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**Article**

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## Raining stones? Female immigrants in the Spanish labour market\*

*¿Lloviendo piedras? La situación de las trabajadoras inmigrantes en el mercado de trabajo español*

JOSÉ-IGNACIO ANTÓN\*\*

RAFAEL MUÑOZ DE BUSTILLO\*\*

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### Abstract

*The aim of this paper is to analyse how female migrants fare in the Spanish labour market, a country that has experienced impressive immigration flows during the last decade. Particularly, we explore the differential access to employment and the earning gap faced by this group, considering the interaction between two potential sources of disadvantage for migrant women: gender and migrant condition. Our findings suggest that migrant women do face this double disadvantage. In both cases, we find an economically significant gap, at least for migrants from developing countries. Regarding the former, the larger unemployment rate of female migrants is not explained by observable characteristics. In the case of earnings differential, although human capital endowments play a relevant role, both the unexplained earnings penalty associated with gender and migrant status slightly rise across the distribution of wages.*

Keywords: *Immigration, Women, Spain, Unemployment, Earnings.*

JEL Classification: *J31, J71.*

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## Resumen

*El objetivo de este trabajo es analizar la situación de las trabajadoras inmigrantes en el mercado de trabajo de España, un país que ha experimentado unos impresionantes flujos migratorios durante la última década. En particular, se estudian las diferencias en materia de acceso al empleo y la penalización salarial a la que se enfrenta este colectivo, considerando la interacción entre dos potenciales fuentes de desventaja laboral: el género y la condición de inmigrante. Los resultados obtenidos sugieren que las mujeres inmigrantes soportan una doble desventaja. En ambos casos, encontramos una brecha económicamente significativa, al menos para las inmigrantes de los países en desarrollo. En relación con la primera de las brechas, la mayor tasa de desempleo de las inmigrantes no se explica por características observables. En el caso de las diferencias salariales, aunque las dotaciones de capital humano se muestran como relevantes, la brecha salarial no explicada asociada al género y a la condición de inmigrante se incrementa a lo largo de la distribución salarial.*

Palabras clave: *Inmigración, Mujeres, España, Desempleo, Salarios.*

Clasificación JEL: *J31, J71.*

## 1. INTRODUCTION

The aim of this article is to analyse the performance of female immigrants in the Spanish labour market before the crisis, in 2006, exploring, particularly, the differential access to employment and the earnings penalty faced by this group. Our work is thus mainly concerned with the detection and measurement of these male-female and native-migrant gaps in unemployment rates and earnings. We explore the interaction between two potential sources of disadvantage for migrant women: gender and migrant condition. In order to assess whether migrant women face this double disadvantage, the performance of foreign women is compared with the situation of native males and females. In order to do so, we use two econometric decomposition techniques –a non-linear variant of the so called Oaxaca-Blinder approach (Oaxaca, 1973; Blinder, 1973) and the Machado-Mata decomposition (Machado and Mata, 2005)– that allow decomposing gaps in those differences explained by observable characteristics and those associated to the returns of such characteristics or not explained by observable endowments.

The article makes several contributions to the literature. First, to our knowledge is the first time foreign females are placed at the forefront of the analysis of Spanish immigration, in contrast to most of the available empirical literature, which only refers to the total foreign or even male population, ignoring in all cases the possibility of a double disadvantage for migrant women. Furthermore, compared to previous papers limited to the study of the double disadvantage in earnings, we focus on both unemployment and wages. Second, when analyzing differences in unemployment, we update previous evidence on immigrant employment based on 2001 data (when the share of immigrant was a half of that in 2006), applying an econometric decomposition technique (a non-linear

variant of the well-known Oaxaca-Blinder method) not previously used to study this issue. Third, when studying the double disadvantage in pay, this article is, to our knowledge, the first one in exploring the topic decomposing the gap across the whole earnings distribution (in contrast with previous literature that only explores differences at average wages). Finally, for the first time in the literature, the native-migrant pay gap in the domestic service sector (an important source of migrant employment) is explored in detail.

The paper focus on identifying and measuring the existence and magnitude of the female immigrant unemployment and wage gaps, being out of the scope of the paper the discussion of the reasons behind the existence of such gaps not explained by observable characteristics of workers. However, based on previous literature on this topic, we provide some insight on the possible reasons that could lay behind the observed patterns<sup>1</sup>.

The topic addressed here is relevant not only from a Spanish or European perspective, but also for a broader international audience for several reasons. Firstly, Spain (along with Ireland and Greece) represents an unparalleled case of a country that in barely three decades turned from being a land of emigrants to becoming one of the main immigrant receiving countries of the Organisation for Economic Co-operation and Development (OECD). In fact, Spain was historically a country of emigrants up to the mid-1970s, when the population flows to European countries were stopped by the restrictions to immigration imposed by the host states in a context of economic crisis and rising unemployment. However, since the mid 1990s, this country has witnessed an unparalleled arrival of immigrants, mainly coming from Latin America and the Caribbean, the Maghreb, and Bulgaria and Romania.

Secondly, the Spanish peculiarity also applies to the pace of the migration flows received. The rapid growth of the Spanish economy since the mid-1990s, together with the sluggish economic growth in Latin America and the Caribbean and Eastern Europe, led to an impressive increase in foreign population in Spain, in both absolute and relative terms. As a result, according to Local Population Registers, in barely a decade, the percentage of foreign population in Spain rose from less than 1.5 percent in 1996 to 12.2 percent in 2010. According to information from the United Nations Migration Database, this shift places Spain at the top of the European Union in terms of share of foreign population, ahead of “classic” immigration countries such as Germany (with 13.1 percent of foreign population in 2010), the Netherlands (10.5), France (10.7), or the UK (10.4). Moreover, whereas the high immigration rate (foreign-born population over total population) in these countries is the product of several decades of immigration, in the former case is the result of barely ten years of immigration. It is reasonable

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<sup>1</sup> The existence of such disadvantages for female foreign workers can be explained by several theories. The main source of these differentials might be associated to the limited transferability of immigrants’ skills, which result in occupational segregation and higher levels of over-education among foreign workers than among natives (Chiswick and Miller, 2008 and 2009). In addition, the mentioned gaps can also be explained by discrimination theories, whether they have to do with employers’ preferences (Becker, 1957), imperfect information (Arrow, 1972) or even imperfect competition (Manning, 2003). A more detailed survey of possible explanations for unexplained differences in the labour market can be found in Antón *et al.* (2010b).

to assume that the fast process of immigration will affect the assimilation of immigrants to the Spanish labour market. Furthermore, this impressive increase of immigration flows has not been male-dominated<sup>2</sup>.

The third reason for which the Spanish case deserves attention has to do with the Spanish-speaking condition of an important proportion of migrants, who arrived from Latin American and Caribbean countries (often descendants of former Spanish emigrants to America) and share some cultural elements with Spanish native population. In this framework, an interesting question to address is how these men and women perform in the land of their ancestors compared to other groups of foreigners without this shared cultural and linguistic background. The fourth reason why the Spanish case deserves some interest is that most of previous studies about labour market disadvantages faced by female migrants were carried out for Anglo-Saxon and other Central European countries, often with a higher level of development, lower unemployment rates, different institutions and a different functioning of the labour market.

Finally, the Spanish case is also important from a different perspective. Spain is not only a latecomer in terms of immigration, but also in terms of the incorporation of women into the workplace. Due to the late modernisation of the Spanish economy and the late democratisation of its political institutions, the increase in the female labour force participation rate in Spain took place much later than in other high income OECD countries. For example, according to the World Development Indicators (World Bank 2010), in 1980 the labour force participation rate of Spanish women was only 33 percent (making women less than 1/3 of total employment) compared to values around 55 percent for France or the UK, and almost 62 percent for the US. In contrast, 25 year later, the female labour force participation rate had increased to 58 percent, reducing the gap with France to less than 5 percentage points (12 with the US). This is important because in Spain the inflow of immigrants has taken place at a time of high growth in the (local) female labour force.

As we mention before, most of the studies on the potential existence of labour market disadvantages of female immigrants were done for Anglo-Saxon and other high income European countries such as the US, Canada, Norway and for some specific foreign groups in Denmark. For the US, Field-Hendrey and Balkan (1991), after correcting for selectivity bias and the lack of work history data in the census show that female immigrants have initially lower earnings, catching up within about ten years. In the Canadian case, the study by Shamsuddin (1998), after improving previous analyses employing a decomposition approach, concludes that foreign-born women suffer from double-negative discrimination, though gender discrimination dominates discrimination by birthplace. In the case of Denmark, Husted *et al.* (2000) find that all women are affected by substantial gender discrimination in wages, but only Pakistani women experience a double-negative effect. Such effect it is clearly not present for other groups of immigrants. Last, Hayfron (2002), in a work focused on Norway, concludes that

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<sup>2</sup> However, this pattern is not uniform across nationalities. For example, while African or Asian women represent only one third of immigrants of both regions, in the case of people from European countries (other than EU members) and Latin America and the Caribbean, females account for roughly 55 percent of the total.

women immigrant face a double negative effect in terms of earnings compared to native men, being the gender effect more important than the ethnic effect. This literature is mainly concerned to the detection and measurement of eventual unexplained negative effects suffered by immigrant workers, which is mostly considered as an empirical issue with an impact that can be different across countries, although the most of recent research seem to support their existence at least for some of immigrant groups. However, several studies for Canada and the US do not share this result. For example, Long (1980) for the US and Beach and Worswick (1993) for Canada, found that the wages of immigrant women, conditional on their characteristics, were higher than that of native women, thus rejecting the hypothesis of a double-negative effect on the wages of immigrant females. In section 4, we comment on how our findings compare with those reported in the previous literature on the issue.

