Is There More Discrimination in the Public Sector Than in the Private Sector ?
The Case of Second Generation Migrants in France [*]

Clémence Berson [†]

Working paper

Abstract

Integration of migrants and their children is a burning issue in France. Governments prone integration by work but their policies do not really seem efficient as the riots of 2005 show. This paper studies discrimination against second generation migrants in the labor market. It focuses on differences between the public and private sector, which display dissimilar labor market characteristics. The French public sector is reputed to be fair and more egalitarian than the private sector. It has been verified for women but not for other minorities, as this article proves. The wage gap is estimated taking into account characteristics of individuals and selection issues as the probability to work and the probability to belong to a sector. This paper concludes that wage discrimination is clearly observable in the public sector whereas a very weak gap is detected in the private sector.

JEL Codes: J71, J15, C24, C35, J31, J45

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

1 Introduction

France is traditionally a country of immigration due to his colonial history. Children of immigrants acquired French nationality by birth but a real issue of integration in the population is clearly visible as events of November 2005 have shown. Riots in suburbs of large cities and particularly Paris, where many of immigrants and their children live, point up issues of integration in the French society. Since this period, governments tried to introduce politics that improve integration in school system and in the labor market. An administrative authority has been created to encourage equality between citizens and fight discrimination. Some evidence has been collected on discrimination against foreign origin workers in firms' hiring process (Duguet *et al.*, 2007).

Economically, 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 one appears in hiring procedure, the second concerns the level of responsibility in the firm and the last one is the wage gap between the referential population and the minority. The latter is easier to measure because of availability of census data bases and literature is rich in theory concerning wage differential. Econometric theory has been developed by Oaxaca (1973) and Blinder (1973), who introduce a wage decomposition where the gap which is not explained by differences in observable characteristics is considered as discrimination. This way of estimation is currently used in empirical literature as well as the introduction of dummies to evaluate the influence of belonging to a minority group on wage.

Concerning migrants of second generation, monographs have been done on wage discrimination. In France, this subject is essentially treated by sociologists due to the lack of census data. Indeed a law forbids to collect data concerning ethnic information. Only two years ago, INSEE, the French National Institute of Statistics, introduced questions about the nationality of parents in their interview. It is worth noticing two recent studies about this topic, Aeberhardt *et al.* (2007) and Aeberhardt & Pouget (2007), who study the wage gap of French workers with foreign origin. The former uses a new econometric method to conclude that one third of the wage gap between French workers with native origin and those with African origin is not explained by differences in observable covariates between the two groups. The second study concludes that an occupational segregation rather than wage discrimination can be observed.

Theoretically, Becker (1957) studied discrimination for the first time from an economic point of view and assumed that discrimination is due to a taste of individuals which leads to a higher minority-worker cost for 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 of other groups' average quality. Persistence of discrimination comes from self-realization by minorities. In the two cases, imperfect competition is necessary to perpetuate discrimination. Intuitively more competition, for instance in a particular sector of the economy, induces less discrimination for minorities. Some empirical studies like Black & Strahan (2001) and Hellerstein *et al.* (2002) point out a correlation in this way between competition and discrimination.

To improve this intuition, an empirical work can be realized on two sectors with different characteristics concerning competition. To this purpose, public and private sectors can be used. Choice of this two sectors results of the fact that most of the public sector is not competitive concerning wages and hiring practices. Moreover this sector does not maximize profit. So there is no competitive pressure in this sector. A rich literature regards the comparison between 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 belonging to 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 Netherlands, Van der Gaag & Vijverberg (1988) for Ivory Coast, Fougère & Pouget (2003b) for France and Heitmueller (2006) for Scotland). Conclusions are very dependant of countries' features.

Only three main papers deal with this subject in France: Fougère & Pouget (2003b), Bargain & Melly (2008) and Beffy & Kamionka (2003). Fougère & Pouget (2003b) aim to replicate characteristics of French public sector in their model by a tree of choices and try to identify main determinants of the entry into the public sector. Bargain & Melly (2008) use quantile regressions on a panel data set to measure wage gap. They find that after controlling for unobserved heterogeneity, only small pay differences between

sectors remain. Beffy & Kamionka (2003) use a job search model and their estimation takes into account selectivity and sector choice biases. Results are that it exists a large public sector pay premia for women and for low public wages whereas male civil servants would earn more in the private sector.

The papers, which focuse on comparison of minority discrimination between the public and private sectors, concern essentially gender issues. Ethnicity or race are subject to studies in the United Kingdom and the United States (see Gregory & Borland (1999) p.3616). The public sector is renowned for more equity on wages and hiring and 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. The large number of women in this sector seems confirm this assumption. Studying discrimination against another minority in the two sectors can highlight debates of the fairness of public sector. The aim of this paper is to compare discrimination in the public versus private sector against French people with foreign origin to enhance the theoretical intuition about discrimination.

This paper is organized as follows. Data are presented in section 2 and results of estimations take place in section 3. Section 4 take into account issues of selection introduced in 3. Finally, part 5 concludes this study.

2   The data

The data is 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 houses are interviewed, which represents roughly 70,000 individuals. The survey's ratio is 1/600, which means that a house of the sample represents around 600 houses of French territory. All persons of a house can be interviewed and have the same weight in the sample. Only 1/6 of the sample is new each quarter and each house is interviewed six times in order to have the possibility of measuring quarterly evolutions. This survey contains information about education level, occupations, wages, regions, industry, employment status, social background and sector of employment.

The origin of individuals appears only in the most recent version through parents' nationality. It explains that only the data of 2006 are used in this paper. Individuals are considered as second generation migrants when they possess French nationality and at least one parent has another nationality. Estimations are based on a sample composed of individuals whose age is

between 16 and 60 years and who are neither in education nor in retirement. The survey contains workers in both private and public sectors (this latter group includes people who are employed in the state administration, public hospital, and local administrations) and individuals unemployed. The self-employed workers are omitted because they have not clearly defined wages. Hourly wages are estimated in the following part and are calculated using weekly hours of a 'normal' week. As wage is only asked in the first and the last interview, data hold only one wage per person in the year 2006. However this information is self-reported and this subject to measurement errors, especially for professions with flexible working time like managers. It would not be an issue for the measurement of the wage gap between French with native origin and French with foreign origin as the measurement error should be the same in the two groups.

After reducing the sample, it contains 26,719 individuals and around 24% have foreign origin, as table 1 points out. Three main groups of foreign origin can be distinguished. The first one gathers French with Northern and Eastern European parents and represents 1.83% of the sample. This group is relatively homogeneous because most of them result from Diaspora of their initial country. Immigrant workers, who came mostly after the USSR fall, are almost not yet in this sample because their children are too young to be in it. Statistics on table 1 show that they are more educated and skilled than French with French origin but also older. Moreover they have less children. The second significant group comes from South Europe and counts for 4.28% in the sample. This wave of immigration came essentially in France between the two World Wars and a decade after the second one. The first generation was not very qualified and took jobs that French did not want to. However the second generation, now French, is always lower skilled and works more in private sector. Then people with African origin have to be distinguished. Indeed they come from the most recently wave of immigration in France and they account for 3.20% of the sample. Their parents arrived with decolonization or later from ex-colonies for the major part. African immigration in France is continuing and for one third of them French is their mother tong. This group is younger, has more children and live essentially in Paris and suburbs (more than 30%) and in large cities (more than 55%). They are working more in the private than in the public sector and they are more likely to be very highly or very lowly educated than the French average. This last phenomenon can be linked with the auto-realization of discrimination in the labor market by anticipations. People

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Table 1. Descriptive statistics by origin and sector

