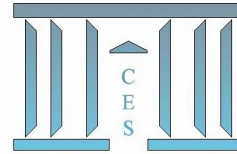




Documents de Travail du Centre d'Économie de la Sorbonne

C
E
S
W
o
r
k
i
n
g
P
a
p
e
r
s



Private vs. Public Sector : Discrimination against Second-Generation Immigrants in France

Clémence BERSON

2009.59



Private vs. Public Sector: Discrimination against Second-Generation Immigrants in France^{*}

Clémence Berson[†]

September 2009

Abstract

The assimilation of immigrants and their children is a burning issue in France. Governments build a large part of their policies on the labor market. The public sector is reputed to integrate minorities better because of its entrance exams and pay-scales. In this paper, a comparison of the public and private sectors shows that second-generation immigrants are not treated equally. Those of African descent are discriminated against in both sectors even though selection issues are controlled for, whereas the wages of those of South European origin are similar to those of the French.

JEL Codes: C35, J31, J45, J71

Keywords: Discrimination, wage gap, public and private sectors, France

^{*}I am grateful to Pierre Cahuc, Luke Haywood and the participants in seminars at the Paris School of Economics and the Ecole Polytechnique for their useful remarks.

[†]Paris School of Economics, University of Paris 1 - Panthéon Sorbonne, Centre d'Economie de la Sorbonne, Address: 106-112 bd de l'Hôpital 75647 Paris cedex 13, E-mail: clemence.berson@univ-paris1.fr

1 Introduction

France is traditionally a country of immigration due to its colonial history. The children of immigrants acquire French nationality by birth but real problems in the assimilation of this population are clearly visible, as the events of November 2005 have shown. Riots in the suburbs of big cities and particularly Paris, where many immigrants and their children live, showed up the assimilation issues in French society. Since this period, governments have tried to introduce policies to improve assimilation into the school system and the labor market. An administrative authority has been created to encourage equality between citizens and fight discrimination and some evidence has been collected of discrimination against workers of foreign origin in companies' hiring processes (Duguet *et al.*, 2007).

In economics, discrimination can be defined as differential treatment between two persons whose characteristics are similar. In the labor market, three main forms are observable. The first appears in the hiring procedure, the second concerns the level of responsibility in the firm and the last is the wage gap between the reference population and the minority. The latter is easier to measure because of the availability of census databases and the literature is rich in theory concerning the wage differential. Oaxaca (1973) and Blinder (1973) introduced a wage-decomposition: in which the cause of the gap which cannot be explained by differences in observable characteristics the cause is considered to be discrimination. This method is currently used in the empirical literature, as well as the introduction of dummies to evaluate the effect on wages of belonging to a minority group.

Concerning second-generation immigrants, monographs have been written on wage discrimination. In France, this subject is essentially treated by sociologists due to the lack of census data. Indeed the law forbids the collecting of data on ethnic origin. INSEE, the French National Institute of Statistics, introduced questions about the nationality of parents in their interviews or questionnaires only two years ago. Two recent studies, Aeberhardt *et al.* (2009) and Aeberhardt & Pouget (2007), study the wage gap for second-generation immigrants in France. The former uses a new econometric method to conclude that one third of the wage gap between 'French natives' (both of whose parents were born in France) and 'African natives' (both of whose parents were born in an African country) is not explained by differences in observable covariates between the two groups. The second study concludes that occupational segregation rather than wage discrimination can

be observed. In addition, Belzil & Poinas (2009) estimate a flexible dynamic model of education choices and early career employment outcomes. The study focuses on people of African origin and shows that schooling attainments explain mainly the differences in access to early career employment stability for this population. The parental background differences explain it to a lesser extent. The differences between French natives and second-generation immigrants in the labor market are partly due to education.

Theoretically, Becker (1957) studied discrimination for the first time from an economic point of view and assumed that discrimination is due to the taste of individuals (employer, worker, consumer) which leads to a higher cost of minority-workers for the employers. This discrimination should disappear with competition and time because it depends on profits. A second wave of theories comes from Phelps (1972), Arrow (1973), Akerlof (1985) and Aigner & Cain (1977). They introduce the concept of statistical discrimination: discrimination is rational in a context of imperfect information due to ignorance about the average quality of minority groups. The persistence of discrimination is explained by self-realization by minorities. In both cases, imperfect competition is necessary to perpetuate discrimination. Intuitively, more competition, for instance in a particular sector of the economy, should lead to less discrimination for minorities. Some empirical studies like Black & Strahan (2001) and Hellerstein *et al.* (2002) point out a correlation in this direction between competition and discrimination.

To improve this intuition, empirical work can be carried out on two sectors with different characteristics concerning competition. To this end, public and private sectors can be used. The choice of these two sectors results from the fact that most of the public sector is not competitive in its wages and hiring practices. Moreover this sector does not maximize profits. So there is no competitive pressure in this sector. There is a rich literature on the comparison between the private and public sectors. Empirical studies usually use wage-decomposition *à la* Blinder-Oaxaca to identify a public sector premium. But there are many criticisms concerning the choice of independent variables and the specification of the model, which impact discrimination measure. Recent literature estimates switching regression models in order to correct for bias due to inclusion in a sector. Indeed it is highly probable that selection between the two sectors is non-random due to different characteristics (for instance Dustman & Van Soest (1998) for Germany, Van Ophem (1993) and Hartog & Oosterbeek (1993) for the Netherlands, Van der Gaag & Vijverberg (1988) for Ivory Coast, Fougère & Pouget (2003b) for France

and Heitmueller (2006) for Scotland). The conclusions are very dependent on national characteristics.

Only three papers deal with this subject in France: Fougère & Pouget (2003b), Bargain & Melly (2008) and Befy & Kamionka (2003). Fougère & Pouget (2003b) aim to replicate the characteristics of the French public sector in their model by a tree of choices and try to identify the main determinants of entry into the public sector. Bargain & Melly (2008) use quantile regressions on a panel data set to measure the wage gap. They find that after controlling for unobserved heterogeneity, only small pay differences between sectors remain. Befy & Kamionka (2003) use a job search model and their estimation takes into account selectivity and sector choice biases. The results show that a large public sector pay premium exists for women and for low wages, whereas men of the public sector would earn more in the private sector.

The papers in the recent literature, which focus on the comparison of discrimination against minorities in the public and private sectors, essentially concern gender issues. Ethnicity or race are the subjects of studies mainly in the United Kingdom and the United States (see Gregory & Borland (1999) p.3616). The public sector is renowned for more equity in wages and hiring, notably concerning gender in the French case. The pay differences between men and women are obviously lower in the public sector than in the private one. Studying discrimination against another minority in the two sectors can illuminate debates on the fairness of the public sector. The aim of this paper is to compare discrimination against French people of foreign origin in the public versus the private sector, to enhance the theoretical intuition about discrimination.

This paper is organized as follows. The data are presented in Section 2 and the results of estimations in Section 3. Section 4 discusses the issues of selection introduced in 3. Finally, Section 5 concludes.

2 The data

The data are drawn from the French Labor Force Survey (Enquête Emploi en Continu) collected by the French National Institute of Statistics, INSEE. Each quarter, around 45,000 households are interviewed, which represents roughly 70,000 individuals. All members of a household can be interviewed and carry the same weight in the sample. Only 1/6 of the sample is new

each quarter and each household is interviewed six times in order to measure quarterly changes. This survey contains information about education level, occupation, wages, region, industry, employment status, social background and sector of employment.

Individuals' origin appears only in the most recent version through questions about parents' nationality. This is why only the 2006 data are used in this paper. Individuals are considered as second-generation immigrants when they possess French nationality and at least one parent has another nationality. Immigrants from Southern Europe and Africa constitute the biggest minorities in France and their assimilation into the labor market is very different. Most studies on this subject compare them to find out why the African immigrants are less assimilated in France than the South European. Their children represent 76% of second-generation immigrants in this sample. Thereafter an 'African native' represents a French national with at least one parent with an African nationality at birth. The same vocabulary is used for all origins. The distinction between an individual with one or two foreign parents is important. The sample permits us to introduce a dummy on the gender of the non-French parent in estimations. As we can see in the descriptive statistics, individuals of African origin are more likely to have two non-French parents while those of South European origin are as likely to have one or both non-French parents. The regressions take into account the gender of the non-French parent in order to observe if the nationality of father or of the mother has more influence on their child's later earnings.