Regarding previous works on migrants for the Spanish case, although the gender wage gap in this country has also been studied both from a national perspective (De la Rica and Ugidos, 1995; García *et al.*, 2001; Gardeazábal and Ugidos, 2005; De la Rica *et al.*, 2008) and from a comparative approach (Arulampalam *et al.*, 2007; Gradín *et al.*, 2010), labour market outcomes of migrant women in Spain had not received any particular attention from researchers, who usually focused their interest on the overall foreign-born population<sup>3</sup>. Recent examples of research on wage differentials and immigration, like the papers of Simón *et al.* (2008), Canal-Domínguez and Rodríguez-Gutiérrez, or Antón *et al.* (2010a and 2010b), though documenting the issue of the earnings gap between migrants and natives not explained by human capital endowments, do not address the possibility of a double negative effect on female migrants' outcomes. In addition, there is an increasing body of research analysing the assimilation process of immigrants to the Spanish labour market, pointing out to a higher employment rate (percent of total working age population who is employed) among immigrants than among natives and finding a certain convergence in terms of employment rate and a more limited evidence of progression in terms of occupational levels (Amuedo-Dorantes and De la Rica, 2007; Alcobendas and Rodríguez-Planas, 2009) and earnings (Izquierdo *et al.*, 2009)<sup>4</sup>.

The rest of the paper unfolds in three additional sections as follows. The next section is devoted to present the main characteristics of the databases used in the analysis. Section three outlines the methodology used for analyzing the disadvantages faced by migrant women in the labour market. Foreign females might face two potential sources of disadvantages: the first is related to the process

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<sup>3</sup> To be honest, in Spain there is a rich tradition of immigration studies from a gender perspective, but mostly from a sociological approach. In this respect, Soriano (2006) provides a qualitative analysis on the cultural and social assimilation of Moroccan women. It is also worth mentioning the work of Colectivo IOE (2001), who presents a general review of women, immigration and work. These authors present descriptive evidence suggesting that, in raw terms, female immigrants are paid less than nationals and enjoy worse working conditions.

<sup>4</sup> In addition, there are also studies on the effect on immigration on natives' labor market outcomes (Carrasco *et al.*, 2008; Amuedo-Dorantes and De la Rica, 2009; González and Ortega, 2011), finding, in general, that immigration has not affected negatively native employment perspectives or wages.

of access to the labour market for those people looking for a job; the second, once employed, derives from the risk of earning a lower wage for otherwise equal observable characteristics. Following this two-step approach, we explore whether female immigrants face a differential risk of unemployment compared to the risk faced by national men and women. Then, earnings differentials associated with both gender and migrant/national status are explored. Finally, section 4 summarizes the main conclusions of the work.

## 2. DATA

The analyses performed in this work are based on two different sources of micro-data: the Labour Force Survey 2006 (LFS 2006) and the Wage Structure Survey 2006 (WSS 2006). These sources are described in detail below.

The Labour Force Survey is the most widely used database for analysing the patterns of labour market participation in Spain. It has a large sample size and follows a two-stage stratified sampling design. Although it does not include any information on earnings, this survey, carried out by the National Statistics Institute since 1968, comprises detailed information on the socio-demographic characteristics of the working-age population. Micro-data are available on a quarterly basis at the website of the National Statistics Institute ([www.ine.es/en](http://www.ine.es/en)), where the interested reader might also find extensive information on technical features of the LFS, including the questionnaire (INE, 2005 and 2008a).

Regarding the definition of migrant, the LFS offers two useful alternatives for this research: country of birth and citizenship. Since naturalisation rules in Spain vary considerably across country of origin and returned emigration to Spain is negligible, there is a case for favoring the former criterion over the latter. Nevertheless, as explained below, nationality is the only variable available when studying wage differentials. Thus, for reasons of methodological consistency, the analysis performed hereafter is based on citizenship. Another pertinent clarification refers to the definition of unemployment. Unlike the official definition of unemployment status, which limits itself to jobless people who are actively looking for a job and quote at least two different job search methods, we work with a wider definition of the unemployed population that comprises all persons who are not currently employed but are willing to work, which includes, for instance, discouraged workers<sup>5</sup>.

Although micro-data are available for the 3<sup>rd</sup> quarter of 2011, in order to explore the pattern of employment participation in a non-crisis situation, the database of 2006, just before the important downturn suffered by the Spanish economy (which has raised unemployment up to 21.5 percent in October 2011), is used here. Aiming to maximise the size of the available sample, the four quarterly waves carried out each year are pooled, resulting in roughly 290,000 observations of working-age individuals, with almost 20,000 foreigners.

The Wage Structure Survey 2006 is the main and most detailed source of information on labour earnings in Spain. Carried out by the National Statistics

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<sup>5</sup> The LFS includes a variable that allows identifying discouraged workers. The use of the standard definition does not affect the results.

Institute on –approximately– a four-year basis and with a two-stage stratified sampling design, it contains information on monthly and annual wages earned by salaried employees in 2006 (INE, 2008b). Its sample exceeds 150,000 observations, which means it has a significant advantage over other databases, like the much smaller national household survey, the Survey on Living Conditions, and the previous editions of the WSS, limited to firms with 10 or more employees (which excluded almost 40 percent of the total employed population in Spain that is employed in firms with less than 10 employees)<sup>6</sup>. The micro-data of this survey are also available at the National Statistics Institute website and customised samples can be obtained through it. One important feature of this database is that the information on earnings is provided by employers on a mandatory basis and it comes from their registers, so it is less likely to be affected by measurement error.

The only variable specifically referred to migrant status is nationality, which we therefore used as the only criterion for defining migrant status in this research. Though this might be considered as a shortcoming, such a limitation will be minor considering that the bulk of migration flows are concentrated between 2000 and 2005 and it is reasonable to assume that by 2006 there was literally no time for a relevant process of naturalisation of immigrants to occur. Moreover, using the LFS 2006 (which includes both country of birth and citizenship) the correlation between having a foreign nationality and being born abroad is above 90 percent.

It should be mentioned that this database presents a relevant shortcoming when looking at the female labour force and particularly migrant women. Being an establishment survey, it does not include workers in private households, namely domestic service. This absence is especially relevant for the study of wage gaps in Spain, as, according to Eurostat data, this country has the highest percentage of female employment in this sector of the EU-15, 7.9 percent<sup>7</sup>. Moreover household service is an important source of employment for immigrant women: according to the LFS, more than half (57 percent) of workers in this sector of activity are immigrants<sup>8</sup>. In order to minimize this problem, we provide estimates of wage gaps for household service using an alternative *ad-hoc* survey. In second place, the WSS 2006 does not cover firms in agriculture, hunting, forestry and fishing,

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<sup>6</sup> For example, the Living Conditions Survey, which comprises a more detailed set of socio-demographic characteristics, barely includes 700 observations of foreign-born employees.

<sup>7</sup> EU-15 includes the member states before the last two accessions (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the UK). EU-27 includes EU-15, the countries that entered the EU in 2004 (Czech Republic, Slovakia, Poland, Hungary, Slovenia, Estonia, Lithuania, Latvia, Malta and Cyprus) and Romania and Bulgaria (which entered in 2007).

<sup>8</sup> There are several papers addressing the question of immigration and domestic service in Spain. In most cases, they adopt an immigrant-centered perspective, so, although they are very illustrative of the working conditions of immigrants in the sector, they are not very useful from the comparative perspective followed in this paper. Examples of such literature are Anderson (2000), Escrivá (2000), Catarino and Oso (2000), Aguilar (2005) or IMSERSO (2005), for the subsector of older dependants. A good summary of the characteristics of the sector from the immigrant perspective can be found in Parella (2003). In contrast, in Colectivo IOÉ (2001), we can find a broader analysis of immigrant workers in the domestic service with the advantage, this time, of including information about national workers, too.



so the results presented in this article are only representative for the rest of the economy. Fortunately, this is a minor problem, as long as those sectors are less and less important in terms of employment in Spain, with only 4.75 and 4.11 percent of total employed population and migrant women aged between 16 and 60 years old employed in those sectors, respectively.

In third place, this firm survey only includes information on individuals, so household and family characteristics such as marital status or number of children are not available in the WSS. If these variables affect wages in a significant way, estimators might not be consistent and, as a result, we could be overstating the gap associated to differences in returns. In other words, the effect of such factors will be logically confined to the unexplained part of our models. In this respect, our results might be considered an upper bound estimate of the gap not explained by observable characteristics<sup>9</sup>. Anyway, one should keep in mind that our main aim is to determine the extent of the gaps after controlling for basic human capital variables (age, tenure and education) and other covariates related to the economic structure with sound theoretical underpinning, rather than try to control for every possible observable variable available in the databases<sup>10</sup>.

