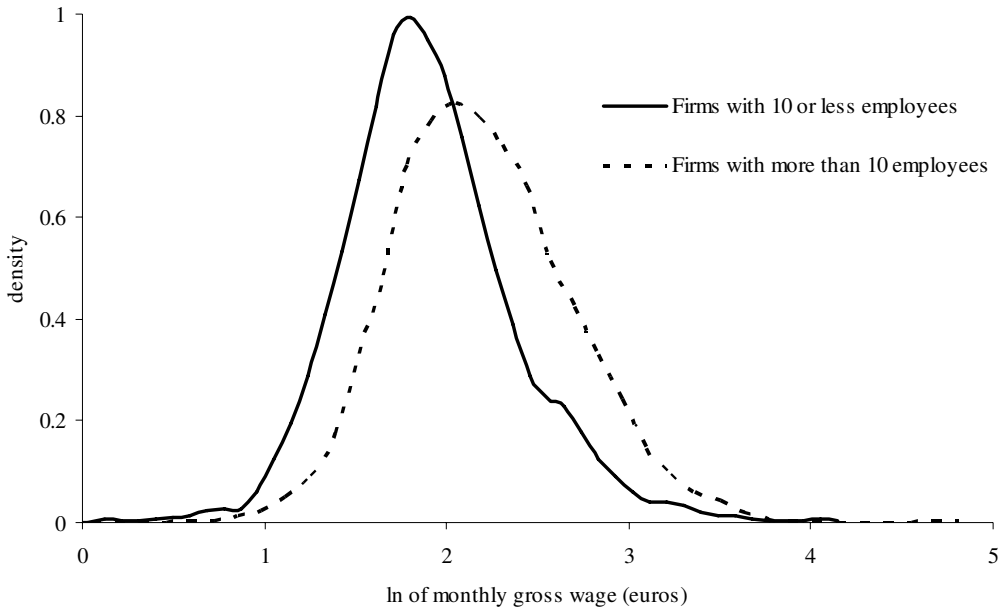
Figure 1. Percentage of employees working in firms with less than ten workers (2006-2007)



Source: Authors' analysis from *2007 Observatory of European Small and Medium Enterprises Survey*.

In addition, this shortcoming might be especially problematic, since, according to data from the 2006 SILC, foreign workers are over-represented in small firms: while roughly 40% of native employees work in an enterprise whose size is ten or less, the proportion of migrants is above 55%. Therefore, it is possible to be a selection bias, which, if it is based on unobservable characteristics or observable covariates not included in econometric analyses of wages. As an illustrative of these possible problems, figure 3, computed from 2006 SILC micro-data, depicts the wage distributions of workers working in firms with ten or less employees and those salaried individuals in the rest of enterprises.

Figure 2. Wage distributions by firm size (2006)



Source: Authors' analysis from 2006 SILC.

Furthermore, even if this non-negligible problem were absent, the gargantuan increase of foreign population in Spain from 2002 to 2006, makes clear that the issue on which this paper is focused deserves a new look anyway. Particularly, according to the *Spanish Labour Force Survey*, while in 2002 people with a nationality other than Spanish represents less than 3% of working population aged between 25 and 55, in the 2nd quarter of 2006, this group accounts form more than 7% of the reference group.

The database, though meaning a remarkable improvement over previous sources of information, presents also some shortcomings. In the first place, those people working in the informal sector and employees without a work contract are obviously not included in the survey, since these activities are not legal. The same applies to undocumented foreign individuals. Nevertheless, these problems are probably common to all these sorts of data sources.

One relevant issue involves the choice of the wage measure to be used in the empirical analysis. It is well-documented that migrants are usually employed

in jobs involving involve harder tasks or worse working conditions that can contribute to reduce wage premia if the principle of compensating differentials (at least partially) applies. Therefore, in order to estimate discrimination more precisely, we exclude bonuses associated to dangerous working conditions, night shifts and supplementary hours from our measure of wage.