The estimations are based on a sample composed of individuals aged between 16 and 60, who are neither in education nor in retirement. The survey contains workers in both the private and public sectors. The self-employed workers are omitted because this article focuses on direct or indirect discrimination by employers. Hourly wages are estimated in the following section and are calculated using the weekly hours of a 'normal' week. These wages are net of contributions but not of tax assessment. As the question on wages is only asked in the first and the last interview, the data hold only one wage per person in the year 2006. However, this information is self-reported and subject to measurement errors, especially for professions with flexible working hours such as managers. It would not be an issue for the measurement of the wage gap between French natives and foreign natives as the measurement error should be the same in the two groups.

After reducing the sample, it contains 26,190 individuals and around 11% are of foreign origin. Four main groups of origin can be distinguished.

Table 1. Descriptive statistics by origin and sector

	France		French				Africa		Foreigner	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
# observations	6,111	16,018	161	381	296	958	210	724	96	1,092
Hourly wage (Euro)	12.81	10.76	12.85	11.29	11.96	10.60	10.74	9.68	10.10	10.07
	(9.10)	(7.55)	(6.33)	(4.98)	(6.74)	(6.33)	(7.25)	(5.79)	(4.77)	(12.65)
Foreign parent										
<i>Father</i>	-	-	37.9	33.9	35.5	28.7	14.8	11.4	-	-
<i>Mother</i>	-	-	39.7	36.0	19.9	14.5	9.5	5.9	-	-
<i>Both</i>	-	-	22.4	30.1	44.6	56.8	75.7	82.7	100	100
Age										
<i>less than 25</i>	5.95	12.52	1.18	6.31	4.22	8.99	9.95	14.54	3.77	5.97
<i>25 to 45</i>	52.53	54.81	35.88	40.40	49.35	56.67	61.91	61.91	50.00	56.75
<i>45 to 65</i>	41.52	32.67	62.94	53.28	46.43	34.34	28.14	23.55	46.23	37.28
Female	62.00	44.45	68.82	47.98	62.34	46.87	64.07	43.50	64.15	33.74
Education										
<i>Univ. 3rd degree</i>	7.03	5.79	11.18	7.07	4.55	3.54	10.82	6.05	21.70	6.14
<i>Univ. 2nd degree</i>	14.63	4.52	14.71	4.29	12.01	4.04	11.26	5.15	12.26	6.40
<i>Univ. 1st degree</i>	16.62	14.70	12.35	12.88	17.21	12.83	10.82	12.23	3.77	5.28
<i>High school</i>	18.91	17.76	22.35	17.42	18.18	16.67	19.91	18.40	11.32	12.46
<i>Vocational training</i>	21.77	31.24	15.88	33.33	24.03	33.84	16.02	20.98	5.66	14.36
<i>Secondary education</i>	8.52	8.27	7.06	6.82	4.55	8.89	10.82	8.11	7.55	6.40
<i>No graduation</i>	12.51	17.72	16.47	18.18	19.48	20.20	20.35	39.09	37.74	48.96
Length of time in the job	189	129	213	166	182	128	104	78	93	100
# employees	12	9	12	9	14	9	15	14	21	16
Professional occupation										
<i>Manager</i>	16.92	11.84	20.59	13.38	12.34	10.30	12.99	8.37	24.53	7.44
<i>Intermediate</i>	34.25	25.86	35.29	26.52	31.82	25.45	31.60	21.24	18.87	12.37
<i>White-collar</i>	41.12	29.28	39.41	28.79	47.08	32.63	49.78	34.62	49.06	28.46
<i>Blue-collar</i>	7.71	33.02	4.71	31.31	8.77	31.62	5.63	35.78	7.55	51.73
Type of contract										
<i>Rolling contract</i>	87.93	90.83	89.41	95.45	86.69	92.22	74.89	84.94	52.83	89.19
<i>Fixed term contract</i>	9.23	5.44	8.24	3.54	9.74	5.05	18.61	11.33	35.85	9.08
<i>Others</i>	2.85	3.73	2.35	1.02	3.57	2.72	6.49	3.74	11.32	2.73
Work duration										
<i>Full time</i>	81.05	84.23	81.18	86.11	82.47	83.33	77.49	84.04	64.15	82.96
<i>Part time</i>	18.95	15.77	18.82	13.89	17.53	16.67	22.51	15.96	35.85	17.04
Living area										
<i>Ile-de-France</i>	12.84	11.47	15.88	15.15	15.91	15.86	31.17	31.40	35.85	40.31
<i>Ile-de-France periphery</i>	21.93	22.88	22.35	19.44	14.94	14.24	21.65	14.67	13.21	13.24
<i>North</i>	8.32	9.80	11.76	16.41	4.55	4.75	3.46	6.44	1.89	3.37
<i>East</i>	9.34	10.30	15.71	20.96	9.74	14.04	6.93	10.04	17.92	11.59
<i>West</i>	13.75	14.91	5.88	5.81	4.87	3.43	5.63	4.63	6.60	3.72
<i>South East</i>	12.09	10.78	5.88	4.55	13.31	13.64	5.19	6.69	6.60	8.56
<i>Centre</i>	9.45	10.73	8.24	8.08	13.31	17.17	13.85	11.58	10.38	8.56
<i>South West</i>	12.29	9.12	15.29	9.60	23.38	17.87	12.12	14.54	7.55	10.64
Built-up area (inhab.)										
<i><20 000</i>	37.83	43.97	29.41	33.33	32.47	32.32	12.99	14.29	22.64	20.16
<i>20 000<200 000</i>	27.15	23.55	32.94	26.77	26.62	27.07	29.44	24.32	19.81	21.45
<i>>200 000</i>	35.02	32.48	37.65	39.90	40.91	40.61	57.58	61.39	57.55	58.39
ZUS (Sensitive Urban Area)	5.49	4.73	6.47	7.32	5.52	5.96	20.78	24.71	22.64	19.29

Note: (1) Public sector (2) Private sector. All variables except log wage, age, tenure, number of employees and number of children are percentages. French people of another foreign origin are not represented in this table.

Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

The first one is French with North and East European parents mainly from Poland, Russia and Rumania and represents 2.07% of the sample. The statistics in Table 1 show that they are more educated and skilled than the French average but also older. The second significant group comes from Southern Europe and accounts for 4.74% of the sample. This wave of immigration mainly came in France in the 1930s and 1960s. The second-generation, now French, is lower skilled than the French average and they are more likely to work in the private sector. Then African natives have to be distinguished. They come from the most recent wave of immigration to France and they account for 3.68% of the sample. Their countries of origin are North Africa and sub-Saharan Africa. Their parents arrived at the time of decolonization or later from ex-colonies in North Africa. Two thirds of the descent of sub-Saharan Africans came also from ex-colonies. For one third of them French is their mother tongue. Africa is now the biggest source of immigrants in France. This group is younger and has more children. More than 30% live in Paris and its suburbs and another 30% in other big cities. They work more in the private than in the public sector and they are likely to be either more or less educated than the French average. This last phenomenon can be linked with the auto-realization of discrimination in the labor market by expectation. People know that intermediate qualifications for them are less attractive than for other workers, due to discrimination. They under or over-invest in education to escape from this difference of treatment. Finally, a last group of French nationals of foreign descent (other countries) is created, which represents about 0.59% of the whole sample. Including foreigners, who do not have French nationality, allows a comparison with second-generation immigrants. They represent 4.61% of the sample.