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<sup>9</sup> Nevertheless, we have tried to assess the relevance of this issue replicating the analysis of earnings gap at the mean values using the Survey on Living Conditions 2006. This survey is less suitable for our purpose as contains a relatively small sample of migrants (barely 350 migrant men and 350 foreign-born females), information is more likely to be subject to measurement error (as earnings are reported by workers themselves), it is not possible to distinguish between private and public sector employees and a key human capital variable like tenure is not available, but allows to test the impact of including the marital status in the analysis of the wage gaps. Using this database, we have checked how the average unexplained gaps change when marital status is considered, finding that both the effect of this covariate on gender and native-migrant gaps is negligible. In any case, one has to bear in mind that the explanatory causes for the married wage premium are far from clear. A first perspective suggests that marriage allow some within-household specialization (men can devote more effort to wage-earning when their wives assume responsibility for household labor). A second one argues wage premium to marriage is associated to unobserved individual heterogeneity, existing even a reverse causality and a process of signaling: men with higher skills are more likely to be married and are paid more (because they have higher skills) or even men with higher skills are more likely to be married and employers take marital status as a signal of high skills and pay more to married men. The literature is inconclusive about which hypothesis gets better empirical support. See Bardasi and Taylor (2008) for further details. In any case, these differentials are not related to human capital characteristics and can represent a way of discrimination against women. In addition, if marriage is acting as a signal of a higher productivity for employers, this fact is clearly included in the concept of discrimination supported by the theory of statistical discrimination proposed by Arrow (1972) and Phelps (1972), according to which employers do not have perfect information on productivity and pay or hire according to stereotypes.

<sup>10</sup> In this respect, Barth *et al.* (2004) recommend avoiding ‘over-controlling’ in the analysis of immigrant earnings assimilation”, excluding variables like occupation, actual work experience or union membership, as they are themselves outcomes of the assimilation process. In this respect, we control for variables like sector of activity (which can be subject to the same type of problem), but we have repeated the analyses excluding this variable and this does not alter the results. We have also repeated the analysis including occupation obtaining basically similar results.

In fourth place, as the survey only contains information on employees, therefore we are not able to correct for sample selection on unobservables due to work participation. If a bias exist, the results will be only consistent and representative for the employed population, but not for the whole working-age population.

There is a last relevant feature of the databases that deserves to be mentioned here: unfortunately, the nationality of immigrants is provided in both surveys in a quite aggregate way, that is, the researcher only can know the region of world where the country of citizenship of each immigrant is<sup>11</sup>.

Obviously, all the problems of the WSS are shared by the large amount of literature which has been carried out in Spain and across 27 European countries based in the same database and has nevertheless served as the base for studying inter-industry, gender or racial differentials or even inequality issues. From our point of view, acknowledging the above listed shortcomings, we consider that the WSS is worth using not only because it allows analyses that could not be carried out otherwise (at least in the Spanish case), but also because its data collection methods can be considered as more reliable than those used in most of household surveys.

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<sup>11</sup> There is a last relevant feature of the databases that deserves to be mentioned here: unfortunately, the nationality of immigrants is provided in both surveys in a quite aggregate way, that is, the researcher only can know the region of world where the country of citizenship of each immigrant is. Therefore, thorough the paper, we make reference to several classifications of Spanish immigrants that are mostly imposed by the characteristics of the databases: total immigrant population, Latin American and Caribbean population and immigrants from non-developed countries. In this respect, while Latin American and Caribbean foreigners includes all individuals from Mexico, South America (including Brazil, Central America and the Caribbean, non-developed countries make reference to all other countries apart from European Union states before the last accession, the United States and Canada. There are two issues regarding this taxonomy that should be commented. First, although Brazil is not an Spanish-speaking country, the Brazilian community shows a lower degree of perceived cultural distance than other Latin American and Caribbean immigrants (such as Colombians and Ecuadorians), as well as higher contact with locals and lower degree of difficulties of socio-cultural adaptation (Basabe *et al.*, 2004). Furthermore, according to local population registers, foreigners from this country represent a tiny fraction of Latin American and Caribbean migrants (roughly 6% of working-age Latin American and Caribbean population at the end of 2006). Therefore, the inclusion of Brazilians should not alter the interpretation of the results obtained for Latin American and Caribbean immigrants. Second, the definition of the European Union (before the last accession) does not include Romania and Bulgaria, which is quite convenient as these two countries has a lower level of development than the rest of member states of the EU and the presence of people from these two countries –particularly, Romanians– is quite remarkable in Spain. The interested reader could find more details on the specific country of origin of Spanish immigrant in, for example, Antón and Muñoz de Bustillo (2010) and Pajares (2010), among many others.

### 3. EMPIRICAL ANALYSIS

#### 3.1. Unemployment differentials

As mentioned in the introduction, the total gap in unemployment risk of women or migrant women in the labour market is the product of two different forces: their risk of being unemployed and the risk of receiving a lower wage for otherwise equal characteristics. In this section we assess whether women and migrant woman face a higher unemployment risk, leaving the analysis of the wage gap for the next section. We focus on unemployment instead of employment rates because we are interested in the difficulties of working for that population who is actively looking for job<sup>12</sup>.

#### *Methodology*

Apart from the information provided by descriptive statistics, an appealing way of studying the differences in terms of unemployment rates between migrants and natives is to perform an Oaxaca-Blinder type decomposition of the probability of being unemployed as a function of several basic demographic characteristics, such as age, schooling level, marital status, number of children and the like (Oaxaca, 1973; Blinder, 1973). The decomposition of binary variable models was proposed for the first time by Gomulka and Stern (1990), who used a *probit* model in order to determine what factors accounted for the increase in the employment rate of married women in the UK.

In our case, we extend this methodology in order to take into account the possible existence of a double negative effect on the employment of immigrant women. In other words, we decompose the differences in unemployment risk between native men and foreign women in two steps: first, we compare male locals and female locals; second, we assess the gap between native female and migrant women. The procedure unfolds in the following stages:

- (1) We take advantage of the fact that the average of predicted unemployment rates according to a *logit* model –this property holds only in asymptotic terms in the case of *probit*– equals the actual mean<sup>13</sup>.

<sup>12</sup> In other words, inactive population is not part of the analysis. The rationale of our choice can be easily understood with an example: there are a large proportion of young females at the university among nationals (so, their employment rates are, *ceteris paribus*, lower) and it is obvious that it would be wrong to conclude that nationals face larger obstacles than foreign women for finding a job because of their lower employment rates. Although studying employment rates can be useful for some purposes, we think that unemployment is more appropriate for the aim of this work. In fact, one can find many papers in the literature focusing on unemployment differentials, especially in the case of analysing, for example, racial gaps. See, among others, Fairlie and Sundstrom (1997 and 1999), Blackaby *et al.* (1997 and 1999), Leslie *et al.* (1998), Azmat *et al.* (2006) or Livanos *et al.* (2009).

<sup>13</sup> As it is well-known, apart from exogenous and linearly independent covariates and a correct specification, consistency in *logit* models requires that the error term follows a logistic distribution.

- (2) We decompose the gap in actual (and predicted) unemployment rates between male natives and female immigrants into two components: a gender gap and a migrant gap. The gender gap is defined as the differential existing between male and female Spaniards, while the migrant gap refers to the difference in unemployment rates between female natives and female migrants<sup>14</sup>.
- (3) Taking the native group as the reference category, both the gender and the migrant gap are split into two components: a first one associated with differences in observed characteristics and a second one linked to differences in coefficients (or unexplained by observable endowments). In the case of the gender gap, the analysis is carried out by computing the hypothetical unemployment rate (calculated as the mean of the probability of being unemployed) that would be observed if socio-demographic characteristics of female Spaniards had the same effect on the probability of being unemployed as their male compatriots. In the case of the migrant gap, the counterfactual unemployment rate corresponds to a situation where migrants see their observable characteristics remunerated in terms of escaping from unemployment in the same fashion as Spanish females.
- (4) As a consequence, we can decompose the gap between native men and foreign women in a gender and a migrant gap. In each case, there is a part of the gap which is not explained by characteristics.

Formally, we estimate the probability of being unemployed conditioned on a set of human capital and demographic characteristics for three different groups (native males, native females, and migrant females) using *logit* models, that is:

$$(1) \quad P^i = F(X^i \beta^i) \quad i = nm, nw, mw.$$

where  $F(\cdot)$  is the logistic cumulative distribution function and  $i$  = native men ( $nm$ ), native women ( $nw$ ), migrant women ( $mw$ ).  $X$  includes a vector of basic socio-demographic characteristics affecting employability (age group, educational level, marital status, household size, number of children, and regional dummies)<sup>15</sup>. Then, using the estimated coefficients,  $b$ , we compute the average probabilities of employment interchanging coefficients and endowments, that is:

$$(2) \quad \overline{P^{ij}} = \frac{1}{N_i} \sum_i F(X^i b^j) \quad i, j = nm, nw, mw.$$

Finally, adding and subtracting  $P^{nw/nw}$ ,  $P^{nw/nm}$ , and  $P^{mw/nw}$ , we have

<sup>14</sup> The idea of using native women instead of male immigrants as a middle point in the decomposition procedure is in line with the idea of bringing disadvantages faced by female workers to the front of the discussion. Alternatively, one can first compute the gap between male natives and male migrants and, then, the differential existing between male and female foreign workers. The results obtained using this alternative approach, though obviously quantitatively different, are qualitatively the same, in the sense that there is also a double disadvantage for migrant women.