In the second place, it is worthy mentioning that we limit our analyses to men between 25 and 55 years old for two different reasons. The first one is related to the potential double discrimination suffered by foreign women because their condition of both females and migrants. Second, as our database only contains information on employees, there is likely to be some selection bias based on unobservable characteristics. By restricting our analysis to the group with higher employment rates, we try to minimize this bias.

A final point that requires some discussion is the definition of migrant. The common approach is to consider as migrants those born abroad, as long as naturalization rules can differ depending on the country of birth because of special agreements with former colonies and so on. This is, for example, the case of most Latin American workers living in Spain. Unfortunately, this variable is not available in our database, so we have to use citizenship as a proxy for migrant status. An additional refinement is made: we only categorize foreigners as migrants (and, hence, compare with Spaniards) those people with a nationality from geographical regions that, on average, have a lower level of development than Spain. In the EES 2006, these cases correspond to South America, European countries not belonging the European Union, Oceania, Asia and Africa. Furthermore, the rest of countries are not largely represented among immigrants and Spaniards tend to associate migrants to people from poorer countries, not from other EU rich members or the U.S. or Canada.

As a result, our sample comprises more than 96,000 observations, of which almost 90,000 correspond to Spaniards and approximately 6,200 are foreign workers.

3. EMPIRICAL STRATEGY

This section is divided in three parts. The first one describes the Machado-Mata procedure to decompose gaps across the whole wage distribution, while the second one briefly summarizes the main descriptive statistics of the variables used in the analysis. Lastly, we present the main results of the empirical analysis and discuss their implications.

3.1. THE MACHADO-MATA DECOMPOSITION

The seminal contributions made by Oaxaca (1973) and Blinder (1973) propose relative simple econometric techniques to decompose the average gap into a component related to observable endowments and another one associated to differences in characteristics (interpreted usually as a measure of discrimination in labour market studies). The main shortcoming of this approach is related to the fact that the gap in a certain outcome between two groups is likely to not be constant across the whole distribution of the outcome. For example, a null mean gap can be simply the average of large gaps at the tails, which obviously have very policy implications than the absence of discrimination.

Mainly from Labour Economics, several approaches have been proposed to address this issue and compute the gaps conditioned on observable characteristics across the whole wage distribution.[3] We follow the approach firstly proposed by Machado and Mata (2005), though we apply their method following the slightly modified but equivalent version suggested by Albrecht, Björlund and Vroman (2003) and De la Rica, Dolado and Llorens (2008). The basic idea is to construct the counterfactual migrant's wage distribution that arose if they retained

[3] Other ways of analyzing unexplained wage gaps across the whole distribution have been proposed by DiNardo, Fortin and Lemieux (1996), based on semiparametric estimation methods, and Gardeazábal and Ugidos (2005) and Melly (2006) using quantile regression.

their characteristics but those endowments were remunerated as local labour force. [4] In more detail, the procedure unfolds as follows:

1) Estimate quantile regressions for 99 percentiles using the native-born employees' dataset.[5]
2) For each quantile, take a draw from the locals' sample and compute the predicted log wage for native-born employees at each quantile q, i.e., $x^n b^n(q)$. Repeat the process for the migrants' database, calculating the predicted log-wage $x^m b^n(q)$.
3) Repeat step three M times and, in this way, get a counterfactual distribution of immigrants that reflects their remunerations if they were paid as locals and the predicted distribution of migrants retaining their characteristics and specific returns.
4) Profiting from the linearity of quantile regression, calculate the counterfactual gap, that is, the wage differential associate to coefficients, as $x^m b^n(q) - x^m b^m(q)$.