The public sector includes state, local government and public hospital employees and it represents 26.35% of working people. The private sector includes private firms, non-profit associations publicly-owned and national firms. National publicly-owned firms represent 24.41% of the private sector and have been added because of their profit maximization management. The public sector is slightly over-represented as it represented only 21.3% of working people in France on December 31st, 2006. 49% of this population work at state level, 32% for the local public sector and 19% in public hospitals. The sample seems to be representative as the figures are 52.53%, 31.12% and 16.34% for each public subsector, respectively. A description of the French public sector has been made by Pouget (2005). He points out differences between the public and private sectors. As in this sample, he notes that the

skills structure varies across sectors. It hires more managers, intermediate professionals and white-collar than blue-collar workers, who are employed more by the private sector. Moreover, in the public sector, workers are often over-qualified compared to the level required. This is partly due to the increase in unemployment in the eighties. Indeed civil servants have a job for life in France and, as Krueger (1988), and Fougère & Pouget (2003b) in the French case, have observed the application rate for government jobs increases as the ratio of public to private sector earnings increases or as unemployment rate rises. Consequently the average quality of applicants in the public sector rises with the number of applicants. Indeed, public sector employment seems to attract more women because of its stability but they are often employed in low level or in part time jobs: the public sector is predominantly female apart from manager functions. Moreover, the data show that workers in the public sector are older than those in the private sector. Several explanations could be given: first, government budget constraint currently lead the state to hire fewer civil servants to reduce the number of workers in the public sector. As the state offers life-time employment and then keeps workers whatever their age, the number of older workers is higher. Secondly, as workers are better qualified in the public sector they arrive later onto the labor market.

Concerning the diversity of the national origin of workers, the South European or African natives are under-represented in the public sector. This fact has been emphasized by Pouget (2005). He distinguishes workers with one foreign parent from those with two foreign parents. The latter are more under-represented in the public sector and this is intensified for North African natives. There is a tendency for immigrants' children to have a lower probability of finding a job in the public sector than French natives, even when they are the same age, have the same qualifications and an equivalent father's profession. These points are addressed in the following sections.

3 The results

Empirical evidence of differences in treatment toward workers because of non-productive characteristics, such as physical criteria for instance, are established through several methods. The more usual is to evaluate the wage gap between the population which can be discriminated against and the witness population. Here the witness population is the French natives and the

potentially discriminated-against population is made up of the other natives. As all individuals are not spread identically between both sectors, an estimation of the probability of working in each sector is necessary to correct the bias induced. Firstly, the wage gap is evaluated at different levels of detail, and secondly, attention is focused on selection issues.

3.1 Wage gap

In order to measure the wage gap due to individuals' origin, a wage-equation is estimated. The explanatory variables comprise a dummy controlling for origin and all variables are interacted with a sector dummy in order to identify a differential due to origin in both sectors. Thereby, it is possible to take into account separately the effects of origin in each sector and to compare the coefficients. Let w_i be the log hourly wage. The log wage-equation to be estimated is:

$$\ln(w_i) = X_i'\beta + \text{pub.orig}\beta_{po} + u_i \quad (1)$$

where X is the vector of characteristics, u an error term and i is an individual index.

To complete the study, the sectors are divided into subsectors in a second estimation. Then both origin and sector dummies are interacted with all explanatory variables in a third regression to analyse variables subject to difference by origin. In each estimation, independent variables control for post attributes such as qualifications, working time (full-time versus part-time), employment contracts and economic sector (industry, trade, finance etc). Concerning individual characteristics, age (quadratic function), education, gender and housing location (region, size of the city, sensitive urban area (ZUS)) are added in the regression. A variable concerning which parent does not have the French nationality is then used. The results of these estimations are shown in Tables 7, 8, 9 and 10 in the Appendix. Tables 2, 3 and 4 sum up the main findings concerning the impact of origins and sectors *ceteris paribus*. The reference group is the French natives working in the public sector.

Table 2 summarizes the results of the estimation of log wage-equation when a dummy controlling for the sector (public or private) is interacted with all the variables of the equation. The first estimation, noted A in the

Table 2. Public and private sector log wage-equation

	A		B	
	Public sector	Private sector	Public sector	Private sector
# of observations	6,906	19,284	6,906	19,284
Intercept	2.08***	1.97***	2.08***	1.97***
<i>Origin</i>				
French	-	-	-	-
N./E. Europe	-0.03	-0.01	-0.07	-0.10
S. Europe	-0.01	-0.01	-0.05	-0.11
Africa	-0.05**	-0.04***	-0.08	-0.14*
Foreigner	-0.08***	-0.05***	-0.10	-0.15*
<i>Foreign parents</i>				
Mother			0.01	0.09
Father			0.09	0.09
Both			0.02	0.10
Adjusted R^2	0.5255		0.5256	

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%. This estimation is controlled for qualifications, working time, employment contracts, economic sector, age, education, gender and housing location.

Source: INSEE, Paris.

table, does not contain explanatory variables on workers' foreign parents. A difference of 0.11 is observable between wages in favor of the public sector. This result is not significant and conforms to the literature on France, which has no uniform results on a premium in favor of one sector. Looking for the origin of workers, all the European natives have no significant gap compared to the French natives. On the other hand, the African natives earn 5% less than the French natives in the public sector and 4% in the private sector. The difference between the two sectors is not significantly different from zero. In the private sector, the pay-difference is almost the same as for the foreigners. In the public sector, the wage gap for the foreigners is 8%, three percentage points more than the one with the African natives. The presence of a pay-difference in the public sector seems astonishing because of wage scales. But the coefficient takes into account all the variables of the regressions. It means that between a foreign native with all the same controlled characteristics than as a French native, a difference of x% is observable on average. For instance, the fact that African natives are on average over edu-

cated for their occupation contributes to this differential. When a dummy on the non-French parents is added in the regression, column B, there is an impact only on the coefficients of origin and the significance of some coefficients disappears. The foreign parents do not have a significant effect on wages and origin seems to be more important to explain wage differentials. However, lower figures for the coefficients of origin compensate for the positive effect of foreign parents. To conclude, these two variables do not change the general pattern of results, and neither of the coefficients on origin is significant.

Table 3. Subsectors log wage-equation

	(1)	(2)	(3)	(4)	(5)
# of observations	3,649	2,133	1,124	4,747	14,537
Intercept	2.02***	1.84***	1.63***	1.89***	1.98***
<i>Origin</i>					
French	-	-	-	-	-
N./E. Europe	-0.03	0.02	-0.06	-0.01	0.00
S. Europe	-0.04*	0.04	0.03	-0.03	0.00
Africa	-0.10***	-0.04	0.06	-0.04	-0.04***
Foreigner	-0.08*	-0.11**	-0.04	-0.07***	-0.04***
Adjusted R^2	0.5338				

Note: (1) state, (2) local government, (3) public hospital, (4) public and national firm, (5) private firm. * Significant at 90%, ** Significant at 95% and *** Significant at 99%. This estimation is controlled for qualifications, working time, employment contracts, economic sector, age, education, gender and housing location.

Source: INSEE, Paris.

Then sectors are detailed in Table 3. The public sector is divided into three parts (state, local government and public hospital) and the private sector into two parts (publicly-owned national firms and private firms). The wage gaps between subsectors are not significant except for the public hospital. A difference of 0.38 can be observed. As in the previous estimations, only the African natives have a significant pay-differential from the French natives. This wage gap varies with the subsector. The African natives working for the state are paid 10% less, and only 4% less in public national firms than in private firms. There is no significant coefficient for the other subsectors. In comparison, foreigners have a wage gap of 8% at state level, 6% in national public firms and 4% in private firms. The private firms treat the

foreigners and the African natives in the same way, whereas the public and national firms have a pay-difference only for the foreigners. The larger wage gap is observable at the state level for the African natives. The results are not significant in the public hospital because of the low number of observations in this subsector. The wage gap is no longer significant at the state level and in public and private firms when the variables on 'having a non-French mother' and 'having a non-French father' are introduced (see column B, Table 3). The interpretation is unchanged with regard to the previous estimation and the results are not shown.

In order to observe a particular effect of origin on the other variables, a third equation is estimated. This equation interacts the dummies of origin and sector with all other explanatory variables. Table 4 sums up the results. The coefficients of individual characteristics may depend on origin in that certain institutions may tend to equalize wages between the origins and thus act to offset the discriminatory impact of the intercept term. In this case, a difference between intercept terms is observable for the South European and African natives in both sectors. The South European natives have a gap of 0.11 in the public sector and 0.12 in the private sector compared to the French natives in the same sector. Concerning the African natives, the gap is positive and reaches 0.21 in the public sector and 0.22 in the private sector. The intercept of the African natives could be amazing but this phenomenon has explanations. The constant does not represent a basic salary in our case. The individual characteristics do not explain the wages of African natives as well as those of the French natives. This leads to a higher intercept term. Moreover, roughly 30% of African natives earns the minimum wage compared to 14% of the French natives. The minimum wage forms a mass point at the beginning of the wage distribution and it decreases the fit of the wage-decomposition by individual characteristics.