<sup>15</sup> On the determinants of unemployment, see, for instance, Nickell (1980), Blackaby *et al.* (1997 and 1999), and Leslie *et al.* (1998).

$$(3) \overbrace{P^{nm/nm} - P^{mnm/mw}}^{\text{Raw gap}} = \underbrace{P^{nm/nm} - P^{mnm/nm}}_{\text{Gender gap linked to endowments}} + \underbrace{P^{mnm/nm} - P^{mnm/mw}}_{\text{Gender gap linked to coefficients}} + \underbrace{P^{mnm/mw} - P^{mnm/mw}}_{\text{Migrant gap linked to endowments}} + \underbrace{P^{mnm/mw} - P^{mnm/mw}}_{\text{Migrant gap linked to coefficients}}$$

Gender gap
Migrant gap

## Results

The main socio-demographic characteristics of the labour force in Spain in 2006 are presented in Table 1. There are substantial differences between native men, native women, and female migrants. First, the unemployment rate is considerably higher among Spanish women (13.8 percent) than among men (6.5 percent), being even higher among foreign females (around 16 percent). Secondly, while the proportion of Spanish women with high education is higher than that of men, migrant females are younger than the native population and their schooling levels are also higher than those observed among Spanish men. Finally, foreign women are married to a smaller proportion than natives and live in slightly larger households and with a greater presence of children.

The results of the application of the decomposition technique detailed above are presented in Table 2, while the outcomes of the *logit* models are confined to the annex (Table A.1). Apart from the decomposition of the unemployment gaps between Spanish men and women and native women and foreign women, we also analyse the differential between female Spaniards and several groups of migrant women, particularly, women from developing countries (which excludes European Union countries, Canada, and the USA), from Latin America and the Caribbean, women who arrived five years ago or earlier (recent migrants), and women who arrived more than five years ago (non-recent migrants).

Results show that the seven-point unemployment gap among natives is entirely independent of observable characteristics of the labour force; on the contrary, the gap is completely explained by different returns to such endowments. When one compares Spanish and foreign females, the gap is roughly 2 percent. The differential in the case of Latin American and Caribbean women is less than 1 percent and slightly above this figure for non-recent female migrants. As in the case of the gender gap, the unemployment differential between native women and female migrants is linked to factors not related to observed characteristics. What is even more interesting, in the absence of these different coefficients, the probability of being unemployed should be smaller for Latin American and Caribbean females and non-recent migrant women than for native women, according to their observable characteristics.

The results obtained in the analyses also indicate how the penalty of being immigrant in terms of higher unemployment risk decreases with the years of residence (the unexplained gap is 25 percent lower). It also shows how such penalty is lower for Latin American and Caribbean migrant women compared to both all migrant women and migrant women from the NDC (the gap explained by coefficients is 46 and 39 percent lower than for those groups, respectively). This better than average performance in terms of lower unemployment might be explained by the lower cultural (including language) distance of Latin American

TABLE 1  
SELECTED SOCIO-DEMOGRAPHIC CHARACTERISTICS OF LABOR FORCE IN SPAIN (2006)

	Mean for Spanish men	Mean for Spanish women	Mean for migrant women	Mean for female migrants from Latin America and the Caribbean	Difference between Spanish men and women	Difference between Spanish women and migrant women	Difference between Spanish women and female migrants from Latin America and the Caribbean
Unemployed	0.065	0.138	0.159	0.145	***	***	—
Years of residence	—	—	5.434	4.317	—	—	—
Age							
Aged 16-24 years old	0.115	0.117	0.152	0.138	*	***	***
Aged 25-34 years old	0.231	0.262	0.363	0.361	***	***	***
Aged 35-44 years old	0.266	0.284	0.293	0.305	***	*	**
Aged 45-54 years old	0.244	0.232	0.153	0.156	***	***	***
Aged 55-64 years old	0.220	0.202	0.128	0.129	***	***	***
Education							
Elementary	0.031	0.027	0.047	0.029	***	***	***
Basic	0.577	0.481	0.394	0.407	***	***	***
Medium	0.217	0.217	0.364	0.390	***	***	***
High	0.175	0.275	0.195	0.173	***	***	***
Civil status							
Single	0.400	0.450	0.496	0.541	***	***	***
Married	0.600	0.550	0.504	0.504	***	***	***
Household size	3.503	3.392	3.549	3.651	***	***	***
Nº of children aged less than 5 years old	0.165	0.157	0.266	0.282	***	***	***
Nº of children aged 5-15	0.101	0.100	0.153	0.159	***	***	***
Observations	117,382	155,397	8,634	4,908			

Source: Authors' analysis from the LFS 2006.

Notes: \*\*\* Significant at 1%, \*\* significant at 5%, \* significant at 1%.

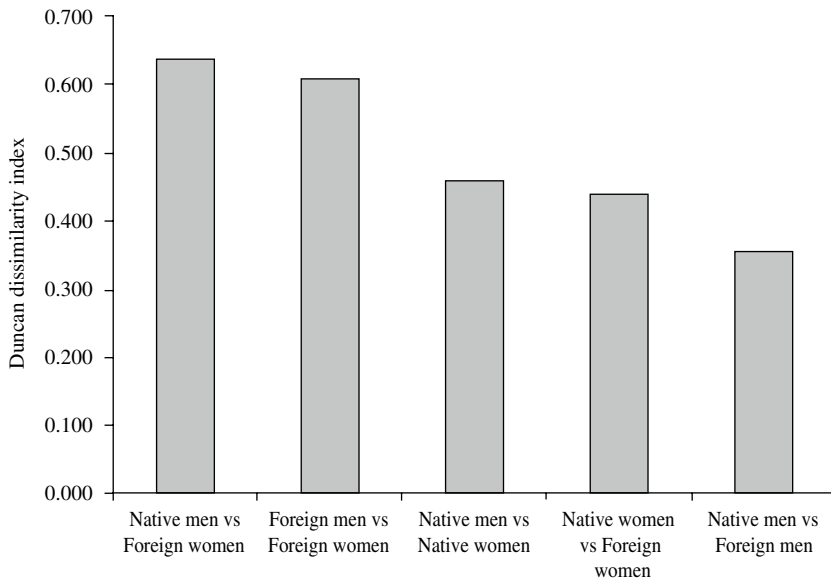
TABLE 2  
DECOMPOSITION OF THE GAP IN UNEMPLOYMENT RATES BETWEEN MALE NATIVES AND FEMALE FOREIGNERS IN SPAIN (2006)

	Gender gap		Migrant gap	
	Total	Characteristics	Total	Characteristics
Native men-Native women	0.0733 (0.0011)	*** -0.0015 (0.0002)	*** 0.0749 (0.0008)	
Native women-Migrant women			0.0213 (0.0039)	*** -0.0054 (0.0008)
Native women-Migrant women from NDC			0.0227 (0.0041)	*** -0.0008 (0.0009)
Native women-Migrant women from LA & C			0.0067 (0.0050)	*** -0.0077 (0.0008)
Native women-Recent migrant women			0.0276 (0.0049)	*** 0.0000 (0.0008)
Native women-Non-recent migrant women			0.0103 (0.0059)	* -0.0102 (0.0009)
				0.0267 (0.0036)
				0.0236 (0.0039)
				0.0143 (0.0049)
				0.0276 (0.0047)
				0.0205 (0.0055)

Source: Authors' analysis from the LFS 2006.

Notes: Standard errors between parentheses. \*\*\* Significant at 1%; \*\* significant at 5%; \* significant at 1%. Standard errors of total gaps are analytical and standard errors of characteristics and coefficients components are derived using the delta method.

FIGURE 1  
 SEGREGATION ACROSS JOBS OF NATIVES AND FOREIGNERS  
 FROM NDC IN SPAIN (2006)



Source: Authors' analysis from the LFS 2006.

and Caribbean immigrants compared to other group of foreigners. In addition, we have carried out some additional analyses for both recent and non-recent Latin American and Caribbean immigrants. These results suggest that the unemployment gap for this group also decreases with years of residence in Spain<sup>16</sup>.