	France		N/E Europe		S Europe		Africa		Others	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
# observations	6263	16185	164	380	304	965	217	733	1195	3235
Hourly wage (Euro)	13.62	11.27	12.96	11.38	12.14	10.79	10.97	9.79	10.14	9.05
Age										
less than 25	5.05	10.09	1.22	4.74	3.95	6.94	7.83	11.73	6.03	12.27
25 to 45	52.80	56.29	36.59	40.79	48.36	57.82	62.67	14.73	49.12	50.97
45 to 65	42.15	33.62	62.20	54.47	47.70	35.23	29.49	24.56	49.12	36.75
Female	37.73	55.40	31.10	51.58	37.50	53.06	35.94	56.48	39.75	57.74
Education										
Univ. 3rd degree	6.83	5.89	11.59	7.37	4.61	3.63	11.06	5.87	6.03	5.10
Univ. 2nd degree	14.39	4.47	14.63	4.21	11.18	3.94	11.06	5.05	12.55	3.59
Univ. 1st degree	16.77	14.86	12.20	12.89	17.11	12.64	10.14	12.01	16.99	11.81
High school	18.71	17.45	22.56	16.84	17.76	16.58	19.35	17.87	17.07	16.38
Vocational training	22.05	31.58	16.46	33.42	24.34	34.09	16.59	20.74	22.34	30.26
Secondary education	8.56	8.10	6.71	6.84	4.93	8.81	11.06	8.19	7.95	8.38
No graduation	12.69	17.65	15.85	18.42	20.07	20.31	20.74	30.29	17.07	24.48
Tenure (month)	196	133	214	170	184	131	107	80	202	141
# employees (etablishment)	12.13	9.20	11.87	8.84	14.09	8.71	14.57	14.35	12.64	10.53
Professional occupation										
Manager	16.69	12.12	20.73	13.68	11.84	10.67	13.82	8.46	16.74	10.82
Intermediate	34.06	26.12	35.37	27.11	31.25	25.60	29.95	21.56	30.96	22.69
White-collar	41.53	28.95	39.63	28.16	48.03	32.23	50.69	33.70	43.68	29.21
Blue-collar	7.73	32.81	4.27	31.05	8.88	31.50	5.53	36.29	8.62	37.28
Type of contract										
Rolling contract	88.76	92.99	89.02	96.84	88.16	94.30	76.96	86.36	87.03	91.10
Fixed term contract	8.54	5.31	8.54	2.63	8.22	4.66	17.05	10.78	8.87	6.37
Others	2.70	1.70	2.44	0.53	3.62	1.24	5.99	2.86	4.10	2.53
Work duration										
Full time	81.53	84.61	80.49	86.58	82.89	83.94	79.26	84.58	80.92	84.95
Part time	18.47	15.38	19.51	13.42	17.11	16.06	20.74	15.42	19.08	15.05
Region										
Ile-de-France	12.79	11.42	15.85	15.26	16.12	15.34	31.34	30.56	20.08	16.85
The outer suburbs	21.97	22.90	23.17	20.00	15.13	14.09	22.12	15.14	18.16	19.41
North	8.33	9.86	11.59	16.58	4.61	4.87	2.76	6.41	9.79	9.00
East	9.28	10.29	15.24	20.53	9.54	13.99	7.37	9.82	7.78	10.39
West	13.80	14.88	6.10	5.79	4.93	3.42	5.99	4.77	10.04	12.27
South east	12.20	10.74	4.88	4.47	12.83	13.58	4.61	6.82	14.48	12.36
Centre	9.31	10.75	7.93	7.63	12.83	17.41	13.82	11.05	7.87	9.86
South west	12.33	9.15	15.24	9.74	24.01	17.31	11.98	15.42	11.80	9.86
Built-up area										
<20 000	22.32	26.99	14.63	17.63	17.43	16.06	4.61	4.37	18.66	26.86
20 000<200 000	43.06	40.64	48.78	42.11	41.78	43.73	39.63	34.65	40.00	39.41
>200 000	34.62	32.38	36.59	40.26	40.79	40.21	55.76	60.98	41.34	36.82
ZUS	5.44	4.71	6.10	7.63	5.59	6.01	21.20	25.10	7.87	7.70
Household										
Single	32.97	39.50	21.34	22.63	28.95	35.85	31.80	36.97	36.07	44.42
(Re)married	54.89	51.07	59.15	64.21	59.54	53.68	57.14	55.12	53.14	47.51
Widowed	1.42	1.14	3.66	2.89	1.32	1.24	1.38	0.82	1.34	1.39
Divorced	10.71	8.30	15.85	10.26	10.20	9.22	9.68	7.09	9.46	6.68
# children	0.06	0.06	0.04	0.03	0.06	0.06	0.10	0.11	0.04	0.05

Note: (1) Public (2) Private. All variables but log wage, tenure, number of employees and
number of children are percentages
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

know that intermediate qualification for them is less attractive than for other workers due to discrimination. They also under or over-invest in education to escape from this difference of treatment. Finally, a last group with all other nationalities is created, which represents about 15% of the whole sample. No conclusions about origins can be deduced from it.

The public sector gathers state, local government and public hospital employees and it represents 27% of working people. The private sector includes private firms, associations and public and national firms employees. National and publicly owned firms represent 25% of the private sector and has been added due to assumption of profit maximization management. The public sector is slightly over-represented as it represents 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. Then the sample seems to be representative as figures are 52%, 32% and 16% respectively. A description of the French public sector has done by Pouget (2005). He points out differences between these two sectors. As in this sample, he notices that skills structure varies across sectors. The public sector hires more managers, intermediate professions and white-collar than blue-collars workers, who are more employed in the private sector. Moreover, in the public sector, workers are often over-qualified for their job. This is partly due to the increase in unemployment in the eighties. Indeed civil servant have a life-job in France and, as observe Krueger (1988) and Fougère & Pouget (2003b) in the French case, the application rate for government jobs increases as the ratio of federal to private sector earnings increases or as the unemployment rate waxes. Consequently the average quality of applicants in the public sector raises with the number of applicants. An additional characteristic is that there are more women in the public sector than in the private sector. Indeed public sector jobs attract more women by its stability but they are often in part time jobs and less in higher level of occupation. Moreover, the data point out that workers of public sector are older than those of private sector. Several explanations should be done: first, government budget constraint currently leads state to hire fewer civil servants to reduce the number of workers in the public sector. As the state offers life jobs and then keeps workers whatever their age, number of older workers is larger. Second, as workers are better qualified in the public sector they arrive later in the labor market.

Concerning diversity of national origin of workers, individuals with South European or African origin are under-represented in the public sector. This

fact has been underlined by Pouget (2005). He distinguishes workers with one foreign parent and those with two foreign parents. The latter are more under-represented in the public sector and this is intensified for those with North African origin. There is a tendency for migrants' children to have a lower probability to find a job and to be employee of the public sector when they have the same age, the same qualification and an equivalent father's profession. These points have to be questions of interest in following parts.

3   The results

Empirical evidence of differences in treatment toward workers because of physical criterion is established through several methods. The more usual is to measure or evaluate the wage gap between the population which can be discriminate and the witness population. But there are hiring differences between the two groups and the probability to work in the private or public sectors are different. In a first part wage gap is evaluated, in a second part attention focuses on issues of selection.

3.1   Wage gap

In order to measure the wage gap due individuals' origin, a wage-equation is estimated. Explanatory variables comprise a dummy controlling for origin and a sector dummy. These two variables are interacted to obtain the effects of origin on wages in the public and private sectors. Thereby, it is possible to take into account separately the effects of origin in each sector and to compare coefficients.

Let w_i be the hourly wage. The log wage equation to be estimated is

$$ln(w_i) = X_i'\beta + u_i \tag{1}$$

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

Four estimations are done on the whole sample. In the first one, a dummy for both sector and foreign origin is introduced. In the second one, various origins of individuals are detailed. In the third one, the simple dummy of foreign origin is kept but sectors are detailed. Finally both sector and origin are brocken up. In each estimation, independent variables control for job

attributes such as qualification, working time (full-time versus part-time), employment contracts and economic sector (industry, trade, finance...). Concerning individual characteristics, age (quadratic function), education, gender and house localization (region, size of the city, area of educational priority (ZUS)) are added in the regression. Results of these estimations are in the appendix, column (1) of tables 16, 17, 18 and 19. Tables 2 and 3 sum up the main findings concerning the impact of origins and sectors ceteris paribus. Reference group is French people with native-born parents working in the public sector.

Table 2. The wage variations between different origins and sectors.

	Public	Private
Native origin	-	-0.07***
Foreign origin	-0.04***	-0.08***
Origin		
France	-	-0.07***
N/E Europe	-0.03	-0.07***
S Europe	-0.01	-0.08***
Africa	-0.08***	-0.10***
Others	-0.03***	-0.09***

First of all, it is worth noticing that a wage premium is observable in the public sector whatever the origin (table 2). Bargain & Melly (2008), Beffy & Kamionka (2003) and Fougère & Pouget (2003a) point out that in France a public premium is not generally present and depends on the characteristics of individuals such as their sex, education or occupation level. All these parameters are controlled for in the wage-equation and a pay-difference persists. The sample used in this inference contains a great number of blue-collars, which belong essentially to the private sector. It could downward bias the private wage. In addition, workers in the public sector have fringe benefits, in particular in retirement conditions.