The variables of Table 4 give interesting information on the impact of individual characteristics of different groups. A gender gap is observable in both sectors but it is 4% higher in the private sector. This result conforms the studies gender differences between the two sectors. The gender gap increases significantly only in the case of the Southern European natives and is lower for the foreigners. In general, men and women of the same origin have the same gender gap as the French natives: the origin gap is not affected by gender. The coefficient of age is higher for the South European and African natives. It could be explained by the statistical discrimination against workers

Table 4. Public and private sector log wage-equation by origin

	Public sector					Private sector				
	(F)	(NEE)	(SE)	(A)	(For)	(F)	(NEE)	(SE)	(A)	(For)
# of observations	6,111	161	296	210	96	16,018	381	958	724	1,092
Intercept	2.08***	2.05***	1.97***	2.29***	2.21***	1.98***	1.90***	1.84***	2.20***	2.10***
Age	0.02***	0.03***	0.04***	0.04***	0.02***	0.02***	0.03***	0.04***	0.04***	0.01*
Age squared*100	-0.03***	-0.03***	-0.04***	-0.05***	-0.02***	-0.02***	-0.03**	-0.04***	-0.05***	-0.01**
Female	-0.08***	-0.07*	-0.11***	-0.07***	-0.03**	-0.12***	-0.10***	-0.14***	-0.11***	-0.06***
<i>Education</i>										
PhD	0.19***	0.29***	0.05	0.25***	0.07	0.19***	0.28***	0.04	0.24***	0.07
Master's degree	0.16***	0.17***	0.03	0.15***	0.14***	0.07***	0.08	-0.05	0.07	0.05
Bachelor	0.07***	0.12**	0.05	0.07*	0.14***	0.06***	0.10*	0.04	0.05	0.12***
Graduate	-	-	-	-	-	-	-	-	-	-
Voc. Trainee	-0.07***	-0.08*	-0.11***	0.00	0.02	-0.06***	-0.07	-0.10***	0.01	0.02
Secondary educ.	-0.08***	-0.06	-0.09**	-0.09**	-0.06	-0.04***	-0.02	-0.05	-0.05	-0.03
No graduation	-0.16***	-0.15***	-0.21***	-0.10***	-0.06*	-0.15***	-0.14***	-0.19***	-0.09***	-0.04
Fixed term	-0.13***	-0.13*	-0.04	-0.16***	-0.08**	-0.08***	-0.07	0.01	-0.10***	-0.03
ZUS	-0.04**	-0.03	-0.03	-0.06*	-0.04	-0.04***	-0.03	-0.03	-0.06**	-0.05**
Adjusted R^2	0.5315									

Note: (F) French natives, (NEE) Northern and Eastern European natives, (SE) Southern European natives, (A) African natives, (For) foreigner. * Significant at 90%, ** Significant at 95% and *** Significant at 99%. Natives with other origins are dropped in this table. This estimation is controlled for qualifications, working time, employment contracts, economic sector, age, education, gender and housing location.

Source: INSEE, Paris.

of these origins. The return on education is different depending on origin but relatively similar in both sectors. The East and North European natives have almost the same return on education, except an increase of 10% when they are PhD graduates. The South European natives have lower returns on a low level of education and no significant returns on a high level. It is important to note that they are less highly educated than the French average. The African natives show a different trend. In the public sector their returns on education are as high as those of the French natives, except in extreme levels with a higher return on a PhD and a lower return in the case of no graduation. In the private sector, the extreme levels show the same results but all coefficients of the middle levels are not significant. The lower coefficient of 'no graduation' is affected by the minimum wage as described above: no significant differences are observed between levels around 'graduate'. The returns on education for the African natives are more homogeneous than those of French natives, and they have to obtain a high diploma to benefit from a significant return.

Two other variables are added in Table 4: the type of contract and the housing localization in a urban sensitive area (ZUS). Firstly, there is the impact of having a fixed term contract. The African natives have this kind of contract more than the average. And the coefficient is significantly less high than for the French natives, whereas it is not significant for the other origins. Secondly, the dummy on the ZUS decreases the wages of the African natives more, whatever the sector. This impact is added to the discrimination factor as Simon *et al.* (2000) show in their note. Indeed, the immigrants from Africa tend to live more in social housing and not in private apartments and the ZUS are essentially made up of social housing and located in the suburbs.

The origin of workers has a strong impact for the African natives. Compared to the French natives, they earn around 5% less in the private and in the public sectors. Unfortunately, the sample seems to small to have a real and significant effect the number and the sex of non-French parent. Detailing the sectors, the state has the biggest wage gap, 6% more than in the private firms. The South European natives do not have a significant wage gap with the French natives. An estimation by origin show that the coefficients of individual characteristics are different. The North and East European natives are relatively similar to the French natives. The wage of the South European natives is lower for the women and their return of education are not significant for the highest levels of education. The returns of education are higher for the PhD level for the African natives but in the private sector, no significant return is observable for the intermediate levels of education.

The negative impact of the type of contract and the ZUS for them show that the wage is sensitive to other forms of discrimination. The hiring process is known as discriminating against the second-generation African immigrants as it is explained in the introduction. And the difficulties of this minority on the housing market decrease their wages as the variable ‘ZUS’ show.

3.2 Selection issues: the probability of working in a sector

Economic discrimination can be present upstream from earnings and particularly in the hiring process. The workers have to choose between the public and private sectors. The hiring process is different and French natives and non-French natives can be treated differently in the two sectors. The following section is concerned with describing this bias and simply evaluating it. As can be observed, individuals apply in different ways if they want to work in the private or in the public sector. In the first case, there is free entry, with matching between employers and applicants. In the second case, a majority is hired by examination results and the remainder through the market. Consequently we cannot consider that the assignment between the two sectors is random. A selection bias exists in the choice of the sector. A sector employment-equation (2) is introduced.

$$S_i^* = B_i' \delta + orig \delta_o + \nu_i \quad (2)$$

where S_i^* is latent variable, B the vector of characteristics, δ the coefficient to be estimated and ν the error term for participation.

The latent variable is not observable and an index-function is used:

$$\begin{aligned} S_i &= 1 \text{ if } S_i^* > 0 \\ S_i &= 0 \text{ if } S_i^* \leq 0 \end{aligned}$$

where $S_i = 1$ and $S_i = 0$ indicate private sector employment and public sector employment respectively. The error term of the sector selection equation is normally distributed with mean 0 and variance σ_ν .

The explanatory variables are all individual characteristics used in the wage estimation. The individual’s social background completes the explanation of the probability of working in the private or in the public sector.

Social background characteristics are supposed to affect only the sector selection and not wages. In the literature several variables are used e.g. the education attainment of the parents, the father's socio-professional group, the mother's working status or the siblings (see Hartog & Oosterbeek (1993), Dustman & Van Soest (1998)). In this study, the mother's and the father's socio-professional group are available. The last characteristic is highlighted by Fougère & Pouget (2003a) in their study of the economic determinants of the probability of working in the public sector. The type of occupation of the father influences this probability. Particularly, the children of civil servants are over-represented in the public sector. Indeed, Pouget (2005) shows that the children of civil servants are studying longer than the average and the workers hired by the public sector are more qualified than those of the private sector. Moreover, their knowledge of the functioning of the public sector gives them the opportunity to prepare the exams better. This last piece of information is important and suggests it could be use to identify sector employment, as do different papers about the French case. This variable is added into the probit and it is compressed into six categories. Farmers, craftsmen, storekeepers, the self-employed and entrepreneurs are the first category, called independent. High level occupations are the professions, college and university teachers and executives. Middle level occupations are made up of intermediary employees. Low level occupations are split in two categories: skilled and non-skilled workers. The last category is non-working people. Moreover, a variable concerning the individual's expected wage gain from public employment is relevant to the probability of working in the private or in the public sector and is added in a second regression. This variable is the differential between the expected wages in the public sector and the expected wages in the private sector, calculated in the first estimation of Section 3.1 with the observable characteristics of each worker. As in the estimation of the wage gap, the variables 'having a non-French mother' and 'having a non-French father' are then added to the regression. The results are summarized in Table 5.