After studying the gap in terms of unemployment, another interesting labour market issue is to analyse where immigrants work, particularly, in which types of occupations and sectors of activity. Although this point might deserve a paper on its own, we can get a first impression by simply computing how different are jobs held by locals and foreigners. Defining a job as the intersection of a sector of activity and an occupational level, we have computed the Duncan dissimilarity index, which accounts for to what extent the job structures of two groups of workers are different (Duncan and Duncan 1955). The index is bounded between 0 (the same job structure, no segregation) and 1 (total segregation across jobs). The result of the application of this measure to Spaniards and foreigners from NDC (Figure 1) reveals that segregation by gender seems to be more relevant

<sup>16</sup> Although the study of assimilation processes in detail and the effect of language proficiency on labour market outcomes are out of the scope of the article, there are several facts that arise from our analysis regarding this issue. Firstly, the unemployment gap is lower for Latin American and Caribbean immigrants. Secondly, the unemployment gap decreases with years of residence for both immigrants as a whole and Latin American and Caribbean foreign females. These facts suggest that all migrant women seem to assimilate over time and, specifically, Latin American and Caribbean immigrants face lower initial barriers in the mentioned assimilation process to the Spanish labour market. These results are consistent with the evidence on assimilation presented by Amuedo-Dorantes and De la Rica (2007) using the Census 2001.



than segregation by migration status although, at the same time, jobs held by female migrants are very different from those held by their male counterparts.

### 3.2. Earnings differentials

#### *Methodology*

The analysis of earnings differentials is performed by making use of the so-called Machado-Mata decomposition (Machado and Mata, 2005). The main strength of this technique –based on quantile regressions and resampling procedures– is its capability of determining where the gaps are placed in the earnings distribution, allowing the researcher to know whether, for example, the gap increases across the distribution of wages, is larger at the bottom or is constant across different wage levels. This approach has been widely used to analyse gender pay gaps (see, for example, Albrecht, *et al.*, 2003; Arulampalam *et al.*, 2007). In addition, we extend this methodology in order to take into account the potential existence of a double negative disadvantage for foreign women in terms of wages, a perspective that, as far as we know, has not been explored before.

Though technically far more complex, the decomposition follows the spirit of the Oaxaca-Blinder technique mentioned before, a decomposition of mean wage differences. We apply the Machado-Mata technique using the simplified procedure proposed by Albrecht *et al.* (2003). It is based on a four-step methodology that involves the construction of several counterfactual earnings distributions:

- (1) Estimate a quantile regression for each percentile for native men, native women, and migrant women<sup>17</sup>. As covariates, we include a set of variables capturing factors related to individual productivity (human capital endowments, that is, age, age squared, educational level and tenure) and productive structure (firm size, eleven dummies for sector of activity, and regional dummies).
- (2) For each quantile, we take a draw from the sample of native women and compute the predicted log wage for them using the native men coefficients for that quantile (obtained in the previous step). The process is repeated for the migrant women database, but this time using the coefficients estimated for native women.
- (3) Repeat step two  $M$  times obtaining a counterfactual distribution of native women that reflects their remunerations as if they were paid as native men and a counterfactual distribution of migrant women as if they were paid as native women. Following the work of Albrecht, *et al.* (2007),  $M$  is set to 100. In addition, just as Arulampalam *et al.* (2007), our bases for comparison are the predicted wage distributions of native men and native women, retaining their characteristics and specific returns.
- (4) Finally, compute the wage difference at each quantile between the predicted earnings distributions of the following groups:

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<sup>17</sup> Consistency in a quantile regression framework requires exogenous and linearly independent covariates and a correct specification of the model. For more details on quantile regression, see, for example, the comprehensive work of Koenker (2005).

- Native men and native women.
- Native women and migrant women.

Using this procedure, the raw gap at each quantile of the wage distribution (conditioned on covariates) can be decomposed into a gender gap (differential between native men and native women) and a migrant gap (differential between native women and migrant women). At the same time, each of these gaps can be split into a first component associated with differences in endowments and a second one linked to differences in coefficients. Written down in a bit more formal way:

$$\begin{aligned}
 & \theta(nm / nm, q) - \theta(mw / mw, q) = \\
 & \underbrace{\hspace{10em}}_{\text{Raw gap}} \\
 & \theta(nm / nm, q) - \theta(nw / nm, q) + \theta(nw / nm, q) - \theta(nw / nw, q) \quad + \\
 & \underbrace{\hspace{10em}}_{\text{Gender gap associated to coefficients}} \quad \underbrace{\hspace{10em}}_{\text{Gender gap associated to endowments}} \quad + \\
 (4) \quad & \underbrace{\hspace{10em}}_{\text{Gender gap}} \\
 & \theta(nw / nw, q) - \theta(mw / nw, q) + \theta(mw / nw, q) - \theta(mw / mw, q) \\
 & \underbrace{\hspace{10em}}_{\text{Migrant gap associated to coefficients}} \quad \underbrace{\hspace{10em}}_{\text{Migrant gap associated to endowments}} \\
 & \underbrace{\hspace{10em}}_{\text{Migrant gap}}
 \end{aligned}$$

where  $\theta(i/j, q)$  is the  $q$ -th quantile  $-q \in (0, 1)$  of the distribution resulting from considering the endowments of group  $i$  and the returns to observable characteristics of group  $j$ , with  $i, j =$  native men ( $nm$ ), native women ( $nw$ ), migrant women ( $mw$ ).

### Results

Descriptive evidence points out several features of the employed population that are worthy of mention (Table 3). First, foreign female workers are younger than native employees and have lower educational levels. Second, apart from the remarkable wage gap between native men and native and migrant women, regarding occupational characteristics it is worth mentioning that female foreign workers are employed in smaller firms than Spanish women, are much less tenured and are employed to a greater extent than natives in the services sector. Unsurprisingly, these differences in terms of sector of activity also apply to the comparison of native men and women.

The results of the Machado-Mata decomposition are presented in Table 4 in order to offer a friendlier interpretation (more detailed econometric results are

TABLE 3  
SELECTED SOCIO-DEMOGRAPHIC CHARACTERISTICS OF EMPLOYED POPULATION IN SPAIN (2006)

	Mean for Spanish men	Mean for Spanish women	Mean for migrant women	Mean for female migrants from Latin America and the Caribbean	Difference between Spanish men and women	Difference between Spanish migrant women	Difference between Spanish women and female migrants from Latin America and the Caribbean
Hourly gross wage (euros)	11,961	9,380	7,591	6,810	***	***	***
Age	38.800	37.574	35.748	35.753	***	***	***
Education							
Elementary	0.056	0.046	0.143	0.140	***	***	***
Basic	0.537	0.450	0.551	0.620	***	***	***
Medium	0.208	0.209	0.147	0.141	***	***	***
High	0.198	0.295	0.159	0.100	***	***	***
Tenure	8.387	6.912	1.829	1.457	***	***	***
Firm size							
Less than 50 employees	0.447	0.371	0.450	0.418	***	***	***
Between 50 and 199 employees	0.273	0.250	0.263	0.249	***	*	***
200 or more employees	0.280	0.380	0.287	0.333	***	**	***
Sector of activity							
Manufacturing	0.445	0.234	0.185	0.156	***	***	***
Construction	0.112	0.018	0.012	0.014	***	***	***
Services	0.443	0.748	0.803	0.831	***	***	***
Observations	89,694	62,728	3,896	2,074			

Source: Authors' analysis from the WSS 2006.

Notes: \*\*\* Significant at 1%; \*\* significant at 5%; \* significant at 1%.

TABLE 4  
ESTIMATED RAW AND COUNTERFACTUAL WAGE GAPS AT SELECTED PERCENTILES

Percentile	Native men-Native women		Native women-All migrant women		Native women-Migrant women from NDC		Native women-Migrant women from LA & C	
	Raw gap	Counterfactual gap	Raw gap	Counterfactual gap	Raw gap	Counterfactual gap	Raw gap	Counterfactual gap
10th	0.2115 *** (0.0082)	0.2080 *** (0.0002)	0.0577 *** (0.0069)	-0.0301 *** (0.0007)	0.0629 *** (0.0072)	-0.0142 *** (0.0004)	0.0714 *** (0.0071)	-0.0208 *** (0.0008)
20th	0.2159 *** (0.0078)	0.2206 *** (0.0006)	0.0858 *** (0.0064)	-0.0073 *** (0.0005)	0.1118 *** (0.0064)	-0.0001 *** (0.0005)	0.1145 *** (0.0062)	0.0054 *** (0.0010)
30th	0.2263 *** (0.0079)	0.2343 *** (0.0006)	0.1184 *** (0.0064)	0.0013 *** (0.0005)	0.1512 *** (0.0062)	0.0121 *** (0.0008)	0.1581 *** (0.0065)	0.0276 *** (0.0008)
40th	0.2340 *** (0.0082)	0.2450 *** (0.0004)	0.1567 *** (0.0069)	0.0146 *** (0.0007)	0.1979 *** (0.0066)	0.0337 *** (0.0009)	0.2097 *** (0.0066)	0.0422 *** (0.0008)
50th	0.2385 *** (0.0088)	0.2552 *** (0.0005)	0.2072 *** (0.0076)	0.0307 *** (0.0008)	0.2473 *** (0.0072)	0.0471 *** (0.0010)	0.2594 *** (0.0069)	0.0610 *** (0.0009)
60th	0.2437 *** (0.0095)	0.2611 *** (0.0003)	0.2519 *** (0.0082)	0.0468 *** (0.0007)	0.3013 *** (0.0078)	0.0721 *** (0.0013)	0.3125 *** (0.0078)	0.0780 *** (0.0010)
70th	0.2346 *** (0.0104)	0.2665 *** (0.0001)	0.2776 *** (0.0093)	0.0577 *** (0.0006)	0.3602 *** (0.0087)	0.0986 *** (0.0011)	0.3703 *** (0.0087)	0.1032 *** (0.0011)
80th	0.2308 *** (0.0119)	0.2620 *** (0.0004)	0.3053 *** (0.0111)	0.0667 *** (0.0002)	0.4081 *** (0.0102)	0.1243 *** (0.0011)	0.4199 *** (0.0106)	0.1266 *** (0.0010)
90th	0.2248 *** (0.0152)	0.2585 *** (0.0001)	0.3077 *** (0.0160)	0.0645 *** (0.0018)	0.4445 *** (0.0138)	0.1418 *** (0.0003)	0.4757 *** (0.0139)	0.1524 *** (0.0012)
Mean gap (OLS)	0.2387 *** (0.0027)	0.2527 *** (0.0025)	0.1898 *** (0.0074)	0.0140 ** (0.0069)	0.2634 *** (0.0073)	0.0496 *** (0.0074)	0.2628 *** (0.0086)	0.0582 *** (0.0087)