When wage gaps in public and private sectors as a whole are compared in table 2, workers with native origin as well those with foreign origin in the private sector have a lower wage than workers of the public sector. It is worth noting that, in the public sector, having a foreign origin decreases wage by four points whereas it diminishes it by only one point in the private sector. Breaking down foreign origin shows that not all children of immigrants have

the same fall in their wage. In both sectors, African origin have a larger wage gap. But this fall is only by three points in the private sector while it is by eight points in the public sector. It confirms that there is an issue of integration for this group in the labor market. Concerning other origins, the wage gap is almost as large even if it is always inferior in the private sector than in the public sector: just one point for people with South European ascendant in both sectors and three points in the public sector against two in the private when one parents came from another country. People from North and East Europe are not subject to wage differentials in the private sector. Although three points differentiate them from native workers in the public sector. These results indicate that wage gap between French with foreign and native origin is larger in the public sector than in the private sector. But each sector can be divided in several fields. It is interesting to study which subsector induces larger pay-differences.

Table 3. The wage variations between different origins and detailed sectors.

	State	Local gov.	Pub. hosp.	Pub. firm	Priv. firm
Native origin	-	-0.10***	0.02*	-0.11***	-0.09***
Foreign origin	-0.06***	-0.11***	-0.02	-0.13***	-0.11***
Origin					
France	-	-0.10***	0.02*	-0.11***	-0.09***
N/E Europe	-0.03	-0.12**	-0.05	-0.11***	-0.10***
S Europe	-0.04	-0.07*	0.01	-0.14***	-0.10***
Africa	-0.11***	-0.14***	-0.02	-0.13***	-0.12***
Others	-0.12	-0.12***	-0.02	-0.10***	-0.12***

Table 3 reports the effects of origin by different subsectors. All coefficients are not significant because there are few observations per category, particularly when origins are broken down too. As in table 2, African-born parents decrease wages whatever the subsector. The differential is larger in the case of central government employees: seven percentage points pull apart African second generation from the second most hit group. Four percentage points separate them from French native workers in local government and public hospital jobs. The gap is weaker in the private sector with two percentage points in public or national firms and three points in private firms. However they are not always the most disadvantaged. In public hospitals, workers

with South European origin lose seven percentage points in comparison with native origin workers. But in the other categories, they are few disadvantaged. As in the precedent paragraph, Northern and Eastern European-born children are weakly disadvantaged in the private sector but more in all different fields of the public sector. To conclude, African origin has severe impacts on wages both in private and public sectors, particularly when they work for the state. This gap is observable also for descendants of other non-French origins but is weaker.

The sample is very heterogeneous and some subcategories of workers can be differently impacted by origin. Gender, age, occupation and education levels are individually assessed in this paragraph.

As most studies on the gender wage gap between private and public sectors show for the French case that a real difference is observable between them. Table 20 gives results from estimation with interacted variables to observe effects of origin and sector with gender. Women in the public sector are less discriminated on their wage than in the private one, even if sectors are detailed. But the gender gap seems to be the same for second generation migrants and natives: crossed variables representing sex and origin are really weak and insignificant. Women are treated in the same way whatever their origin.

Table 4. The wage variations between different origins and sectors by age brackets.

	< 25		25 − 35		35 − 55		> 55	
	Pub	Priv	Pub	Priv	Pub	Priv	Pub	Priv
Native origin	-	-0.04*	0.06***	0.00	0.16***	0.09***	0.19***	0.11***
Foreign origin	-0.04	-0.08**	0.04	0.00	0.12	0.08***	0.11**	0.05**
Origin								
France	-	-0.05**	0.06***	-0.01	0.15***	0.08***	0.18***	0.10***
N/E Europe	0.00	-0.03	0.02	0.02	0.13***	0.09***	0.11***	0.08**
S Europe	-0.02	-0.07	0.06*	0.00	0.15***	0.08***	0.15***	0.07**
Africa	-0.11***	-0.12***	0.03	0.01	0.07**	0.04	-0.03	-0.07
Others	-0.06***	-0.08***	-0.03	-0.05**	0.05*	0.02	0.09**	0.05

Concerning age differentiation, an evolution can be observed in both sectors. Table 4 summarizes the results of table 21. A first remark is that age

raises wages more in the public sector than in the private sector since a differential of nineteen percentage points between the youngest and oldest age brackets is observable in the public sector and only fifteen percentage points in the private sector. This may be due to the fact that in France you cannot be laid off in many jobs in the public sector and tenure is also greater in the public sector than in the private sector. Secondly, it is worth noting that the wage gap between native and foreign origins is larger in the public sector than in the private sector at every period of working life. In the private sector, it tends to disappear when the youngest and oldest workers are dropped but it is still large in these two extreme age brackets with a six percentage points gap. Concerning the public sector, the wage gap diminishes in the 25-35 bracket but then increases in the older age brackets and worth eight percentage points. Detailing by origin, European origin seems to be the less discriminated. In the middle age, they have some advantages but ever more in the private than in the public sector. Extreme age brackets have a larger wage gap for North and East of Europe as for South of Europe. The most disadvantaged are French with African origin at all ages. This is particularly strong for the youngest and the oldest. When sector fields are detailed too, results do not change: the same results are observed concerning field characteristics and the amplitude is similar to the first OLS estimation contingent on age and origin. The tables are not reported but can be found with the estimation results in the appendix.

Table 5. The wage variations between different origins and sectors by level of occupation.

	Manager		Interm. Prof.		White-collar		Blue-collar	
	Pub	Priv	Pub	Priv	Pub	Priv	Pub	Priv
Native origin	0.53***	0.41***	0.21***	0.12***	-	-0.05***	-0.06***	-0.06***
Foreign origin	0.50***	0.40***	0.12***	0.10***	-0.05***	-0.08***	-0.09***	-0.06***
Origin								
France	0.53***	0.41***	0.21***	0.12***	-	-0.05***	-0.06	-0.06***
N/E Europe	0.48***	0.38***	0.21***	0.15***	-0.06**	-0.09***	-0.09***	-0.06
S Europe	0.55***	0.42***	0.20***	0.11***	-0.01	-0.07***	-0.04	-0.05***
Africa	0.47***	0.40***	0.11***	0.07***	-0.07***	-0.07***	-0.15***	-0.09***
Others	0.47***	0.38***	0.07***	0.02	-0.07***	-0.08***	-0.14***	-0.10***

Last but not least, origin induces variations in the impact of occupation

on wage. Table 5 gives some results of estimations table 22. A pay-difference is clearly observable in support of public sector. This result can be amazing in manager level because the private sector offers more attractive wages. It can be explained by the fact that working hours are self-declared and most managers declared their real working time, which is much greater than the duration of labor contracts in the private sector.

As previously, a larger wage gap against foreign origin workers affects the public sector compared with the private sector. But it is more or less large according to the skill level. In the private sector, difference between native and foreign origins is consistently between zero and three percentage points. It is more volatile in the public sector. Intermediate professions are more susceptible of discrimination as their wage gap is of nine percentage points between the two origins. Then come white-collars and last managers and blue-collars. When origins are specified, workers with African ascendant are more penalized but it is less visible in high skills than in low skills, and especially in the public sector. It confirms the idea of the second part that intermediate professions are more discriminated and African origin workers try to invest more to reach manager occupation or less to avoid beeing disadvantaged. Workers with European origin are not very affected by wage differentials and their wage of native origin individuals. As for the age effects, details of sectors are not reported in this case because results are similar to those found in the previous estimations. The same differences are observable across fields and the interaction effects of occupation and origin only accentuate them. Thus occupation level plays a greater role in the public sector than in the private sector. Variations between skills are in favor of high levels and African origin workers are more affected by wage differential.

Table 6 sums up results of estimation of interactions between sector, origin and education in table 23. Education and occupation are often bound. Returne to education are not identical for all origins of workers. One more time, the private sector is less discriminatory than the public sector. The pay-difference fluctuates between one percentage point for low qualified workers and ten percentage points for high education level in the public sector. In the private sector, the wage gap stays between one to two percentage points. Only workers from the North of Europe have higher returns to education than native workers. Workers with African ascendant win the least in education. It explains the lack of investment in education in the group formed by African immigrants' kids.

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Table 6. Wage variations between different origins and sectors by level of education.