One task seldom addressed in Spanish literature is the computation of standard errors or interval confidence for the counterfactual gap, a non-negligible issue in order to test if gaps at different quantiles are significantly different from zero.[6] Two different ways have been proposed in the literature: bootstrapping or deriving an asymptotic expression for the covariance matrix (Albrecht, Van Vuuren and Vroman, 2009). To compute bootstrapped standard errors with large samples might be computationally cumbersome[7], so we have used the latter procedure, which, as far as we know it has only been implemented by Albrecht and their coauthors. The relevant issue here is to compute the variance of the difference between the predicted quantiles of the unconditional counterfactual

[4] We evaluate the gap at natives' coefficients, such as De la Rica, Dolado and Llorens do when they address gender discrimination. On the contrary, Albrecht, Björlund and Vroman (2003) use the potentially discriminated group –in their work, women- as the reference group. Using this alternative assumption, we obtained qualitatively similar results. Estimates are available from the authors on request.

[5] We applied a slightly modified version of Machado-Mata's method, as they take random draws from an uniform distribution between 0 and 1. Both approaches are equivalent in large samples.

[6] De la Rica, Dolado and Llorens's (2008) work is a remarkable exception to this trend.

[7] For example, with our database, it took us more than two hours to run the model in Stata once.

distributions. According to Albrecht, Van Vueren and Vroman (2009), the variance of $\theta_{mn}(q) - \theta_m(q)$ is given by

$$Var\left[\theta_{mn}(q) - \theta_m(q)\right] = \frac{1}{99M}\left\{\frac{q(1-q)}{f_{nn}\left[\theta_{mn}(q)\right]^2} + \frac{q(1-q)}{f_m\left[\theta_m(q)\right]^2} - 2\frac{q(1-q)}{f_{mn}\left[\theta_{mn}(q)\right] f_m\left[\theta_m(q)\right]}\right\} \quad <1>$$

This variance can be consistently estimated using the predicted quantiles, $\hat{\theta}_m(q) = x^m b^m(q)$ and $\hat{\theta}_{mn}(q) = x^m b^n(q)$ -which Albrecht and his co-authors prove to be consistent estimators of the true quantiles $\theta_m(q)$ and $\theta_{mn}(q)$- and estimating by kernel density $f_{mn}(\cdot)$ and $f_m(\cdot)$, which represents the density functions of the counterfactual distributions evaluated at each percentile. Obviously, the population density functions are not known; however, as long as the sample is large, it is possible to estimate them using kernel density methods.[8] Note that standard errors for the difference between $\hat{\theta}_m(q)$ and $\hat{\theta}_n(q)$ will be larger, since they are not correlated and, hence, the covariance is null.

The procedure described above allows computing not only the estimated gap at each quantiles, but also determining if those differentials are statistically significant.

Regarding quantile regressions, following Koenker (2005), the model to be estimated can be expressed in the following way:

$$Y(q) = x\beta(q) + \varepsilon(q) \quad <2>$$

where Y denotes monthly gross wages (in logs), x includes a set of employee's observable characteristics, β_q is the parameter to be estimated, which captures the proportional wage change in the q^{th} quantile conditional on x and ε_q is a disturbance satisfying $E(u(q) \mid x) = 0$. Therefore, one can write conditional population quantiles $Quant_q(Y \mid X = x)$ as

[8] Particularly, we use a Gaussian kernel and the optimal bandwidth suggested by Silverman (1986).

$$Quant_q(Y \mid X = x) = x\beta(q) \qquad <3>$$

β can be consistently estimated by minimising the sum of weighted absolute deviations using q and 1-q as weighting factors for positive and negative errors, respectively. Finally, the set of covariates includes age, squared age, education, tenure, firm size and regional dummies.

3.2. DESCRIPTIVE STATISTICS

The main descriptive statistics of the sample used in the analysis are reproduced in table 1. They basically indicate that migrants are younger and have lower stocks of human capital –educational level and tenure- than nationals. In addition, foreign workers tend to be concentrated in small and medium-size firms.