Source: Authors' analysis from the WSS 2006.  
Notes: Standard errors computed according to Albrecht *et al.* (2009) between parentheses. \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

displayed in the annex, Tables A.2-A.6). For comparative purposes, the mean wage gap –estimated using the well-known Oaxaca-Blinder technique– is also presented in the graphs. An interesting picture arises from the analysis of wage differentials across the earnings distribution. First, the raw wage gap between Spanish men and women is large (between 20 and 25 percent) and remains more or less constant across the distribution. In turn, a closer look at the bottom of the distribution suggests that the counterfactual gender gap –not explained by observable characteristics– slightly increases from 20 percent, at the bottom, up to almost 30 percent at the top. This pattern resembles the *glass ceiling* phenomenon documented for several developed countries (Arulampalam *et al.*, 2007), though the increasing trend in Spain is much less intense than in other European countries. It is also worth mentioning that, as in other high-income countries, the counterfactual gap is sometimes even larger than the raw earnings differential, which implies that women receive lower remunerations than men, even though females present “better” observable characteristics.

Second, the earnings gap between female natives and migrants, which amounts to roughly 20 percent, practically disappears on average when controlling for observable characteristics. The quantile-based analysis shows here all its potential as an analytical tool: although the counterfactual differential is tiny up to the 40<sup>th</sup> percentile, it then rises, reaching nearly 10 percent around the 80<sup>th</sup>-90<sup>th</sup> percentiles. This pattern becomes even clearer when we focus only on female workers from developing countries, suggesting also the existence of a *glass ceiling*. Interestingly, the gap observed for women from Latin America and the Caribbean behaves in a very similar way, which suggests that foreign women from non-developed regions are employed in jobs where language proficiency does not prove itself to be a highly valuable asset for getting a higher wage.

Although it is out of the scope of this paper to disentangle the reasons behind this pattern of gaps, one can speculate about the explanatory factors behind the behavior of these earnings differentials. First, the non-recognition (or partial recognition) of the qualifications of female immigrants from non-developed countries is likely to be a consistent explanation of differential between native and foreign women at the top of the earnings distribution. Second, apart from a higher prevalence of discriminatory practices and information problems about skills and abilities at the upper part of the wage distribution, this result could be explained by the limited transferability of skills and human capital acquired abroad (Chiswick and Miller, 2008 and 2009), a fact that has also been recently documented for Spain<sup>18</sup>. This circumstance would be specific for migrants (not affecting local women) and is likely to be more acute at the top of the earnings distribution as long as it is reasonable to think that this problem will be greater in jobs demanding more complex abilities than for those involving only basic tasks. Third, the existence of power relationships within the family

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<sup>18</sup> Particularly, the research work of Sanromà *et al.* (2009) points out that human capital endowments obtained abroad are not as profitable as human capital acquired in Spain.

or the prevalence of decisions made at household level could also account for the limited possibilities of migrant women of getting good jobs<sup>19</sup>.

On the other hand, the compressive effects exerted by some labour market institutions—particularly, the national minimum wage and collective agreements—could represent the most consistent explanation for the behaviour of the gap at the bottom. The statutory national minimum wage would act as a floor irrespectively of human capital endowments. Thanks to the existence of such a lower limit, those workers with almost no qualifications would be pushed up in terms of wage in comparison to the wage they would receive in the absence of a minimum wage. Collective agreements, which cover both unionised and non-unionised workers in Spain, could have a similar effect at the former part of the distribution by setting floors in some sectors of activity higher than the national minimum wage. Although the remunerations set by the minimum wage and collective agreements also affect native women, the higher concentration of immigrant women from developing countries at the lower-end of the wage distribution would allow this group to profit more from the effects of these institutions<sup>20</sup>.

Finally, it is worth mentioning that the gaps, both in terms of earnings and employment, observed might be partially linked to racial issues, as long as, apart from foreigners, Spain is a racially and ethnically homogenous country<sup>21</sup>.

In sum, the results presented above have shown that migrant women face a double negative effect in the Spanish labour market in terms of both access to employment and earnings. Therefore, improving the situation of this female group placed at the lower end of the table might require narrowly targeted interventions. In this respect, we can mention the very positive effects on employment found in

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<sup>19</sup> For example, Mincer (1978) suggests that, when men are the first to migrate, women might suffer a reduction in their market earnings potential, with a higher possibility of withdrawal from the job market, less job mobility, and a shorter tenure that implies less occupational progress, reducing the growth of wages over the life cycle. Taking into account ‘family rationality’, Baker and Benjamin (1997) argue that women take the role of secondary workers who fall into low-investment occupations with little mobility and flatter wage and experience profiles. In this context, female work would allow husbands to invest and catch up faster with native men. Also embedded in this context, the division of labour in the household—highly dependent on the power relations among its members—might be associated with lower earnings for women and moderately higher earnings for men to the extent that a division of labour in the household has a different effect by gender on past labour supply and work effort (Adsera and Chiswick, 2007). If migrant women from less developed countries face a worse family setup, involving a large housework load, that circumstance could partially explain their problems in improving their jobs versus Spanish women.

<sup>20</sup> According to our estimates, 29 percent of immigrant women are located in the first wage decile, compared to 16.7 percent of native women and 4.7 percent of native men (for the first two deciles, the numbers are 50, 30, and 12 percent, respectively).

<sup>21</sup> Actually, one can quote the Roma as a Spanish minority. Although there is no official figure reflecting the size of the Roma population, according to estimations from the Spanish government they represent around 1.5 percent of total population. They usually work outside the regular labor market, as self-employed or employed in family businesses.

the evaluation of pilot schemes targeted on recent migrants in Sweden, involving not only work-oriented language teaching but also practical workplace training (see Delander *et al.*, 2005).

As stated in the data section, the WSS does not cover the domestic sector, which includes around one third of female immigrant employment. This point should be kept in mind when interpreting the results presented here, which are only representative for the population employed in other sectors. Nevertheless, we have tried to—even imperfectly—cover this gap by using an *ad hoc* survey on domestic work in Spain in 2000 (the Social Work Survey on Domestic Workers Sector carried out by the Collective IOÉ), which comprises around 1,000 domestic workers. Our analysis of the survey limits to women, as men are almost absent in the sector and, thus, in the database. Two stylised points emerges from the analysis. First, the raw hourly wage gap between female and migrant women is roughly 51%. Second, we perform an Oaxaca-Blinder decomposition in order to determine what explains such gap, finding that around 31 percent points of the gap are due to observables characteristics and the remaining 20 percent are associated to different returns to such endowments<sup>22</sup>. Some of the causes behind this differential, apart from eventual discrimination, might be the lower incidence of labour market institutions—like collective agreements, unions, and minimum wages—in this sector and a possible higher monopsonistic power of employers over immigrants than over natives, because of a lower labour supply flexibility to the employer of foreign employees due to the larger monetary restrictions and more urgent needs of finding a job that they might face. These factors might explain the different behavior shown by immigrants working in the domestic sector: the existence of a relevant unexplained wage gap not detected in lower deciles of the wage distribution of female immigrants working in other sectors<sup>23</sup>.

#### 4. CONCLUSIONS

The comparatively late entry of Spanish women into the labour force and the sudden increase in immigration flows experienced by the Spanish economy in the last decade make Spain an interesting case study to assess whether female immigrants face a double negative disadvantage in the labour market.

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<sup>22</sup> Particularly, control variables are age, age squared, educational level, tenure, affiliation to Social Security (not compulsory in all cases and sometimes a mandate avoided by employers) and type of worker (distinguishing among live-in workers, live-out workers who are not paid by the hour and live-out workers who are paid by the hour). For reasons of space, the detailed results are not included in the main text, but they are available from the authors upon request.

<sup>23</sup> Comparisons between average earnings of domestic workers in 2000 (indexed to 2002 according to Consumer Price Index) with the earnings distribution of female employees in 2002 according to the *Wages Structure Survey 2002* places the former figure at the lower end of the earnings distribution, particularly below the 25<sup>th</sup> percentile.