	High education		Interm. education		Low education	
	Public	Private	Public	Private	Public	Private
Native origin	0.17∗∗∗	0.05∗∗∗	-	-0.06∗∗∗	-0.10∗∗∗	-0.13∗∗∗
Foreign origin	0.07∗∗∗	0.04∗	-0.04∗∗∗	-0.08∗∗∗	-0.11∗∗∗	-0.15∗∗∗
Origin						
France	0.17∗∗∗	0.05∗∗∗	-	-0.06∗∗∗	-0.09∗∗∗	-0.13∗∗∗
Europe N/E	0.18∗∗∗	0.09∗	-0.06	-0.09∗∗∗	-0.13∗∗∗	-0.13∗∗∗
Europe S	0.14∗∗∗	0.03	0.00	-0.06∗∗∗	-0.11∗∗∗	-0.14∗∗∗
Africa	0.09∗∗∗	0.02	-0.07∗∗∗	-0.09∗∗∗	-0.17∗∗∗	-0.17∗∗∗
Others	0.07∗∗∗	-0.02	-0.06∗∗∗	-0.09∗∗∗	-0.20∗∗∗	-0.20∗∗∗

As a consequence, a wage gap is observable for all workers with foreign origin. African descendants are particularly hit by discrimination even controlling for heterogeneity by dividing the sample. Gender does not seem to have an impact on the wage gap but age accentuates it for the youngest and oldest workers. Concerning the level of skill, they are not affected in the same proportion. The upper skills are not very penalized comparing to intermediate professions. Returns to education are more important in the public than in the private sector and are less interesting for foreign origin. Results are robust and separating data per smaller groups keeps the same conclusions. But significance of coefficients disappears due to the small size of subsample.

However these estimations do not control for selection biases. People with different origins have probably not the same characteristics concerning work decision or choice of public or private sector.

3.2 Selection issues

Economic discrimination can be present upstream from earnings and particularly in the hiring process. Two main steps are necessary in this case as it has been mentioned in the precedent part. In one hand, individuals decide to participate in the labor market. This is the first possibility of discrimination. On the other hand, workers have to choose between public and private sectors. It could be the second mean of discrimination. Following parts take

an interest in describing these biases and simply evaluating them.

3.2.1   Working probability

First of all, individuals do not have the same preferences and reservation wage. Indeed the wage distribution is truncated by the participation decision and simple OLS do not take into account this bias. Individuals decide to participate in the labor market when their utility of participation is superior to earnings of non-participation. But utility cannot be observed and only labor market participation signals that utility reached the threshold at which it is more interesting to work, called reservation wage. Then we can observe wages. The following probit-equation permits to explain participation and controls for this selection bias:

$$P_i^* = Z_i'\gamma + \mu_i \tag{2}$$

where P^* is latent variable, Z the vector of characteristics, γ the coefficient to be estimated and μ the error term for participation.

Since neither latent variable is observable, an index-function is defined:

$$P_i = 1 \text{ if } P_i^* > 0$$
$$P_i = 0 \text{ if } P_i^* \leq 0$$

where $P_i = 1$ and $P_i = 0$ indicate labor market participation and non-participation respectively. The error term μ is assumed to be generated from a normal distribution with mean 0, variance σ_μ.

Table 7 describes the main results concerning probit estimations and deduced probabilities to participate in the labor market. French workers with foreign origin have a lower probability to enter in the market. Detailing by origin, the results are heterogeneous. Workers with South European origins have a similar chance to work in the labor market to French origin workers. Northern and Eastern European ascendant diminishes by eight percent the probability to work. The most disadvantaged people are of African and other origins. Probability to participate in the labor market falls by eighteen percent. Such observations lead to conclude that the most wage discriminated people have the weakest probability to participate in the labor market. A

Table 7. Average probabilities to work in the labor market.

	Whole sample	Male	Female
Native origin	-	-	-0.17***
Foreign origin	-0.08***	-0.08***	-0.26***
Origin			
France	-	-	-0.18***
Europe N/E	-0.08***	-0.12***	-0.24***
Europe S	0.00	0.01	-0.19***
Africa	-0.18***	-0.18***	-0.37***
Others	-0.18***	-0.22***	-0.32***

part of the discrimination comes from the lower participation in the labor market, which can be interpreted as a too high reservation wage, an anticipation of wage discrimination or as discrimination of employers. Considering education level of workers with African origin, the repartition is not as the others. There is more high skilled workers and more unskilled workers. This observation can confirm the theory of auto-realization of discrimination in the case of African origin individuals.

Observation by gender shows that women have a lower probability to enter the labor market. But it remains stable whatever the origin: women with foreign origin are not more discriminated than men of the same minority.

Table 8. Average probabilities to work in the labor market by age.

	<25	25-35	35-55	>55
Native origin	-	0.25***	0.33***	0.00
Foreign origin	-0.03	0.14***	0.21***	0.01
Origin				
France	-	0.23***	0.30***	-0.01
Europe N/E	0.13	0.09*	0.19***	0.00
Europe S	0.04	0.26***	0.28***	-0.01
Africa	-0.10***	0.03	0.07***	-0.08**
Others	-0.16***	0.04*	0.17***	-0.04

Table 8 permits to compare probabilities by age brackets. There is a tendency to have lower probability to work in extreme age brackets but coefficients are not really significant. African migrants' children are especially

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concerned with a probability smaller by eight to ten percentage points. Moreover this population have lower chances to participate in the labor market in middle age. Only South European origin does not lead to diminish this probability.

Table 9. Average probabilities to work in the labor market by education level.

	High education	Intermediate	Low education
Native origin	0,12***	-	-0,18***
Foreign origin	0,00	-0,09***	-0,2***
Origin			
France	0,11***	-	-0,17***
Europe N/E	-0,01	-0,08***	-0,22***
Europe S	0,11***	-0,01	-0,17***
Africa	-0,07***	-0,21***	-0,33***
Others	-0,13***	-0,17***	-0,35***

Table 9 gives results from the estimation of the probability of entrance in the labor market by education level. As one could expect, a higher education level raises the probability to participate in the labor market. South European origin seems to have no impact on the participation. But in general the gap between probabilities of natives and foreign origins workers increases with education. Once again African migrants' children are larger hit by the gap.

French workers do not have the same chance to participate in the labor market. Foreign origin sensibly decreases it, particularly for individuals with African origin. This result is consistent with discrimination in the labor market. Indeed workers with foreign origin have to be better to enter in the market. Nevertheless they are subjected to a wage gap.

3.2.2 Probability to work in a sector

As it can be observed, individuals enter in the labor market by different ways if they want to work in the private or public sector. On the one hand, there is free entry, with matching between employers and applicants. On the second hand, a majority is engaged by examinations and the other part by

the way of market. Consequently we cannot consider that there is a random assignment between the two sectors and another selection bias exists in the choice of the sector. A sector choice equation as equation 3 is introduced.

$$S_i^* = B_i'\delta + \nu_i \tag{3}$$

where S^* is latent variable, B the vector of characteristics, δ the coefficient to be estimated and ν the error term for participation. Once again the latent variable is not observable. An index-function is used:

$$S_i = 1 \text{ if } S_i^* > 0$$
$$S_i = 0 \text{ if } S_i^* \leq 0$$

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

Table 10. Average probabilities of working in the private sector.

	Whole sample	Male	Female
Native origin	-	-	-0.15***
Foreign origin	-0.04***	0.06***	-0.11***
Origin			
France	-	-	-0.15***
Europe N/E	0.01	0.04	-0.14***
Europe S	0.04***	0.04	-0.10***
Africa	0.04**	0.08***	-0.13***
Others	0.03**	0.06***	-0.13***

Concerning sector choice probabilities in table 10, having foreign origin raises probability to choose the private sector. There is a slightly difference between origin from North and East Europe and France in the probability to choose the private sector but it is not significant. The other origins all have a higher probability to enter the private sector than French with native origin. It is worth noting that discriminated populations choose the sector where the wage gap is smaller. Another interpretation is that there is more discrimination in the hiring process in the public than in the private sector.

Not surprisingly, women have a higher probability to work in the public sector rather than in the private sector. Workers with foreign origin tend to choose the private sector. This result is coherent with those of section 3.1: the wage gap of French with foreign origin is lower in the private sector.

Table 11. Average probabilities of working in the private sector by age.

	<25	25-35	35-55	>55
Native origin	-	-0.07***	-0.19***	-0.27***
Foreign origin	0.08	-0.05**	-0.14***	-0.22***
Origin				
France	-	-0.07***	-0.20***	-0.28***
Europe N/E	0.10	-0.10	-0.18***	-0.28***
Europe S	0.19*	-0.07**	-0.15***	-0.22***
Africa	-0.03	-0.05	-0.13***	-0.17***
Others	-0.01	-0.04	-0.15***	-0.15***

Table 11 summarizes results by age brackets. First it can be noted that older workers have a higher probability to work in the public sector. Indeed older people are more risk adverse and prefer a stable reputed job in the public sector. This is observed whatever the origin. But the gap between native and foreign origin workers' probability increases with age and African migrants' children have the highest probability to choose the private sector.