Table 1. Main descriptive statistics

	Spaniards		Migrants	
	Mean	Standard deviation	Mean	Standard deviation
Hourly gross wage (euros)	7.08	4.51	5.46	2.17
Age	38.48	8.42	35.04	7.29
Tenure	7.15	8.20	1.48	1.99
Less than primary education	0.0673	0.2505	0.2018	0.4013
Education				
Primary education	0.1955	0.3966	0.4270	0.4947
Lower secondary education	0.2892	0.4534	0.2265	0.4186
Upper secondary education	0.2558	0.4363	0.1001	0.3001
University	0.1922	0.3940	0.0448	0.2068
Firm size				
Less than 50 employees	0.5874	0.4923	0.7799	0.4143
Between 50 and 199 employees	0.1891	0.3916	0.1452	0.3523
200 employees or more	0.2235	0.4166	0.0749	0.2632

Source: Authors' analysis from ESS 2006.

3.3. ECONOMETRIC RESULTS

Selected quantile regressions (at the 10th, 25th, 50th, 75th and 90th percentiles) for Spaniards and migrants are presented in table 2 and 3, respectively.

Table 2. Estimated results for quantile for male native-born employees (2006)

	Coefficients (standard errors in brackets) by percentile				
	10th	25th	50th	75th	90th
Age	0.009 ***	0.008 ***	0.009 ***	0.017 ***	0.025 ***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)
Squared age	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (less than primary education=0)					
Primary education	-0.008	-0.006	0.000	0.014 *	0.043 ***
	(0.008)	(0.006)	(0.006)	(0.008)	(0.013)
Lower Secondary education	-0.005	0.007	0.014 **	0.021 ***	0.044 ***
	(0.008)	(0.006)	(0.006)	(0.007)	(0.013)
Upper secondary education	0.059 ***	0.083 ***	0.114 ***	0.183 ***	0.290 ***
	(0.008)	(0.006)	(0.006)	(0.007)	(0.013)
University education	0.228 ***	0.285 ***	0.392 ***	0.578 ***	0.715 ***
	(0.008)	(0.006)	(0.006)	(0.008)	(0.014)
Tenure	0.005 ***	0.006 ***	0.007 ***	0.010 ***	0.013 ***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm size (less than 50 employees=0)					
50-199 employees	0.007	0.020 ***	0.022 ***	0.031 ***	0.050 ***
	(0.004)	(0.003)	(0.003)	(0.004)	(0.007)
200 or more employees	0.027 ***	0.043 ***	0.081 ***	0.147 ***	0.175 ***
	(0.005)	(0.003)	(0.003)	(0.004)	(0.007)
Observations	8,970	8,970	8,970	8,970	8,970
McFadden R^2	0.057	0.078	0.127	0.197	0.222

*** significant at 1%; ** significant at 5%; * significant at 10%.

Note: An intercept and seventeen regional dummies are also included in all regressions.

Source: Authors' analysis from ESS 2006.

Table 3. Estimated results for quantile for male foreign-born employees (2006)

	Coefficients (standard errors in brackets) by percentile				
	10th	25th	50th	75th	90th
Age	0.001	-0.003	0.000	-0.015 ***	-0.014 *
	(0.005)	(0.005)	(0.003)	(0.004)	(0.008)
Squared age	0.000	0.000	0.000	0.000 ***	0.000 *
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (less than primary education=0)					
Primary education	0.006	-0.006	-0.007	0.016 *	0.008
	(0.010)	(0.011)	(0.007)	(0.009)	(0.018)
Lower Secondary education	-0.008	-0.009	-0.008	0.022 **	-0.005
	(0.011)	(0.012)	(0.007)	(0.010)	(0.018)
Upper secondary education	0.018	0.037 **	0.071 ***	0.089 ***	0.093 ***
	(0.014)	(0.015)	(0.009)	(0.012)	(0.023)
University education	0.059 ***	0.103 ***	0.138 ***	0.326 ***	0.605 ***
	(0.018)	(0.019)	(0.012)	(0.016)	(0.030)
Tenure	0.003	0.007 ***	0.009 ***	0.007 ***	0.023 ***
	(0.002)	(0.002)	(0.001)	(0.001)	(0.003)
Firm size (less than 50 employees=0)					
50-199 employees	-0.021 **	0.001	0.004	0.005	0.024
	(0.009)	(0.009)	(0.006)	(0.008)	(0.015)
200 or more employees	-0.027 **	-0.026 **	-0.015 **	0.010	0.039 **
	(0.011)	(0.012)	(0.008)	(0.010)	(0.019)
Observations	6,240	6,240	6,240	6,240	6,240
McFadden R^2	0.055	0.676	0.050	0.065	0.097