To tackle this issue, we have analysed the gap in both unemployment and earnings between male natives, female natives, and female immigrants and, particularly, we have explored which part of those differentials is not explained by observable characteristics linked to employability and productivity, respectively.

The first form of potential discrimination for women in general and immigrant women in particular is related to their differential risk of being unemployed. Our results have shown that the unemployment gap for both groups is entirely independent of observable characteristics of the female labour force, that differential being fully explained by the different returns –in terms of getting a job– to such observable characteristics. If access to employment were only determined by socio-demographic endowments, migrant women in general, female foreigners from Latin America and the Caribbean, and female foreigners that arrived more than five years ago would have a lower unemployment rate than natives and no differential would be observed in the case of women from developing countries and recent female migrants.

In the second place, the earnings gap faced by migrant women has been analysed using a decomposition technique based on quantile regressions that allows exploring how those differentials vary across the whole earnings distribution. As in the case of the employment gap, we have first explored the gap between male and female local workers and, then, the differential between female natives and migrant women. Regarding the former, whereas the raw gender gap is remarkably stable across the earnings distribution, the unexplained differential grows from roughly 20 to around 30 percent of wages, pointing to the existence of a sort of *glass ceiling*. The picture is somewhat different when focusing on migrant women *vis a vis* local females. In this case, the average raw gap of nearly 20 percent practically disappears when we control for the different human capital characteristics of both groups of workers. Although, on average, the counterfactual earnings differential is almost null, it is remarkably higher at the top of the distribution (excluding the top decile), a fact consistent with a kind of *glass ceiling* for immigrant women, too. Both migrant women from developing countries and, particularly, from Latin America and the Caribbean show a similar though somewhat more intense pattern: a relatively small average wage gap, virtually null below the 30<sup>th</sup> percentile and reaching 10 percent at the top. The finding of this double-negative effect on labour market outcomes of, at least, an important share of migrant women in Spain, raises the issue of designing social interventions specifically aimed at improving the situation of this group in terms of access to employment and earnings, which will result in a non-negligible step towards not only gender equality but also social justice.

Finally, regarding how the situation in Spain compares with the one reported in other countries, the results reached in terms of wages are quite similar to those reported for Canada by Beach and Worswick (1993), who find a negative effect for high-educated female women, Shamsuddin (1998) and Hayfron (2002). In turn, they appear to be different from the findings of Husted *et al.* (2000) for Denmark, where only a minority of foreign-born women (Pakistani) faces, on average, a double penalty and those reported by other studies based in less



sophisticated techniques. Our database does not allow such degree of detail, but further and more detailed waves of the survey might make possible to obtain results for specific nationalities.

As mentioned in the introduction, the year selected for the study is 2006, at the end of the Spanish economic boom behind intense arrival of immigrants experienced by the country. Since then, a deep crisis has altered radically the Spanish economic landscape. In relation to the crisis and their likely effect on immigrant women, several trends can be highlighted. On the one side, female workers are less affected because in general they did not work in the sector most impacted by the crisis, construction, whose evolution explains more than half of total jobs lost during the crisis (so far), one third of the 1.2 million destroyed jobs were held by immigrants, mostly men. This has translated into a higher increase of the male migrant unemployment rate, up from 8 in 2006 to 35 percent in the 3<sup>rd</sup> quarter of 2011 compared to the male average unemployment rate of 21 percent. Although female unemployment also increased during the crisis, the hike was less dramatic, from 14 percent in 2006 to 30 percent in 2011 (3<sup>rd</sup> quarter). Since more migrant men have lost their jobs than migrant women, it is possible that living standards of immigrant households will now depend on women earnings to a greater extent, which could both reduce their bargaining power in the labour market (perhaps leading to a worsening of the earnings gap detected in this study, as they could by no means afford losing their jobs) and empower them within the household.

In comparative terms, both immigrant and non-immigrant women suffered similar increases in unemployment rate, although immigrant had (and still do) a higher unemployment rate (around 50% higher). To this date we lack data to know how this increase in unemployment is affecting income deprivation and the evolution of wage-gaps, but we could speculate that the increase in unemployment, combined with the lower protection of immigrants in terms of unemployment benefits (Tobes and Angoitia, 2010) and intra-family cross-insurance, will increase the economic vulnerability of immigrants affecting their bargaining power *vis a vis* the boom years, being an increase in the pay gap a likely impact. According to Spanish Immigration Law, unemployed immigrants risk losing their work and residence permits, so the crisis might push a sizeable proportion of immigrants into the underground economy, further increasing the wage gap.

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ANNEX

TABLE A.1  
MARGINAL EFFECTS (EVALUATED AT THE MEANS OF COVARIATES) OF LOGIT ESTIMATES OF THE PROBABILITY  
OF BEING UNEMPLOYED (2006)

	Native men	Native women	Migrant women	Migrant women from non-developed countries	Migrant women from Latin America and the Caribbean	Migrant women arrived 5 years ago or earlier	Migrant women arrived more than 5 years ago
Age (25-34 years old = 0)							
16-24 years old	0.531 *** (0.035)	0.097 *** (0.005)	0.104 *** (0.016)	0.141 *** (0.020)	0.114 *** (0.021)	0.128 *** (0.020)	0.056 ** (0.026)
35-44 years old	0.005 (0.031)	0.020 *** (0.003)	0.024 ** (0.010)	0.037 *** (0.013)	0.026 ** (0.013)	0.040 *** (0.014)	-0.004 (0.014)
45-54 years old	-0.293 *** (0.045)	-0.005 (0.004)	-0.026 (0.019)	-0.020 (0.027)	-0.021 (0.025)	-0.039 (0.028)	-0.010 (0.027)
55-64 years old	0.146 *** (0.045)	0.001 (0.004)	0.045 * (0.026)	0.041 (0.035)	0.046 (0.035)	0.073 (0.045)	0.038 (0.035)
Single (Married = 0)	0.996 *** (0.030)	-0.003 (0.002)	-0.031 *** (0.008)	-0.036 *** (0.010)	-0.029 *** (0.011)	-0.042 *** (0.011)	-0.012 (0.013)
Education (Basic education = 0)							
Elementary education	0.817 *** (0.047)	0.073 *** (0.007)	0.061 *** (0.020)	0.085 *** (0.024)	0.017 (0.031)	0.081 *** (0.028)	0.053 * (0.028)
Medium education	-0.338 *** (0.028)	-0.050 *** (0.002)	-0.041 *** (0.008)	-0.031 *** (0.010)	-0.017 (0.011)	-0.053 *** (0.011)	-0.034 *** (0.013)
High education	-0.487 *** (0.034)	-0.087 *** (0.002)	-0.043 *** (0.009)	-0.043 *** (0.013)	-0.023 * (0.013)	-0.034 ** (0.013)	-0.056 *** (0.014)
Household size	0.018 ** (0.009)	0.006 *** (0.001)	0.007 ** (0.003)	0.006 * (0.003)	0.003 (0.004)	0.011 *** (0.004)	0.001 (0.004)
No. of children aged less than 5	-0.080 ** (0.031)	-0.006 ** (0.002)	0.032 *** (0.007)	0.029 *** (0.009)	0.022 ** (0.010)	0.028 *** (0.010)	0.060 *** (0.011)
No. of children aged 5-15	-0.009 (0.037)	0.007 *** (0.003)	0.010 (0.008)	0.013 (0.010)	0.009 (0.011)	0.014 (0.011)	0.006 (0.012)
McFadden R <sup>2</sup>	0.072	0.057	0.037	0.041	0.027	0.043	0.042
Observations	117,382	155,397	8,634	5,869	4,908	5,164	3,510

Source: Authors' analysis from the LFS 2006.

Notes: \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%. Robust standard errors between parentheses. All models include an intercept, regional dummies and dummies for year quarters. The reference category is a person aged 25-34 years old with basic education.

TABLE A.2  
OLS AND QUANTILE REGRESSION ESTIMATES FOR SPANISH MALE EMPLOYEES (2006)

	Coefficients of quantile regressions by selected percentile				
	10th	25th	50th	75th	90th
OLS coefficients					
Age	0.045 *** (0.002)	0.033 *** (0.002)	0.038 *** (0.002)	0.046 *** (0.002)	0.054 *** (0.004)
Age squared	0.000 *** (0.000)	0.000 *** (0.000)	0.000 *** (0.000)	0.000 *** (0.000)	-0.001 *** (0.000)
Education (Basic education = 0)					
Elementary	0.065 *** (0.006)	0.051 *** (0.006)	0.059 *** (0.007)	0.085 *** (0.009)	0.060 *** (0.014)
Medium	0.226 *** (0.006)	0.175 *** (0.006)	0.214 *** (0.007)	0.262 *** (0.010)	0.251 *** (0.015)
High	0.494 *** (0.007)	0.395 *** (0.007)	0.493 *** (0.007)	0.568 *** (0.011)	0.566 *** (0.016)
Tenure	0.012 *** (0.000)	0.013 *** (0.000)	0.013 *** (0.000)	0.011 *** (0.000)	0.009 *** (0.000)
Firm size (less than 50 employees = 0)					
Firm size 50-199	0.143 *** (0.003)	0.131 *** (0.003)	0.169 *** (0.004)	0.170 *** (0.005)	0.139 *** (0.008)
Firm size 200+	0.252 *** (0.004)	0.265 *** (0.003)	0.287 *** (0.004)	0.270 *** (0.006)	0.232 *** (0.008)
R <sup>2</sup>	0.345	0.197	0.230	0.213	0.191
Observations	89,694	89,694	89,694	89,694	89,694

Source: Authors' analysis from the WSS 2006.