Table 12. Average probabilities of working in the private sector by education level.

	High education	Intermediate	Low education
Native origin	-0.14***	-	0.03***
Foreign origin	-0.10***	0.04***	0.08***
Origin			
France	-0.13***	-	0.03***
Europe N/E	-0.13***	0.02	0.04
Europe S	-0.12***	0.05**	0.09***
Africa	-0.07**	0.01	0.09***
Others	-0.08**	0.05**	0.07**

Table 12 studies the impact of education on the probability to choose one sector or another. Tendency is the more educated the worker, the higher the

probability to choose the private sector. The gap between children of natives and children of migrants is stable at around four percentage points. The latter have a four percent smaller chance to work in the public sector. By origin these probabilities also vary. Northern and Eastern European descendants are relatively similar to those of French origin. Southern European have the same probability to choose the public sector when they are highly skilled. But in the other cases, the probability diminishes by six points. Concerning African origin, the probability to enter the public sector is six percentage points lower except for intermediate education where the coefficient is not statistically significant.

To conclude, OLS estimation of wage equation is subject to selection bias, and the coefficient of the wage gap between workers with French and foreign origin is under-estimate by this method. Indeed studying the selection equation of participation in the labor market shows that children of migrants have lower probability to participate. Logically only the "best" workers can enter on the market. Despite it exists a wage gap due to foreign origin. A second selection bias comes from the choice of sector. As the wage gap is deeper in the public sector than in the private sector, migrants' children tend to choose with a higher probability the private sector. Breaking this down by the level of education shows that it does not depend especially to education. The public sector is less attractive for French with foreign origin but it does not influence the quality of workers in this sector.

Next section uses more elaborate methods to take into account these biases in the estimation of wage equation.

4 Taking into account the selection discrimination

In general, simple OLS wage-equation 1 is estimated but it may lead to inconsistent estimates for the two main reasons mentioned above. First, OLS estimates are prone to suffer from sample selection bias due to exclusion of non-participants in the labor force. This problem can be corrected by including an additional regressor which come from an equation of participation decision (Heckman, 1979). Second, given the participation decision, individuals have to decide in which sector to work. The non-random assignment to

public or private employment is neglected by the OLS estimates. To avoid this bias, choice equation is introduced.

4.1 Working probability

People self-select into employment and wage observation depends on an individual's labor supply decision. An equation of labor market participation as equation 2 is estimated as a first stage and inserted in the inference of wage-equation 1 by the inverse of the Mills ratio as explanatory variable. The inverse Mills ratio is a monotone decreasing function of the probability that an observation is selected into the sample conditionnal on observables characteristics of workers. As usual in most papers, number of children and marital status identify the equation. Indeed they are argued to not be directly correlated with wages and they contribute to explain labor market participation. Error terms u and μ are assumed independent of explanatory variables and with zero means. Variance of μ is normalized to 1. Estimations using the Heckman two steps method are provided in the appendix and results ceteris paribus follow in table 13 and 14.

Table 13. Wage variations between different origins and sectors with selection bias control.

	Public	Private
Native origin	-	-0.07***
Foreign origin	-0.02*	-0.06***
Origin		
France	-	-0.07***
Europe N/E	-0.01	-0.05***
Europe S	-0.01	-0.08***
Africa	-0.03	-0.05***
Others	-0.04*	-0.08***

In table 13, it is worth noticing that the wage gap decreases in comparison with OLS even if the differential between private and public sectors remains the same. A part of the precedent wage gap was really due to the selection in the labor market. Taking it into account changes particularly the situation of second generation migrants, who has a better wage. The marginal effect of origin on the probability to enter in the labor market is -0.20 for North

and East Europe descendant and -0.45 for other nationalities, which means that they have a respectively 8% and 18% lower chance of entering the labor market. Note that Southern European origin does not influence entrance in the labor market relative to the reference group. Consequently there are no changes in effects on wage in estimations for this group. However discrimination persists in the labor market and is stronger in the public sector. This confirms the OLS results. Correction of labor market selection bias in the private sector leads to a positive sign of foreign origin in the wage equation. That means that wage discrimination disappear when participation is taken into account. Discrimination seems to be more prevalent in the hiring process than via differential wages. This can be justified by the fact that the French labor market has to many offers for quantity of work demanded. It is also more easy to discriminate during the hiring process and to keep wages relatively similar, in accordance with the French law of equality of treatment in wages.

Table 14. Wage variations between different origins and detailed sectors with selection bias control.

	State	Local gov.	Pub. hosp.	Pub. firm	Priv. firm
Native origin	-	-0.09***	0.02*	-0.10***	-0.09***
Foreign origin	-0.04***	-0.09***	0.00	-0.11***	-0.09***
Origin					
France	-	-0.10***	0.02*	-0.11***	-0.09***
Europe N/E	-0.01	-0.10**	-0.03	-0.09***	-0.08***
Europe S	-0.03	-0.06	0.01	-0.13***	-0.12**
Africa	-0.07**	0.10***	0.02	-0.09***	-0.08***
Others	-0.06**	-0.09***	-0.01	-0.08***	-0.08***

Dividing sectors in subsectors is delicate. Indeed coefficients become less significant with the Heckman procedure and the coefficients of table 14 have to be interpreted carefully. Furthermore the wage gap is also lower in all fields and disappears for jobs in local government and in private firms when origins are not detailed. Brocken down by origins, the biggest gap is observed in state employment, where African origin leads a wage differential of seven percentage points in spite of selection control. Concerning other fields, the wage gap is weaker for all origins but persistent.

4.2 Sector

Theory suggests is that individuals want to work in the public sector when earnings in this sector are superior of those of the private sector or if they have a strong preference for public sector. Sector choice and wage are correlated and, as it was mentioned above, sector choice induces selection bias. This bias can be corrected by instrumenting the control variable of sector with a probit estimator by 2SLS with the inverse Mills ratio added to the regressors. Estimators with Heckman procedure stays consistent even if instrumental variables are added on a binary variable (Wooldridge, 2002). Difficulty lies in identification of coefficients and finding variables independent of wage but correlated with sector choice. About this topic, see Maddala (1986). In this case two possibilities are study.

First, Fougère & Pouget (2003a) study economic determinants to choose public sector. They note several criteria predominant among workers: this sector is predominantly female but in manager functions, workers are over-qualified comparing to level required and children of civil servants are over-represented in the public sector. This last information is important and suggests using it to identify sector choice as do different papers about the French case. However it is difficult to have precisely nature of father's and mother's job because only socio-professional groups are available and some headings do not permit to determine private or public characteristic of the socio-professional group. Four precise categories are created (see table 26 in appendix). The first one brings together all jobs which are surely in the public sector. The second one groups independent jobs. The third gathers declared firms employees. The last one contains all blue-collars, who have tendency to have children working in the private sector in our sample. The others cannot be said surely to belong to one group, like professors or intermediate professions in health.

An other possibility to identify choice equation is politic colour of regions. Indeed people have more or less confidence in the future among party represented in their region. And confidence influence directly the choice of sector. Public sector seems to be more stable and layoff less probable. That is why an index on party on power can identify the sector choice. A 'socialiste' (moderate left-wing) local or national government is supposed to be more generous in social subsidies and people feels private sector less risked and more insure against layoffs than in case of a right-wing one, which is assumed more liberal. To build this index, regional results of elections are

used. Four categories are created. The first one brings regions where electors voted for the moderate left-wing at the second ballot of last presidential elections and general election and where the regional president belongs to this group together. In the second group, one of these ballots was for the moderate right-wing. The third one contains regions where two of these polls favoured moderate right-wing and the last one brings regions where none of these ballots were in favour of moderate left-wing candidates.

These two instrumental variables are used in our equation of sector choice.

The first step is to estimate the participation-equation 2 and the sector choice-equation 3. Then Mills ratio and estimation of sector choice are inserted in the wage-equation 1. Error terms u and μ are assumed to be generated from a bivariate normal distribution with mean 0, variance σ_μ and normalized to 1 respectively, and covariance $\rho\sigma_\mu$. Error term of sector selection equation is normally distributed with mean 0 and variance σ_ν.

Table 15. Wage variations between different origins and detailed sectors with selection bias control.