*** significant at 1%; ** significant at 5%; * significant at 10%.

Note: An intercept and seventeen regional dummies are also included in all regressions.

Source: Authors' analysis from ESS 2006.

Estimates of the wage gap associated to differences in returns –that is, the component aiming to proxy for discrimination- are computed following the method described above and presented in table 4 and figures 3 and 4. The counterfactual gap is significantly different from zero across the whole distribution. In general terms, our results point to the existence of increasing wage differentials across the distribution conditioned on endowments; pointing to the existence of a sort of glass ceiling similar to those described for female workers. In fact, previous works have identified a higher degree of over-education among

migrants than among Spaniards (Fernández and Ortega, 2008). At the bottom, the gap is very small, which might be explained by two factors. Firstly, by the existence of compensating differentials not remunerated by specific bonuses but included in the base wage. As long as immigrants' jobs can involve riskier and unpleasant work activities or environments that yield some wage premium, differences at the bottom may be understandably lower. In the second place, our database is limited to formal and legal work relations, so all benefits and constraints associated to labour market institutions apply here. For example, collective agreements and minimum wages (which have considerably risen since 2004) might be contributing to the existence of a lower gap at the bottom by imposing minimum earnings thresholds. However, it is also remarkable that there is slight increase of the pay gap around the 20th percentile, which is not easy to interpret. A possible explanation, following the arguments of Hammarstedt and Shukur (2008) for Sweden, might points to the existence of a group of foreign workers who has just arrived to the country and whose human capital endowments are not fully transferable to the Spanish labour market, a circumstance that could be reinforced by an eventual lack of language proficiency.

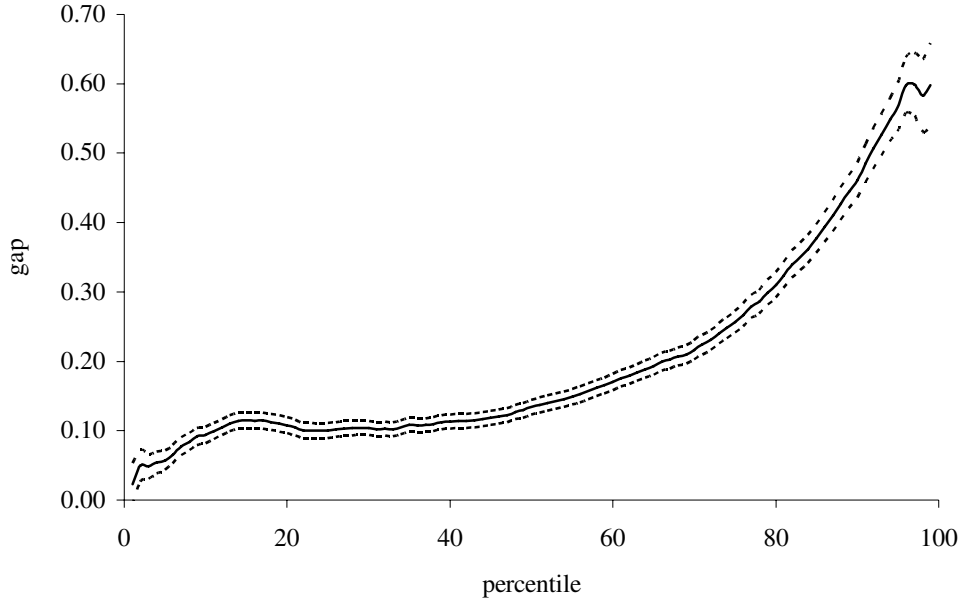
Table 4. Estimated raw and counterfactual wage gaps by percentile between local and migrant employees (2006)