In estimation A, the South European and African natives have a probability of working in the private sector, which is 3% higher than the French natives. The North and East European natives are similar to the French natives. The foreigners have an 18% higher chance of working in the private sector than the French natives. This can be explained by the fact that foreigners are not allowed to be civil servants, who represent a large proportion of public sector employment. Concerning the parents' socio-professional

Table 5. Probability to work in the private sector

	A	B	C
# of observations	26,190	26,190	26,190
<i>Origin</i>			
French	-	-	-
N./E. Europe	0.01	-0.02	0.09
S. Europe	0.03**	0.03**	0.11
Africa	0.03*	-0.01	0.06
Foreigner	0.18***	0.12***	0.16
<i>Father's occupation</i>			
Independent	0.02*	0.01	0.01
Executive, profession, professor	0.02*	0.01	0.01
Intermediate profession	-	-	-
White-collar	-0.01	-0.02	-0.02
Blue-collar	0.03***	0.03***	0.03***
Non-working	0.02	0.02	0.02
<i>Mother's occupation</i>			
Independent	0.06***	0.06***	0.06***
Executive, profession, professor	0.01	0.01	0.01
Intermediate profession	-	-	-
White-collar	0.03**	0.02**	0.02**
Blue-collar	0.04***	0.04***	0.04***
Non-working	0.05***	0.05***	0.05***
Wage differential		-1.19***	-1.19***
<i>Foreign parents</i>			
Mother			-0.17
Father			-0.14
Both			-0.16
Pseudo R^2	0.0793	0.1340	0.1346

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%. This estimation is controlled for qualifications, working time, employment contracts, economic sector, age, education, gender and housing location.

Source: INSEE, Paris.

category, the reference is the intermediate professions. Having a blue-collar father leads to a significant 3% higher probability of working in the private sector and an independent or high level occupation father increases this probability by 2%. Having an executive, profession or professor mother have the same impact that a mother who has an intermediate profession. The other socio-professional categories emphasize the probability to work in the private sector. The non-exclusion of the socio-professional categories of both parents

from the probit is tested with a likelihood ratio statistic. This test shows that the null hypothesis is rejected at 99%.

Estimation B takes into account the individual's expected wage gain from public employment. It assumes that individuals behave rationally by comparing the potential wage in both sectors before deciding to work in a particular sector. The coefficient is significantly negative. This implies that the greater the predicted wage gain from working in the public instead of the private sector, the less likely an individual is to select the private sector. This result shows that the matching seems to be fitted to individuals' observable productive characteristics: an increase of one point of the log wage differential diminishes by 119% the probability of working in the private sector. The largeness of the coefficient is due to the fact that the log wage is very small, between 0 and 6. It leans on the non-random assignation between the sectors. The coefficient of the African natives is no longer significant. It means that their observable productive characteristics are more adapted to the private sector than to the public sector. The likelihood ratio statistic of the expected wage gain from public employment rejects the null hypothesis at 99%.

Then estimation C includes variables on the parents' nationality. The only change concerns the origin of workers. The coefficients are no longer significantly different from zero and, as in the wage estimation, the significance of the origin dummies disappears. This coefficient means that the non-French parent's gender has not really an effect on the probability of working in the private sector. The impact seems to be heterogeneous from origin to origin. This can explain the lack of significance of coefficients. The likelihood ratio statistic does not accept the null hypothesis at 90% and this variable will not be used in the switching regression.

To conclude, only the South European natives have a higher probability of working in the private sector, but they have no significant wage gap with the French natives. On the other hand, the African natives have the same probability of working in both sectors, but a wage gap exists with the French natives. This gap is particularly large at the state level.

4 Switching model

The selection bias induced by the choice between the private and the public sector can be introduced into the equation-wage. It takes into account the non-random assignment to a sector and the simultaneity of the wage equations and sector selection function. A model of endogenous switching regression is adapted to this case. This model was described by Lee (1978) and was applied to the sector choice by Hartog & Oosterbeek (1993). Individuals are sorted over different states by a switching equation. In our case, they work in the public or in the private sector. The observed wage rate depends on the worker's status, i.e. we observe:

$$\ln(w_{1i}) = X_i' \beta_1 + orig \beta_{1o} + u_{1i}, \quad (3)$$

$$\ln(w_{2i}) = X_i' \beta_2 + orig \beta_{2o} + u_{2i}, \quad (4)$$

$$S_i^* = \gamma(\ln(w_{1i}) - \ln(w_{2i})) + B_i' \delta + orig \delta_o + \nu_i. \quad (5)$$

where S , w_{ji} , X_i , B_i , β_j and δ_i are already defined in previous parts, $j = 1$ if the individual i works in the public sector and $j = 2$ if she/he works in the private sector. Thus we have a simultaneous equations model involving qualitative limited dependent variables. Equation (6) is the switching function and takes up the sector choice equation, and equations (3) and (4) are the sector specific wage equations defined in the previous part. The variables permitting to identify the switching coefficients are the socio-professional category of the mother and the father.

Table 6 presents the estimation results of the switching model. The first two columns show the coefficients for the wage equations and the third column contains the estimates for the switching equation. This regression confirms a difference between the African natives and the rest of the French population. In the private sector, their wage gap is as large as that of the foreigners. In the public sector, their wage gap is 2% larger than in the private sector but is far from that of the foreigners with a 7% difference. The South European natives have no differences from the French natives, but a larger probability of working in the private sector. Concerning the impact of the family background on the probability of working in a sector, only a mother working as an independent significantly increases the probability of working in the private sector. All other coefficients are no more significant than in the previous estimation of the choice of sector. This result is similar to that of Hartog & Oosterbeek (1993).

Table 6. Public and private sector log wage-equations and sector selection function

	Public sector	Private sector	Selection function
# of observations	6,906	19,284	26,190
Intercept	1.94***	1.58***	0.34*
<i>Origin</i>			
French	-	-	-
N./E. Europe	-0.01	-0.01	-0.06
S. Europe	-0.01	-0.02	0.10*
Africa	-0.06***	-0.04***	0.02
Foreigner	-0.13***	-0.04***	0.45***
<i>Father's occupation</i>			
Independent			-0.01
Executive, profession, professor			0.01
Intermediate profession			-
White-collar			-0.02
Blue-collar			0.01
Non-working			0.06
<i>Mother's occupation</i>			
Independent			0.15***
Executive, profession, professor			-0.15*
Intermediate profession			-
White-collar			0.07
Blue-collar			-0.01
Non-working			0.06
σ_1		0.29***	
σ_2	0.35***		
ρ_1		0.10**	
ρ_2	-0.72***		

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%. This estimation is controlled for qualifications, working time, employment contracts, economic sector, age, education, gender and housing location.

Source: INSEE, Paris.

The correlations between the wages and the sector choice equation are the coefficients ρ_i in the switching model. Since ρ_1 is positive and significantly different from zero, the workers in the private sector earn lower wages in that sector than a random individual from the sample would have earned. On the contrary, ρ_2 is negative and significantly different from zero, those working in the public sector earn higher wages in that sector than a random individ-

ual from the sample would earn. An interpretation is that the workers in the public sector have better observable characteristics concerning the wage-decomposition than the rest of the sample. But many of their characteristics would be attractive in the private sector too.

5 Conclusion

Using the French Labor Force Survey, this paper provides an empirical evaluation of the discrimination against second-generation immigrants. In order to compare the public and the private sector, a wage-equation is estimated by sector. But the assignment between sectors is non-random. A switching model takes this bias into account by a simultaneous equations model with limited dependent and qualitative endogenous variables.

It is found that only the African natives have a significant pay-differential from the French natives. The particular situation of the African natives is pointed out in all studies on the second-generation immigrants in France, and compared to the South European natives, who are better assimilated in the labor market. Several explanations can be given. The first is that the educational attainment is really different, as Belzil & Poinas (2009) show. This affects the hiring process and their wages into the labor market. The second explanation is the differences of behavior at work observed in the different minorities in France, which is put forward by Senik & Verdier (2007). A third interpretation is the importance of housing. The fact that the African immigrants are mostly in social housing and in ZUS decreases their probability of access to higher-level posts. This study shows that this has an impact on wages too. Thus, differences in behavior, unobserved factors or discrimination can explain the wage gap of the African natives.