	Public	Private
Native origin	-	-0.07
Foreign origin	-0.02	-0.06
Origin		
France	-	-0.07
Europe N/E	-0.03	-0.07
Europe S	-0.02	-0.08
Africa	-0.04	-0.06
Others	-0.04	-0.07

Table 15 sums up results of this estimation. Sector is not detailed as multiprobit does not converge. This inference shows that discrimination almost disappears when issues of selection is taken into account. It is particularly true in the private sector, where wage gap is zero or one for all origins but South European with one point less. In the public sector, wage gap persists even if it is smoothed over. Workers with African ascendant keep the bigger wage gap with four points. Comparing with results without sector choice correction, wage gap increased in public sector and it decreased in the private

sector. This phenomenon is due to the control of sector selection bias. Indeed it means that selection in the public sector is less subject to discrimination thanks to the system of examinations but wage gap is deeper. As it has been explain in the last section, the private sector is inclined to discriminate in the hiring process but treats workers of any origin equally.

5 Conclusion

Using the French Labor Force Survey, this paper provides an empirical evaluation of the discrimination on second generation migrants. It is found that this minority receives a lower wage than workers with parents of French origin. African origin is particularly strongly impacted by this phenomenon. Controlling for selection biases diminishes the wage gap but shows a larger discrimination in the hiring process. Distinguishing public and private sector points out that the private is less subject to discriminate on wages. Contrary to the reputation of fairness in the public sector, second generation migrants are more discriminated both by wages and by selection at entrance to this sector.

References

Aeberhardt, R., & Pouget, J. 2007. *National Origin Wage Differentials in France: Evidence from Matched Employer-Employee Data*. IZA working paper.

Aeberhardt, R., Fougère, D., Pouget, J., & Rathelot, R. 2007. *Wages and Employment of French Workers with African Origin*. IZA working paper.

Aigner, D.J., & Cain, G.G. 1977. Statistical Theories of Discrimination in Labor Markets. *Industrial and Labor Relation Review*, **30**, 175–187.

Akerlof, G.A. 1985. Discriminatory, Status-based Wages among Tradition-oriented, Stochastically Trading Coconut Producers. *The Journal of Political Economy*, **93**, 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 discission paper.

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 working paper.

Black, S.E., & Strahan, P.E. 2001. The Division of Spoils: Rent-Sharing and Discrimination in a Regulated Industry. *American Economic Review*, **91**, 814–831.

Blinder, A. 1973. Wage Discrimination: Reduced Form and Structural Estimates. *Journal of Human Ressources*, **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 working paper.

Gregory, R.G., & Borland, J. 1999. Recent Developments in Public Sector Labor Markets. *Pages 3573–3630 of:* B.V., Elsvier Science (ed), *Handbook of Labor Economics*, vol. 3. O. Ashenfelter and D. Card.

Hartog, J., & Oosterbeek, H. 1993. Public and Private Sector Wages in the Netherlands. *European Economic Review*, **37**, 97–114.

Heckman, J. 1979. Sample Selection Bias as a Specification Error. *Econometrica*, **47**, 153–162.

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 Ressources*, **37**, 353–380.

Krueger, A. 1988. The determinants of Queues for Federal Jobs. *Industrial and Labor Relations Review*, **41**, 567–581.

Maddala, G.S. 1986. Disequilibrium, self-selection, and Switching Models. *Chap. 28, pages 1633–1688 of: Handbook of Econometrics*, vol. III. Z. Griliches and M.D. Intriligator.

Oaxaca, R. 1973. Male-Female Wage Differentials in Urban Labor Markets. *International Economic Review*, **14**, 693–709.

Phelps, E. 1972. The Statistical Theory of Racism and Sexism. *American Economic Review*, **62**, 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.

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**, 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**, 215–223.

Wooldridge, J.M. 2002. *Econometric Analysis of Cross Section and Panel Data*. MIT Press.

Table 16. Dependant variable: log of hourly wage.

	(1)	(2)		(3)		
	Wage	Wage	Select.	Wage	Select.	Instr.
observations	26719	26719	43493	26719	43493	26719
Private	-0.07***	-0.07***		-0.07***		
Foreign origin	-0.04***	-0.02*	-0.21***	-0.02*	-0.20***	0.11***
Priv*foreign origin	0.03**	0.03**		0.02*		
Age	0.02***	0.02***	-0.001	0.02***	-0.001	-0.02***
Age squared*100	-0.02***	-0.02***		-0.02***		
Female	-0.10***	-0.05***	-0.42***	-0.05***	-0.43***	-0.38***
Education						
Univ. 3rd deg.	0.18***	0.17***	0.11***	0.16***	0.11***	-0.09**
Univ. 2nd deg.	0.14***	0.11***	0.23***	0.11***	0.24***	-0.63***
Univ. 1st deg.	0.07***	0.05***	0.27***	0.05***	0.27***	-0.03
Voc. Trainee	-0.06***	-0.05***	-0.11***	-0.05***	-0.12***	0.27***
Secondary educ.	-0.05***	-0.02***	-0.29***	-0.02***	-0.29***	0.11***
No graduation	-0.16***	-0.09***	-0.61***	-0.09***	-0.62***	0.32***
Tenure*100	0.06***	0.06***		0.06***		
# employees*100	-0.02***	-0.02***		-0.02**		
Skill						
Manager	0.49***	0.49***		0.49***		
Intermediate prof.	0.19***	0.18***		0.18***		
Blue-collar	-0.01	-0.01		-0.01		
Marital status						
(Re-)Married			0.24***		0.23***	
Widowed			-0.04		-0.04	
Divorced			0.24***		0.24***	
# children			-0.17***		-0.17***	
Residual standard error				0.59**		
Socio-professional group						
Father						
Retailer, artisan, farmer, ceo						0.05
Private job						-0.01
Worker						0.07*
Others						-0.03
Mother						
Retailer, artisan, farmer, ceo						0.19
Private job						0.04
Worker						0.13
Others						0.11
Local politic view						
Majority of l-wing moderate						0.02
Majority of r-wing moderate						0.13***
Large majority of r-wing mod.						0.24***
Intercept	1.84***	1.96***	0.67***	1.94***	0.67***	1.28***
λ		-0.20		-0.20		
ρ		-0.59		-0.58		
σ		0.34		0.34		
Adjusted R^2	0.4746					

Note: This estimation is controlled for working time, type of contract, regional localization, ZUS, size of city and economical sectors. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

Table 17. Dependant variable: log of hourly wage. Detailed by origin.

	(1)	(2)		(3)		
	Wage	Wage	Select.	Wage	Select.	Instr.
observations	26719	26719	43493	26719	43493	26719
Private	-0.07***	-0.07***		-0.07***		
Origin						
N/E Europe	-0.03	-0.01	-0.21***	-0.03	-0.20***	0.04
S Europe	-0.01	-0.01	0.003	-0.02	0.01	0.11***
Africa	-0.08***	-0.03	-0.45***	-0.03	-0.44***	0.11**
Others	-0.03***	-0.04**	-0.45***	-0.04**	-0.45***	0.10***
Priv*N/E Europe	0.03	0.03		0.02		
Priv*S Europe	0.00	0.00		0.00		
Priv*Africa	0.05**	0.05**		0.04		
Priv*Others	0.01	0.04**		0.04**		
Age	0.02***	0.02***	0.002***	0.02***	0.002***	-0.02***
Age squared*100	-0.02***	-0.02		-0.02***		
Female	-0.10***	-0.05***	-0.44***	-0.05***	-0.44***	-0.37***
Education						
Univ. 3rd deg.	0.18***	0.17***	0.10***	0.16***	0.09***	-0.09**
Univ. 2nd deg.	0.13***	0.11***	0.22***	0.11***	0.23***	-0.62***
Univ. 1st deg.	0.07***	0.05***	0.25***	0.05***	0.25***	-0.02
Voc. Trainee	-0.06***	-0.05***	-0.11***	-0.05***	-0.12***	0.26***
Secondary educ.	-0.05***	-0.02**	-0.27***	-0.02**	-0.28***	0.11***
No graduation	-0.15***	-0.09***	-0.59***	-0.09***	-0.59***	0.31***
Tenure*100	0.06***	0.06***		0.06***		
# employees*100	-0.03***	-0.02***		-0.02***		
Skill						
Manager	0.49***	0.49***		0.49***		
Intermediate prof.	0.19***	0.18***		0.18***		
Blue-collar	-0.01	-0.01		-0.01		
Marital status						
(Re-)Married			0.21***		0.21***	
Widowed			-0.06		-0.07	
Divorced			0.22***		0.22***	
# children			-0.19***		-0.19***	
Residual standard error				0.57**		
Socio-professional group						
Father						
Retailer, artisan, farmer, ceo						0.05
Private job						-0.01
Worker						0.07*
Others						-0.03
Mother						
Retailer, artisan, farmer, ceo						0.19
Private job						0.03
Worker						0.13
Others						0.11
Local politic view						
Majority of l-wing moderate						0.02
Majority of r-wing moderate						0.12***
Large majority of r-wing mod.						0.24***
Intercept	1.84***	1.96***	0.83***	1.94***	0.82***	1.27***
λ		-0.19***		-0.19***		
ρ		-0.57		-0.56		
σ		0.34		0.34		
Adjusted R^2	0.4759					

Note: This estimation is controlled for working time, type of contract, regional localization, ZUS, size of city and economical sectors. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

Table 18. Dependant variable: log of hourly wage. Detailed by sector.