Percentile	Raw gap (Standard errors in brackets)	Counterfactual gap (Standard errors in brackets)
10th	0.094***	0.047***
	(0.006)	(0.001)
25th	0.100***	0.038***
	(0.006)	(0.001)
50th	0.134***	0.027***
	(0.005)	(0.000)
75th	0.257***	0.052***
	(0.008)	(0.001)
90th	0.461***	0.136***
	(0.013)	(0.004)

*** significant at 1%; ** significant at 5%; * significant at 10%.

Source: Authors' analysis from ESS 2006.

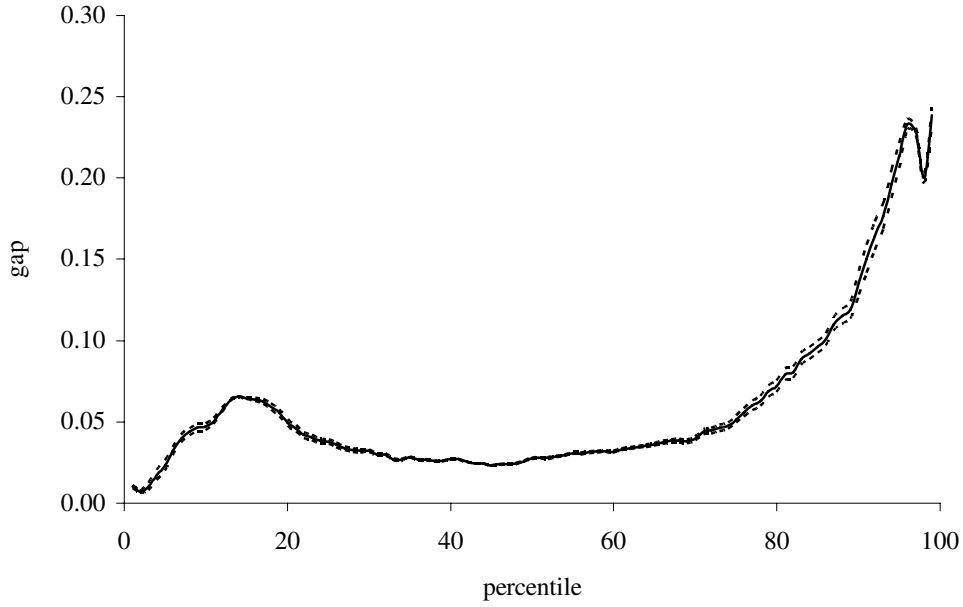
Figure 3. Raw wage gap between local and migrant employees in Spain (2006)



Note: Dotted lines depict 95% confidence intervals for estimated wage gap.

Source: Authors' analysis from EES 2006.

Figure 4. Wage gap explained by differences in returns between local and migrant employees in Spain (2006)



Note: Dotted lines depict 95% confidence intervals for estimated wage gap.

Source: Authors' analysis from EES 2006.

4. CONCLUSIONS

Immigration has become an increasing relevant phenomenon in Spain, a country that had been country of emigrants until few years ago. In this paper, we have analyzed the native-immigrant wage gap across the whole distribution using the M-M decomposition. The main contribution of the paper has been for first time to address the issue using a representative survey of labour force and not limiting the scope of the analysis to large firms, which are not numerous in Spain and among which foreign-born workers are under-represented. In addition, standard errors for counterfactual gaps have been also estimated, a task neither addressed by previous researches on the topic in Spain nor by most other national case studies.

The main finding of the paper is the existence of a relevant glass ceiling for foreign workers from developing countries living in Spain, that is, the wage gap significantly grows across wage distribution.

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