The other result of this paper is that, contrary to the reputation of fairness enjoyed by the public sector, the African natives are as discriminated against in this sector as they are in the private sector. The wage gap is observed in the simple OLS wage-equation estimation and persists when we control for the non-random assignment of individuals in the sectors. Looking at the sectors in detail, the pay-differential is larger at the state level, despite the presence of wage scales.

References

- Aeberhardt, R., & Pouget, J. 2007. *National Origin Wage Differentials in France: Evidence from Matched Employer-Employee Data*. IZA Discussion Papers 2779.
- Aeberhardt, R., Fougère, D., Pouget, J., & Rathelot, R. 2009. Wages and Employment of French Workers with African Origin. *Journal of Population Economics*. Forthcoming.
- Aigner, D.J., & Cain, G.G. 1977. Statistical Theories of Discrimination in Labor Markets. *Industrial and Labor Relation Review*, **30**(2), 175–187.
- Akerlof, G.A. 1985. Discriminatory, Status-based Wages among Tradition-oriented, Stochastically Trading Coconut Producers. *The Journal of Political Economy*, **93**(2), 265–276.
- Arrow, K. J. 1973. The Theory of Discrimination. *Pages 3–33 of: Ashenfelter, O., & Rees, A. (eds), Discrimination in Labor Markets*. Princeton University Press.
- Bargain, O., & Melly, B. 2008. *Public Sector Pay Gap in France: New Evidence using Panel Data*. IZA Discussion Papers 3427.
- Becker, G. 1957. *The Economics of Discrimination*. University of Chicago Press.
- Beffy, M., & Kamionka, T. 2003. *Is Civil-servant Human Capital Sector-Specific?* CREST-INSEE Discussion Papers.
- Belzil, C., & Poinas, F. 2009. Education and Early Career Outcomes of Second-Generation Immigrants in France. *Journal of Labour Economics*. Forthcoming.
- Black, S.E., & Strahan, P.E. 2001. The Division of Spoils: Rent-Sharing and Discrimination in a Regulated Industry. *American Economic Review*, **91**(4), 814–831.
- Blinder, A. 1973. Wage Discrimination: Reduced Form and Structural Estimates. *Journal of Human Resources*, **8**, 436–455.

- Duguet, E., Léandri, N., L'Horty, Y., & Petit, P. 2007. *Les jeunes français issus de l'immigration font-ils l'objet d'une discrimination à l'embauche ? Une évaluation expérimentale sur la région Ile de France*. Centre d'Etude des Politiques Economiques de l'Université d'Evry.
- Dustman, C., & Van Soest, A. 1998. Public and Private Sector Wages of Male Workers in Germany. *European Economic Review*, **42**, 1417–1441.
- Fougère, D., & Pouget, J. 2003a. Les déterminants économiques de l'entrée dans la fonction publique. *Economie et statistiques*, 15–48.
- Fougère, D., & Pouget, J. 2003b. *Who Wants to Be a 'Fonctionnaire' ? The Effects of Individual Wage Differentials and Unemployment Probabilities on the Queues for Public Sector Jobs*. CREST-INSEE Discussion Papers.
- Gregory, R.G., & Borland, J. 1999. *Recent Developments in Public Sector Labor Markets*. Vol. 3. Elsevier. Chap. 53, pages 3573–3630.
- Hartog, J., & Oosterbeek, H. 1993. Public and Private Sector Wages in the Netherlands. *European Economic Review*, **37**(1), 97–114.
- Heitmueller, A. 2006. Public-Private Sector Wage Differentials in Scotland: an Endogenous Switching Model. *Journal of Applied Econometrics*, **9**, 295–323.
- Hellerstein, J.K., Neumark, D., & Troske, K.R. 2002. Market Forces and Sex Discrimination. *The Journal of Human Resources*, **37**, 353–380.
- Krueger, A. 1988. The determinants of Queues for Federal Jobs. *Industrial and Labor Relations Review*, **41**, 567–581.
- Lee, Lung-Fei. 1978. Unionism and wage rates: A simultaneous equations model with qualitative and limited dependent variables. *International Economic Review*, **19**(2), 415–433.
- Oaxaca, R. 1973. Male-Female Wage Differentials in Urban Labor Markets. *International Economic Review*, **14**(3), 693–709.
- Phelps, E. 1972. The Statistical Theory of Racism and Sexism. *American Economic Review*, **62**(4), 639–651.

- Pouget, J. 2005. *La France, Portrait social*. 2005-2006 edn. Paris: INSEE.
Chap. La fonction publique : vers plus de diversité, pages 143–162.
- Senik, C., & Verdier, T. 2007. *Segregation, Entrepreneurship and Work values: the Case of France*. PSE Discussion Papers.
- Simon, P., Kirszbaum, T., Chafi, M., & Tissot, S. 2000. *Les discriminations raciales et ethniques dans l'accès au logement social*. Note. GELD.
- Van der Gaag, J., & Vijverberg, W. 1988. A Switching Regression Model for Wage Determinants in the Public and Private Sectors of a Developing Country. *The Review of Economy and Statistics*, **70**(2), 244–252.
- Van Ophem, H. 1993. A Modified Switching Regression Model for Earnings Differentials Between the Public and the Private Sectors in the Netherlands. *Review of Economics and Statistics*, **75**(2), 215–223.

Table 7. Public and private sector log wage-equation

	A		B	
	Public	Private	Public	Private
Intercept	2.08***	1.97***	2.08***	1.97***
N./E. Europe	-0.03	-0.01	-0.07	-0.10
S. Europe	-0.01	-0.01	-0.05	-0.11
Africa	-0.05**	-0.04***	-0.08	-0.14*
Others	-0.05	-0.06*	-0.08	-0.15*
Foreigner	-0.08**	-0.05***	-0.10	-0.15*
Age	0.03***	0.02***	0.03***	0.02***
Age squared*100	-0.03***	-0.02***	-0.03***	-0.02***
Female	-0.08***	-0.11***	-0.08***	-0.11***
Phd	0.19***	0.18***	0.19***	0.18***
Master's degree	0.15***	0.06***	0.15***	0.06***
Bachelor	0.07***	0.06***	0.07***	0.06***
Voc. Trainee	-0.07***	-0.06***	-0.07***	-0.06***
Secondary educ.	-0.08***	-0.04***	-0.08***	-0.04***
No graduation	-0.16***	-0.14***	-0.16***	-0.14**
Tenure	0.09***	0.05***	0.09***	0.05***
# employees	-0.04**	-0.01	-0.04**	-0.01
Profession	0.31***	0.30***	0.31***	0.30***
Art and literacy	0.12***	0.20***	0.12***	0.20***
Executive	0.16***	0.24***	0.16***	0.24***
Engineer	0.23***	0.20***	0.23***	0.20***
Clergy	-0.21	-0.34**	-0.21	-0.34**
Tertiary intermediate profession	-0.12***	-0.08***	-0.12***	-0.08***
Technician	-0.15***	-0.08***	-0.15***	-0.08***
White-collar	-0.24***	-0.24***	-0.24***	-0.24***
Qualified worker	-0.29***	-0.25***	-0.28***	-0.25***
Non-qualified worker	-0.28***	-0.31***	-0.28***	-0.31***
Fixed term	-0.13***	-0.08***	-0.13***	-0.08***
Trainee	-0.15***	-0.16***	-0.15***	-0.16***
Apprentice	-0.53***	-0.54***	-0.53***	-0.54***
Part time	0.00	-0.02***	0.00	-0.02***
Grande couronne	-0.06***	-0.09***	-0.06***	-0.09***
North	-0.05***	-0.11***	-0.05***	-0.11***
East	-0.05***	-0.06***	-0.05***	-0.06***
West	-0.09***	-0.11***	-0.09***	-0.11***
South east	-0.05***	-0.10***	-0.05***	-0.10***
Center	-0.04***	-0.09***	-0.04**	-0.09***
South west	-0.04***	-0.09***	-0.04***	-0.09***
<20000 inhab	0.00	-0.02***	0.00	-0.02***
>200000 inhab	0.00	0.00	0.00	0.00
Zus	-0.04**	-0.04***	-0.04**	-0.04***
Industry	-0.06	0.07***	-0.06	0.07***
Electricity, gas, watter	-0.14	0.13***	-0.14	0.13***
Construction	-0.38	0.07***	-0.39	0.07***
Trade, restauration	-0.30**	-0.02	-0.30**	-0.02
Communication, transportation	-0.23**	0.05***	-0.23**	0.05***
Finance, insurance, property, firms' service	-0.24**	0.06***	-0.25**	0.06***
Community, social and particular service	-0.20*	0.00	-0.20*	0.00
Non-French mother			0.01	0.09
Non-French father			0.09	0.09
Both			0.02	0.10
Adjusted R^2	0.5255		0.5256	

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%.