	(1)	(2)	
	Wage	Wage	Selection
observations	26719	26719	43493
Sector			
Local government	-0.09***	-0.09***	
Public hospital	0.02**	0.02**	
Public or national firm	-0.10***	-0.10***	
Private firm, association	-0.09***	-0.09***	
Foreign origin	-0.06***	-0.04**	-0.21***
Local gov*foreign	0.04	0.04***	
Pub hospital*foreign	0.02	0.02	
Pub firm*foreign	0.03	0.03	
Priv firm*foreign	0.04**	0.04**	
Age	0.02***	0.02***	0.00
Age squared*100	-0.02***	-0.02***	
Female	-0.10***	-0.06***	-0.42***
Education			
Univ. 3rd deg.	0.18***	0.17***	0.11***
Univ. 2nd deg.	0.13***	0.11***	0.23***
Univ. 1st deg.	0.07***	0.05***	0.27***
Voc. Trainee	-0.06***	-0.05***	-0.11***
Secondary educ.	-0.05***	-0.02*	-0.29***
No graduation	-0.15***	-0.08***	-0.61***
Tenure*100	0.06***	0.06***	
# employees*100	-0.02***	-0.02***	
Skill			
Manager	0.48***	0.48***	
Intermediate prof.	0.18***	0.18***	
Blue-collar	-0.01	-0.01	
Marital status			
(Re-)Married			0.24***
Widowed			-0.04
Divorced			0.24***
# children			-0.17***
Intercept	1.86***	1.98***	0.67***
λ		-0.20***	
ρ		-0.57	
σ		0.34	
Adjusted R^2	0.4776		

Note: This estimation is controlled for working time, type of contract, regional localization, ZUS, size of city and economical sectors. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

Table 19. Dependant variable: log of hourly wage. Detailed by sector and origin.

	(1) Wage	(2) Wage	Selection
observations	26719	26719	43493
Sector			
Local government	-0.10***	-0.10***	
Public hospital	0.02**	0.02***	
Public or national firm	-0.11***	-0.11*	
Private firm, association	-0.09***	-0.09***	
Origin			
N/E Europe	-0.03	-0.01	-0.21***
S Europe	-0.04	-0.03	0.00
Africa	-0.11***	-0.07**	-0.45***
Others	-0.01	-0.06**	-0.45***
Local gov*N/E Europe	0.01	0.01	
Pub hospital*N/E Europe	-0.04	-0.04	
Pub firm*N/E Europe	0.03	0.03	
Priv firm*N/E Europe	0.02	0.02	
Local gov*S Europe	0.07*	0.07*	
Pub hospital*S Europe	0.03	0.02	
Pub firm*S Europe	0.01	0.01	
Priv firm*S Europe	0.03	0.03	
Local gov*Africa	0.07	0.07	
Pub hospital*Africa	0.07	0.07	
Pub firm*Africa	0.09**	0.09**	
Priv firm*Africa	0.08**	0.08**	
Local gov*Others	-0.01	0.07*	
Pub hospital*Others	-0.03	0.03	
Pub firm*Others	0.02	0.06**	
Priv firm*Others	-0.02	0.07**	
Age	0.02***	0.02***	0.00***
Age squared*100	- 0.02***	-0.02***	
Female	-0.10***	-0.06***	-0.44***
Education			
Univ. 3rd deg.	0.17***	0.17***	0.10***
Univ. 2nd deg.	0.13***	0.11***	0.22***
Univ. 1st deg.	0.07***	0.05***	0.25***
Voc. Trainee	-0.06***	-0.05***	-0.11***
Secondary educ.	-0.05***	-0.02**	-0.27***
No graduation	-0.15***	-0.09***	-0.59***
Tenure*100	0.06***	0.06***	
# employees*100	-0.03***	-0.02***	
Skill			
Manager	0.49***	0.48***	
Intermediate prof.	0.18***	0.18***	
Blue-collar	-0.01	-0.01	
Marital status			
(Re-)Married			0.21
Widowed			-0.06
Divorced			0.22
# children			-0.19
Intercept	1.87***	1.98***	0.83***
λ		-0.19***	
ρ		-0.55	
σ		0.34	
Adjusted R^2	0.4790		

Note: This estimation is controlled for working time, type of contract, regional localization, ZUS, size of city and economical sectors. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

Table 20. Dependant variable: log of hourly wage. Effects of gender.

Origin				
Foreign origin	-0.04***		-0.05***	
N/E Europe		-0.04		-0.04
S Europe		0.00		-0.03
Africa		-0.08***		-0.11***
Others		-0.09***		-0.12***
Sector				
Private	-0.03***	-0.03***		
Local government			-0.10***	-0.10***
Public hospital			-0.01	-0.01
Pub or nat firms			-0.07***	-0.07***
Private firm, association			-0.06***	-0.06***
Female	-0.05***	-0.06***	-0.07***	-0.07***
Private*female	-0.06***	-0.06***		
Local gov*female			0.01	0.01
Pub hospital*female			0.04	0.04
Pub firm*female			-0.05***	-0.05***
Priv firm*female			-0.05***	-0.05***
Female*origin	-0.006		-0.01	
Female*N/E Europe		0.00		0.00
Female*S Europe		-0.01		-0.02
Female*Africa		0.00		0.00
Female*others		0.00		0.00
Adjusted R^2	0.4754	0.4762	0.4783	0.4790

Note: This estimation is controlled for workers and job characteristics. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.

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

Table 21. Dependant variable: log of hourly wage. Effects of age.

Origin				
Foreign origin	-0.07**		-0.08***	
N/E Europe		0.005		0.003
S Europe		-0.03		-0.06
Africa		-0.11**		-0.14***
Others		-0.06*		-0.08**
Private	-0.04**	-0.05**		
Sector				
Local government			-0.002	-0.01
Public hospital			0.10**	0.10*
Pub or nat firms			-0.05	-0.05*
Private firm. association			-0.02	-0.03
Age				
$25 \leq$ age < 35	0.06***	0.06***	0.11***	0.10***
$35 \leq$ age < 55	0.16***	0.15***	0.20***	0.19***
Age ≤ 55	0.19***	0.18***	0.28***	0.27***
Private*25-35	-0.02	-0.01		
Private*35-55	-0.02	-0.02		
Private*55	-0.04	-0.03		
Local gov*25-35			-0.08*	-0.08*
Local gov*35-55			-0.08*	-0.07
Local gov*55			-0.18***	-0.17***
Pub hospital*25-35			-0.09	-0.08
Pub hospital*35-55			-0.06	-0.06
Pub hospital*55			-0.15***	-0.15**
Pub firm*25-35			-0.05	-0.04
Pub firm*35-55			-0.05	-0.04
Pub firm*55			-0.12***	-0.11***
Priv firm*25-35			-0.06**	-0.06*
Priv firm*35-55			-0.07**	-0.06**
Priv firm*55			-0.12***	-0.11***
Foreign*25-35	0.05*		0.05*	
Foreign*35-55	0.03		0.03	
Foreign*55	-0.01		-0.01	
N/E Europe*25-35		-0.04		-0.05
N/E Europe*35-55		-0.02		-0.02
N/E Europe*55		-0.08		-0.08
S Europe*25-35		0.03		0.03
S Europe*35-55		0.02		0.03
S Europe*55		-0.01		0.00
Africa*25-35		0.08*		0.08**
Africa*35-55		0.02		0.02
Africa*55		-0.10*		-0.10*
Others*25-35		-0.02		-0.02
Others*35-55		-0.04		-0.04*
Others*55		-0.03		-0.02
Adjusted R^2	0.4737	0.4749	0.4770	0.4781

Note: This estimation is controlled for workers and job characteristics. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.

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

Table 22. Dependant variable: log of hourly wage. Effects of occupation.