Notes: \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%. Standard errors between parentheses. McFadden R<sup>2</sup> reported in quantile regressions. The reference category is a person with an intercept, eleven dummies for sector of activity of the firm and regional dummies are also included in all regressions.

TABLE A.3  
OLS AND QUANTILE REGRESSION ESTIMATES FOR SPANISH FEMALE EMPLOYEES (2006)

	Coefficients of quantile regressions by selected percentile					
	OLS coefficients	10th	2.5th	50th	75th	90th
Age	0.033 *** (0.002)	0.015 *** (0.002)	0.020 *** (0.002)	0.030 *** (0.002)	0.037 *** (0.002)	0.042 *** (0.004)
Age squared	0.000 *** (0.000)	0.000 *** (0.000)	0.000 *** (0.000)	0.000 *** (0.000)	0.000 *** (0.000)	-0.001 *** (0.000)
Education (Basic education = 0)						
Elementary	0.031 *** (0.008)	0.077 *** (0.009)	0.041 *** (0.008)	0.030 *** (0.008)	0.017 *** (0.010)	0.017 *** (0.016)
Medium	0.170 *** (0.008)	0.169 *** (0.010)	0.157 *** (0.008)	0.162 *** (0.008)	0.167 *** (0.011)	0.189 *** (0.017)
High	0.481 *** (0.009)	0.379 *** (0.010)	0.416 *** (0.009)	0.490 *** (0.008)	0.531 *** (0.011)	0.569 *** (0.017)
Tenure	0.015 *** (0.000)	0.014 *** (0.000)	0.016 *** (0.000)	0.016 *** (0.000)	0.016 *** (0.000)	0.014 *** (0.000)
Firm size (less than 50 employees = 0)						
Firm size 50-199	0.072 *** (0.004)	0.056 *** (0.005)	0.077 *** (0.004)	0.074 *** (0.004)	0.077 *** (0.005)	0.078 *** (0.009)
Firm size 200+	0.171 *** (0.004)	0.144 *** (0.005)	0.166 *** (0.004)	0.177 *** (0.004)	0.188 *** (0.005)	0.179 *** (0.009)
R <sup>2</sup>	0.366	0.134	0.190	0.248	0.261	0.218
Observations	62,728	62,728	62,728	62,728	62,728	62,728

Source: Authors' analysis from the WSS 2006.

Notes: \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%. Standard errors between parentheses. McFadden R<sup>2</sup> reported in quantile regressions. The reference category is a person with an intercept, eleven dummies for sector of activity of the firm and regional dummies are also included in all regressions.



TABLE A.4  
OLS AND QUANTILE REGRESSION ESTIMATES FOR MIGRANT FEMALE EMPLOYEES (2006)

	Coefficients of quantile regressions by selected percentile					
	OLS coefficients	10th	25th	50th	75th	90th
Age	0.014 *	0.006	0.005	0.013	0.020 **	0.031 *
	(0.008)	(0.009)	(0.007)	(0.008)	(0.009)	(0.017)
Age squared	0.000 *	0.000	0.000	0.000 *	0.000 **	0.000 *
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (Basic education = 0)						
Elementary	-0.017	-0.011	-0.010	-0.006	-0.023	0.031
	(0.018)	(0.021)	(0.016)	(0.018)	(0.021)	(0.039)
Medium	0.126 ***	0.065 **	0.052 **	0.070 ***	0.126 ***	0.231 ***
	(0.024)	(0.027)	(0.020)	(0.023)	(0.027)	(0.050)
High	0.366 ***	0.223 ***	0.268 ***	0.340 ***	0.422 ***	0.546 ***
	(0.028)	(0.030)	(0.022)	(0.024)	(0.028)	(0.052)
Tenure	0.028 ***	0.019 ***	0.025 ***	0.028 ***	0.039 ***	0.039 ***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.005)
Firm size (less than 50 employees = 0)						
Firm size 50-199	0.104 ***	0.048 ***	0.070 ***	0.103 ***	0.130 ***	0.143 ***
	(0.016)	(0.018)	(0.013)	(0.015)	(0.018)	(0.034)
Firm size 200+	0.076 ***	0.013	0.035 **	0.077 ***	0.151 ***	0.185 ***
	(0.018)	(0.018)	(0.014)	(0.016)	(0.020)	(0.037)
R <sup>2</sup>	0.234	0.085	0.098	0.132	0.183	0.191
Observations	3,896	3,896	3,896	3,896	3,896	3,896

Source: Authors' analysis from the WSS 2006.

Notes: \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%. Standard errors between parentheses. McFadden R<sup>2</sup> reported in quantile regressions. The reference category is a person with an intercept, eleven dummies for sector of activity of the firm and regional dummies are also included in all regressions.

TABLE A.5  
OLS AND QUANTILE REGRESSION ESTIMATES FOR MIGRANT FEMALE EMPLOYEES FROM NON-DEVELOPED COUNTRIES (2006)

	Coefficients of quantile regressions by selected percentile				
	10th	25th	50th	75th	90th
OLS coefficients					
Age	0.013 (0.008)	0.008 (0.006)	0.010 (0.007)	0.018 (0.011)	0.032 * (0.017)
Age squared	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 * (0.000)	0.000 * (0.000)
Education (Basic education = 0)					
Elementary	-0.021 (0.018)	-0.006 (0.014)	-0.008 (0.016)	-0.032 (0.025)	0.025 (0.037)
Medium	0.057 ** (0.025)	0.031 * (0.018)	0.038 * (0.021)	0.033 (0.033)	0.096 * (0.051)
High	0.272 *** (0.031)	0.162 *** (0.021)	0.232 *** (0.024)	0.337 *** (0.037)	0.466 *** (0.054)
Tenure	0.018 *** (0.003)	0.015 *** (0.002)	0.017 *** (0.002)	0.019 *** (0.004)	0.027 *** (0.005)
Firm size (less than 50 employees = 0)					
Firm size 50-199	0.092 *** (0.016)	0.044 *** (0.012)	0.103 *** (0.014)	0.155 *** (0.022)	0.146 *** (0.034)
Firm size 200+	0.092 *** (0.019)	0.027 ** (0.013)	0.096 *** (0.015)	0.165 *** (0.024)	0.232 *** (0.036)
R <sup>2</sup>	0.127	0.066	0.070	0.095	0.127
Observations	3,072	3,072	3,072	3,072	3,072

Source: Authors' analysis from the WSS 2006.

Notes: \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%. Standard errors between parentheses. McFadden R<sup>2</sup> reported in quantile regressions. The reference category is a person with an intercept, eleven dummies for sector of activity of the firm and regional dummies are also included in all regressions.

TABLE A.6  
OLS AND QUANTILE REGRESSION ESTIMATES FOR MIGRANT FEMALE EMPLOYEES FROM LATIN AMERICA  
AND THE CARIBBEAN (2006)

	Coefficients of quantile regressions by selected percentile				
	10th	25th	50th	75th	90th
OLS coefficients					
Age	0.019 ** (0.010)	0.007 (0.007)	0.013 * (0.007)	0.023 (0.015)	0.030 (0.024)
Age squared	0.000 ** (0.000)	0.000 (0.000)	0.000 * (0.000)	0.000 (0.000)	0.000 (0.000)
Education (Basic education = 0)					
Elementary	-0.016 (0.022)	0.022 (0.016)	0.005 (0.017)	0.026 *** (0.006)	0.024 *** (0.008)
Medium	0.062 ** (0.030)	0.048 ** (0.021)	0.044 ** (0.022)	-0.025 (0.035)	0.017 (0.053)
High	0.263 *** (0.038)	0.173 *** (0.023)	0.223 *** (0.024)	0.046 (0.045)	0.089 (0.068)
Tenure	0.019 *** (0.004)	0.015 *** (0.003)	0.012 *** (0.003)	0.349 *** (0.050)	0.428 *** (0.077)
Firm size (less than 50 employees = 0)					
Firm size 50-199	0.106 *** (0.019)	0.060 *** (0.014)	0.103 *** (0.015)	0.120 *** (0.031)	0.182 *** (0.049)
Firm size 200+	0.106 *** (0.021)	0.043 *** (0.014)	0.093 *** (0.015)	0.173 *** (0.033)	0.255 *** (0.049)
R <sup>2</sup>	0.131	0.067	0.074	0.097	0.129
Observations	2,074	2,074	2,074	2,074	2,074

Source: Authors' analysis from the WSS 2006.

Notes: \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%. Standard errors between parentheses. McFadden R<sup>2</sup> reported in quantile regressions. The reference category is a person with an intercept, eleven dummies for sector of activity of the firm and regional dummies are also included in all regressions.