Source: INSEE, Paris.

Table 8. Subsectors log wage-equation

	A				
	1	2	3	4	5
Intercept	2.02***	1.84***	1.63***	1.89***	1.98***
N./E. Europe	-0.03	0.02	-0.06	-0.01	0.00
S. Europe	-0.04*	0.04	0.03	-0.03	0.00
Africa	-0.10***	-0.04	0.06	-0.04	-0.04***
Others	-0.07	0.03	-0.14	-0.10*	-0.04
Foreigner	-0.08*	-0.11**	-0.04	-0.07***	-0.04***
Age	0.02***	0.03***	0.03***	0.03***	0.02***
Age squared*100	-0.02***	-0.03***	-0.03***	-0.02***	-0.02***
Female	-0.10***	-0.10***	-0.01	-0.10***	-0.12***
PhD	0.17***	0.21***	0.69***	0.15***	0.19***
Master's degree	0.13***	0.09***	-0.06	0.07***	0.06***
Bachelor	0.05***	0.08***	0.10***	0.05***	0.06***
Voc. Trainee	-0.09***	-0.07***	-0.03	-0.05***	-0.06***
Secondary educ.	-0.07***	-0.10***	-0.07	-0.05***	-0.04***
No graduation	-0.18***	-0.13***	-0.11***	-0.16***	-0.14***
Tenure*100	0.09***	0.08***	0.07***	0.04***	0.05***
# employees*100	-0.03	-0.07***	0.03	0.01	-0.01
Profession	0.32***	0.13**	-0.33***	0.28***	0.32***
Art and literacy	0.00	0.26***	0.00	0.10	0.22***
Executive	0.18***	0.17***	0.09	0.23***	0.26***
Engineer	0.16***	0.27**	0.36**	0.25***	0.20***
Clergy	-0.22	-0.22	-0.22	-0.22	-0.34**
Service intermediate profession	-0.13***	-0.16**	-0.07***	-0.07***	-0.06***
Technician	-0.20***	-0.10***	-0.04	-0.06***	-0.07***
White-collar	-0.27***	-0.20***	-0.21***	-0.25***	-0.23***
Qualified worker	-0.31***	-0.24***	-0.25***	-0.22***	-0.24***
Non-qualified worker	-0.28***	-0.24***	-0.23	-0.32***	-0.29***
Fixed term	-0.19***	-0.08***	-0.11***	-0.10***	-0.07***
Trainee	-0.19***	-0.13***	-0.12	-0.15***	-0.17***
Apprentice	-0.66***	-0.41***	-0.84**	-0.48***	-0.56***
Part time	0.03**	0.01	0.01	0.01	-0.03***
Grande couronne	-0.07***	-0.07***	-0.03	-0.11***	-0.09***
North	-0.05**	-0.04	-0.01	0.06***	-0.12***
East	-0.04*	-0.06**	0.00	-0.04	-0.06***
West	-0.13***	-0.08***	-0.01	-0.03***	-0.10***
South east	-0.05**	-0.06**	-0.04	-0.05***	-0.11***
Center	-0.03	-0.05	-0.05	0.03***	-0.09***
South west	-0.06***	-0.02	0.01	0.07***	-0.08***
<20000 inhab	0.01	-0.02	-0.02	-0.02*	-0.02***
>200000 inhab	0.00	0.03	-0.05**	0.00	0.00
Zus	-0.01	-0.09***	-0.04	-0.04**	-0.04***
Industry	0.07***	0.07***	0.07***	0.07***	0.07***
Electricity, gas, water	0.12***	0.12***	0.12***	0.12***	0.12***
Construction	0.06***	0.06***	0.06***	0.06***	0.06***
Trade, restauration	-0.02	-0.02	-0.02	-0.02	-0.02
Communication, transportation	0.04**	0.04**	0.04**	0.04**	0.04**
Finance, insurance, property, firms' service	0.06***	0.06***	0.06***	0.06***	0.06***
Community, social and particular service	0.01	0.01	0.01	0.01	0.01
Adjusted R^2			0.5338		

Note: (1) state, (2) local government, (3) public hospital, (4) public and national firm, (5) private firm. * Significant at 90%, ** Significant at 95% and *** Significant at 99%.
Source: INSEE, Paris.

Table 9. Public and private sector log wage-equation by origin

	Fr	NE Eur	Private S Eur	Afr	Foreigner
Intercept	2.08***	2.05***	1.97***	2.29***	2.21***
Age	0.02***	0.03***	0.04***	0.04***	0.02***
Age squared*100	-0.03***	-0.03***	-0.04***	-0.05***	-0.02***
Female	-0.08***	-0.07*	-0.11***	-0.07***	-0.03**
PhD	0.19***	0.29***	0.05	0.25***	0.07
Master's degree	0.16***	0.17***	0.03	0.15***	0.14***
Bachelor	0.07***	0.12**	0.05	0.07*	0.14***
Voc. Trainee	-0.07***	-0.08*	-0.11***	0.00	0.02
Secondary educ.	-0.08***	-0.06	-0.09**	-0.09**	-0.06
No graduation	-0.16***	-0.15***	-0.21***	-0.10***	-0.06*
Tenure*100	0.09***	0.08***	0.09***	0.11***	0.10***
# employees*100	-0.04**	-0.05	0.00	0.01	-0.05
Profession	0.31***	0.16**	0.32***	0.36***	0.17**
Art and literacy	0.12***	0.15	0.92***	0.49**	0.56***
Executive	0.16***	0.07	0.14**	0.16**	0.38***
Engineer	0.22***	0.21**	0.24***	0.12	0.39***
Clergy	-0.20	-0.20	-0.09	-0.20	-0.81
Tertiary intermediate profession	-0.12***	-0.11*	-0.12**	-0.17***	-0.07
Technician	-0.15***	-0.14	-0.18***	-0.27***	-0.16**
White-collar	-0.24***	-0.31***	-0.24***	-0.25***	-0.34***
Qualified worker	-0.29***	-0.25***	-0.29***	-0.35***	-0.32***
Non-qualified worker	-0.28***	-0.25***	-0.30***	-0.36***	-0.33***
Fixed term	-0.13***	-0.13*	-0.04	-0.16***	-0.08**
Trainee	-0.14***	-0.09	-0.21***	-0.13**	-0.13*
Apprentice	-0.53***	-0.48*	-0.26*	-0.23	-0.74***
Part time	0.00	-0.04	0.02	-0.02	-0.03
Grande couronne	-0.06***	-0.07	-0.09**	-0.09**	-0.02
North	-0.05***	-0.04	-0.07	-0.07	0.10**
East	-0.05***	-0.02	-0.06	-0.06	0.10***
West	-0.09***	-0.12*	-0.10*	-0.10*	-0.06
South east	-0.05***	0.09	-0.12***	-0.12***	-0.03
Center	-0.04***	0.04	-0.06	-0.06	0.03
South west	-0.04***	-0.02	-0.06*	-0.06	0.02
<20000 inhab	0.00	-0.04	0.00	-0.05	-0.01
>200000 inhab	0.00	-0.03	-0.02	-0.06**	-0.04
Zus	-0.04**	-0.03	-0.03	-0.06*	-0.04
Industry	-0.06	-0.27	-0.10	-0.44**	-0.09
Electricity, gas, watter	-0.05	-0.16	-0.10	-0.51**	-0.09
Construction	-0.05	-0.30	-0.07	-0.46	0.04
Trade, restauration	-0.09**	-0.18	-0.19	-0.55***	-0.04
Communication, transportation	-0.05*	-0.22	-0.15	-0.53***	-0.04
Finance, insurance, property, firms' service	-0.04*	-0.15	-0.08	-0.55***	-0.08
Community, social and particular service	-0.04	-0.16	-0.13	-0.51***	0.00
Adjusted R^2			0.5315		

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%.

Source: INSEE, Paris.