Origin				
Foreign origin	-0.05***		-0.07***	
N/E Europe		-0.06**		-0.06*
S Europe		-0.01		-0.04
Africa		-0.07***		-0.11***
Others		-0.07***		-0.09***
Sector				
Private	-0.05***	-0.05***		
Local government			-0.04***	-0.05***
Public hospital			0.06***	0.06***
Pub or nat firms			-0.07***	-0.07***
Private firm. association			-0.05***	-0.05***
Skill				
Manager	0.53***	0.53***	0.57***	0.57***
Intermediate profession	0.21***	0.21***	0.23***	0.23***
Blue collar	-0.06***	-0.06***	-0.05**	-0.05**
Private*manager	-0.07***	-0.07***		
Private*Interm	-0.04***	-0.04***		
Private*blue	0.05***	0.05***		
Local gov*manager			0.02***	0.01***
Pub hospital*manager			0.01***	0.03***
Pub firm*manager			0.03***	0.01***
Priv firm*manager			-0.16***	0.01***
Local gov*interm			-0.13***	0.07***
Pub hospital*interm			-0.12**	0.01**
Pub firm*interm			-0.11***	-0.02***
Priv firm*interm			-0.06***	-0.07***
Local gov*blue			-0.05	0.04
Pub hospital*blue			-0.05	0.03
Pub firm*blue			-0.06	-0.01*
Priv firm*blue			0.00	-0.01
Manager*origin	0.02		-0.06	
Interm*origin	0.01		0.04	
Blue*origin	0.03*		0.03*	
Manager*N/E Europe		0.01		-0.16
Manager*S Europe		0.03		-0.13
Manager*Africa		0.01		-0.12
Manager*others		0.00		-0.11
Interm*N/E Europe		0.06		-0.06*
Interm*S Europe		0.00		-0.05
Interm*Africa		-0.03		-0.05
Interm*others		-0.07***		-0.06***
Blue*N/E Europe		0.04		0.03
Blue*S Europe		0.03		-0.06
Blue*Africa		-0.01		0.05
Blue*others		-0.01		0.03
Adjusted R^2	0.4757	0.4767	0.4789	0.4797

Note: This estimation is controlled for workers and job characteristics. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.

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

Table 23. Dependant variable: log of hourly wage. Effects of education.

Origin				
Foreign origin	-0.04***		-0.06***	
N/E Europe		-0.06**		-0.06*
S Europe		0.00		-0.03
Africa		-0.07***		-0.10***
Others		-0.06***		-0.09***
Sector				
Private	-0.06***	-0.06***		
Local government			-0.08***	-0.08***
Public hospital			0.03**	0.03**
Pub or nat firms			-0.08***	-0.08***
Private firm. association			-0.08****	-0.08***
Education				
High educ.	0.17***	0.17***	0.18***	0.18***
Low educ.	-0.10***	-0.09***	-0.09***	-0.09***
Private*High educ.	-0.06***	-0.06***		
Private*Low educ.	0.03**	0.03**		
Local gov*High educ.			-0.06***	-0.06***
Local gov*Low educ.			0.00	0.00
Pub hospital*High educ.			-0.07***	-0.07***
Pub hospital*Low educ.			0.02	0.02
Pub firm*High educ.			-0.09***	-0.09***
Pub firm*Low educ.			0.01	0.01
Priv firm*High educ.			-0.07***	-0.07***
Priv firm*Low educ.			0.02	0.02
Foreign*High educ.	0.00		0.01	
Foreign*Low educ.	-0.01		-0.01	
N/E Europe*High educ.		0.07***		0.07**
N/E Europe*Low educ.		0.03		0.02
S Europe*High educ.		-0.02		-0.02
S Europe*Low educ.		-0.02		-0.02
Africa*High educ.		0.00		0.00
Africa*Low educ.		-0.01		-0.01
Others*High educ.		-0.04*		-0.04
Others*Low educ.		-0.05**		-0.05**
Adjusted R^2	0.4683	0.4693	0.4714	0.4723

Note: This estimation is controlled for workers and job characteristics. * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

Table 24. Labor market participation: marginal probabilities

Origin		
Foreign origin	-0.08***	
N/E Europe		-0.08***
S Europe		0.001
Africa		-0.18***
Others		-0.18***
Age*100	-0.02*	-0.09***
Female	-0.16***	-0.16***
Education		
Univ. 3rd deg.	0.04***	0.04***
Univ. 2nd deg.	0.08***	0.08***
Univ. 1st deg.	0.10***	0.09***
Voc. Trainee	-0.04***	-0.04***
Secondary educ.	-0.11***	-0.11***
No graduation	-0.24***	-0.23***
Region		
The outer suburbs	0.004	-0.01
North	-0.07***	-0.09***
East	0.01	0.00
West	-0.02*	-0.03***
South east	-0.01	-0.02**
Center	-0.01	-0.02**
South west	-0.07***	-0.08***
City		
Rural town	0.003	0.003
>200 00 inhab.	0.04***	0.03***
ZUS	-0.08***	-0.07***
Marital status		
(Re-)Married	0.09***	0.08***
Widowed	-0.02	-0.02
Divorced	0.09***	0.08***
# children	-0.06***	-0.07***
Pseudo R^2	0.0714	0.0789

Note: * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

Table 25. Sector entrance: marginal probabilities

Origin		
Foreign origin	0.04***	
N/E Europe		0.01
S Europe		0.03***
Africa		0.03**
Others		0.03***
Age	-0.01***	-0.01***
Female	-0.12***	-0.12***
Education		
Univ. 3rd deg.	-0.03**	-0.03**
Univ. 2nd deg.	-0.23***	-0.23***
Univ. 1st deg.	-0.01	-0.01
Voc. Trainee	0.08***	0.08***
Secondary educ.	0.04***	0.03***
No graduation	0.10***	0.09***
Region		
The outer suburbs	-0.004	-0.004
North	0.05***	0.05***
East	0.01	0.01
West	0.03**	0.03**
South east	0.02	0.02
Center	0.04***	0.04***
South west	-0.03***	-0.03***
City		
Rural town	-0.03***	-0.03***
>200 00 inhab.	0.003	0.003
ZUS	-0.05***	-0.05***
Socio-professional group		
Father		
Retailer, artisan, farmer, chief of firms	0.02	0.02
Private job	-0.002	-0.003
Worker	0.02*	0.02*
Others	-0.01	-0.01
Mother		
Retailer, artisan, farmer, chief of firms	0.06	0.06
Private job	0.01	0.01
Worker	0.04	0.04
Others	0.04	0.04
Local politic view		
Left wing moderate majority	0.01	0.01
Right wing moderate majority	0.04***	0.04***
Right wing moderate large majority	0.07***	0.07***
Pseudo R^2	0.0673	0.0673

Note: * means significant at the 90% level, ** means significant at the 95% level and *** means significant at the 99% level.
Source: Enquête Emploi en Continu survey, INSEE, Paris, 2006.

Table 26. Socio-professional categories in France

1	10	Agriculteurs
1	21	Artisans
1	22	Commerçants et assimilés
1	23	Chefs d'entreprise de plus de 10 salariés
2	31	Professions libérales
0	33	Cadres de la fonction publique
4	34	Professeurs, professions scientifiques
4	35	Professions informatiques, arts et spectacles
2	37	Cadres administratifs et commerciaux d'entreprise
4	38	Professeurs des écoles, instituteurs et assimilés
4	42	Professions intermédiaires de la santé et du travail social
4	43	Clergé, religieux
0	44	Professions intermédiaires administratives de la fonction publique
2	45	Professions intermediaires administratives et commerciales des entreprises
4	46	Techniciens
4	47	Contremaitres, agents de maîtrise
0	48	Employés civils et agents de service dans la fonction publique
4	52	Agent de surveillance
2	53	Employés administratifs d'entreprise
4	54	Employés de commerce
4	56	Personnels des services directs aux particuliers
3	62	Ouvriers qualifiés de type industriel
3	63	Ouvriers qualifiés de type artisanal
3	64	Chauffeurs
3	65	Ouvriers qualifiés de la manutention, du magasinage et du transport
3	67	Ouvriers non qualifiés de type industriel
3	68	Ouvriers non qualifiés de type artisanal
3	69	Ouvriers agricoles et assimilés
4	71	Anciens agriculteurs, exploitants
4	72	Anciens artisans, commerçants, chefs d'entreprise
4	74	Anciens cadres
4	75	Anciennes professions intermédiaires
4	77	Anciens employés
4	78	Anciens ouvriers
4	82	Inactifs divers (autres que retraités)
4	85	Pas d'activité professionnelle de moins de 60 ans (sauf retraités)
4	86	Pas d'activité professionnelle de plus de 60 ans (sauf retraités)

Note: 0 means public job, 1 means non salaried job, 2 means private, 3 means blue-collar and 4 means job which can be private or public.
Source: INSEE, Paris.