Table 10. Public and private sector log wage-equation by origin (continuation)

	Private				
	Fr	NE Eur	S Eur	Afr	Foreigner
Intercept	1.98***	1.90***	1.84***	2.20***	2.10***
Age	0.02***	0.03***	0.04***	0.04***	0.01*
Age squared*100	-0.02***	-0.03**	-0.04***	-0.05***	-0.01**
Female	-0.12***	-0.10***	-0.14***	-0.11***	-0.06***
PhD	0.19***	0.28***	0.04	0.24***	0.07
Master's degree	0.07***	0.08	-0.05	0.07	0.05
Bachelor	0.06***	0.10*	0.04	0.05	0.12***
Voc. Trainee	-0.06***	-0.07	-0.10***	0.01	0.02
Secondary educ.	-0.04***	-0.02	-0.05	-0.05	-0.03
No graduation	-0.15***	-0.14***	-0.19***	-0.09***	-0.04
Tenure*100	0.05***	0.04***	0.04***	0.06***	0.05***
# employees*100	-0.01	-0.01	0.03	0.04	-0.02
Profession	0.31***	0.16*	0.32***	0.35***	0.16*
Art and literacy	0.15***	0.18	0.95***	0.52**	0.59***
Executive	0.23***	0.14*	0.21***	0.22***	0.44***
Engineer	0.19***	0.18**	0.21***	0.09	0.36***
Clergy	-0.26	-0.26	-0.15	-0.26	-0.87***
Tertiary intermediate profession	-0.08***	-0.07	-0.08*	-0.13**	-0.03
Technician	-0.07***	-0.06	-0.11**	-0.19***	-0.09
White-collar	-0.23***	-0.31***	-0.24***	-0.25***	-0.34***
Qualified worker	-0.24***	-0.20***	-0.25***	-0.31***	-0.27***
Non-qualified worker	-0.30***	-0.27***	-0.32***	-0.38***	-0.36***
Fixed term	-0.08***	-0.07	0.01	-0.10***	-0.03
Trainee	-0.16***	-0.11	-0.23***	-0.15**	-0.15**
Apprentice	-0.55***	-0.50**	-0.29***	-0.25***	-0.76***
Part time	-0.01*	-0.06	0.00	-0.04	-0.05
Grande couronne	-0.10***	-0.11**	-0.13***	-0.09***	-0.05*
North	-0.12***	-0.11**	-0.14***	-0.18***	0.03
East	-0.07***	-0.04	-0.08**	-0.09**	0.08**
West	-0.12***	-0.15**	-0.12**	-0.13**	-0.08
South east	-0.11***	0.04	-0.18***	-0.16***	-0.09**
Center	-0.10***	-0.02	-0.11***	-0.13***	-0.03
South west	-0.10***	-0.07	-0.11***	-0.11***	-0.03
<20000 inhab	-0.02**	-0.06	-0.02	-0.07**	-0.03
>20000 inhab	0.01	-0.03	-0.02	-0.06**	-0.04
Zus	-0.04***	-0.03	-0.03	-0.06**	-0.05**
Industry	0.05***	-0.15	0.02	-0.33*	0.03
Electricity, gas, watter	0.22***	0.11	0.17	-0.24	0.17
Construction	0.36***	0.12	0.35**	-0.05	0.46***
Trade, restauration	0.18***	0.09	0.08	-0.28*	0.23***
Communication, transportation	0.22***	0.05	0.12	-0.26*	0.23***
Finance, insurance, property, firms' service	0.24***	0.13	0.21	-0.27*	0.20***
Community, social and particular service	0.14***	0.03	0.06	-0.32**	0.19
Adjusted R^2	0.5315				

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%.

Source: INSEE, Paris.

Table 11. Probability to work in the private sector

	A	B	C
<i>Origin</i>			
N./E. Europe	0.01	-0.02	0.09
S. Europe	0.03**	0.03**	0.11
Africa	0.03*	-0.01	0.06
Others	0.06	0.05	0.12
Foreigner	0.18***	0.12***	0.16
Age	-0.02***	-0.01***	-0.01***
Age squared*100	0.01***	0.01***	0.01***
Female	-0.11***	-0.06***	-0.06***
<i>Education</i>			
PhD	-0.04***	-0.03**	-0.03**
Master's degree	-0.22***	-0.09***	-0.09***
Bachelor	0.00	0.02**	0.02**
Voc. Trainee	0.08***	0.06***	0.06***
Secondary educ.	0.03***	-0.01	-0.01
No graduation	0.09***	0.08***	0.08***
<i>Living area</i>			
Grande couronne	-0.01	0.04***	0.04***
North	0.01	0.09*** *	0.09***
East	0.01	0.05***	0.05***
West	0.00	0.04***	0.04***
South east	-0.02**	0.04***	0.04***
Center	0.02**	0.08***	0.08***
South west	-0.05***	0.00	0.00
<i>City size</i>			
<20000 inhab	0.04***	0.07***	0.07***
>20000 inhab	0.04***	0.03***	0.03***
ZUS	-0.05***	-0.05***	-0.05***
<i>Father's occupation</i>			
Independent	0.02*	0.01	0.01
Executive, profession, professor	0.02*	0.01*	0.01*
White-collar	-0.01	-0.02	-0.02
Blue-collar	0.03***	0.03***	0.03***
Non-working	0.02	0.02	0.02
<i>Mother's occupation</i>			
Independent	0.06***	0.06***	0.06***
Executive, profession, professor	0.01	0.01	0.01
White-collar	0.03**	0.02**	0.02**
Blue-collar	0.04***	0.04***	0.04***
Non-working	0.05***	0.05***	0.05***
Wage differential		-1.19***	-1.19***
<i>Foreign parents</i>			
Mother			-0.17
Father			-0.14
Both			-0.16
Pseudo R^2	0.0793	0.1340	0.1346

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%.
Source: INSEE, Paris.

Table 12. Public and private sector wage-equations and sector selection function

	Public	Private	Selec. func.
Intercept	1.58***	1.94***	0.34*
N./E. Europe	-0.01	-0.01	-0.06
S. Europe	-0.02	-0.01	0.10*
Africa	-0.06***	-0.04***	0.02
Others	-0.07	-0.05	0.11
Foreigner	-0.13***	-0.04***	0.45***
Age	0.04***	0.02***	-0.05***
Age squared*100	-0.04***	-0.02***	0.07***
Female	-0.11***	-0.11***	0.27***
PhD	0.21***	0.18***	-0.02
Master's degree	0.19***	0.06***	-0.29***
Bachelor	0.07***	0.06***	0.10
Voc. Trainee	-0.09***	-0.06***	0.13***
Secondary educ.	-0.08***	-0.04***	0.07
No graduation	-0.17***	-0.14***	0.13***
Tenure*100	0.14***	0.04***	-0.34***
# employees*100	-0.02	-0.01	-0.20***
Profession	0.36***	0.29***	-1.08***
Art and literacy	0.07*	0.20***	0.34***
Executive	0.13***	0.24***	0.24***
Engineer	0.10**	0.21***	0.76***
Clergy	-0.35	-0.32**	0.96
Tertiary intermediate profession	-0.11***	-0.07***	0.04
Technician	-0.18***	-0.07***	0.27***
White-collar	-0.22***	-0.24***	-0.08**
Qualified worker	-0.30***	-0.24***	0.17***
Non-qualified worker	-0.33***	-0.31***	0.38***
Fixed term	-0.07***	-0.08***	-0.44***
Trainee	-0.08***	-0.17***	-0.41***
Apprentice	-0.60***	-0.53***	0.74***
Part time	-0.04***	-0.02**	0.20***
Zus	-0.03*	-0.04***	-0.10**
Father:			
Farmer, craftsman, storekeeper, entrepreneur			-0.01
Executive, profession, professor			0.01
White-collar			-0.02
Blue-collar			0.01
Non-working			0.06
Mother:			
Farmer, craftsman, storekeeper, entrepreneur			0.15***
Executive, profession, professor			-0.15*
White-collar			0.07
Blue-collar			-0.01
Non-working			0.06
σ_1		0.29***	
σ_2	0.35***		
ρ_1		0.10**	
ρ_2	-0.72***		

Note: * Significant at 90%, ** Significant at 95% and *** Significant at 99%. This estimation is controlled for living area, occupations, type of contract and economic sector. Source: INSEE, Paris.