Naturalization and employment of immigrants in France (1968-1999)

Denis Fougère
*CNRS, CREST-INSEE, Paris, France, IZA, Bonn, Germany, and
CEPR, London, UK, and*

Mirna Safi
OSC, Sciences Po and CREST-INSEE, Paris, France

Abstract

Purpose – The purpose of this study is to examine the empirical link between the naturalization of immigrants and their subsequent employment status in France from 1968 to 1999.

Design/methodology/approach – For that purpose, longitudinal data coming from a panel dataset which follows almost 1 percent of the French population from 1968 to 1999 through information contained in the 1968, 1975, 1982, 1990 and 1999 French censuses were used. Control for the potential endogeneity of the naturalization process was through a bivariate probit model.

Findings – It was found that naturalization has a significant positive relationship with immigrants' subsequent employability. This is particularly true for groups of immigrants who have a low probability of employment in the host country.

Research limitations/implications – The dataset can only measure statistical association between naturalization and employment, given the lack of timing information. Interpretation in terms of causality is thus not permitted.

Originality/value – The dataset used is especially valuable for studying social integration of immigrants, since it allows significant samples of immigrants, according to their country of origin, these groups being generally too small in other surveys.

Keywords Immigration, Citizenship, Employment, France

Paper type Research paper

1. Introduction

In 2004, 4.5 million immigrants (defined as people born abroad and living in France) aged 18 or above were residents of mainland France (Borrel and Durr, 2005). They accounted for 9.6 percent of the total population of the same age. 41 percent of them have gained French nationality. This contrasts with the 37 percent posted in 1999. The change can be ascribed to the sharp increase in the number of people granted citizenship in the last few years: the figure went from 92,410 in 1995 to 128,092 in 2002, and subsequently, 144,640 in 2003, for a 13 percent increase over the last two years[1].

A large portion of socio-demographic literature on naturalization has focused on the immigrants' propensity to becoming citizens of the host country. For example, Portes and Mozo (1985) emphasized the importance of socio-economic variables (income, profession, housing ownership). Barkan and Khokhlov (1980), meanwhile, stressed

cultural variables, such as proficiency in the language of the host country. Other research has sought to take into account background variables, in particular the size of the community of origin, its geographic establishment in the host country and developments in legislation making it possible to gain citizenship in the country (Portes and Curtis, 1987; Yang, 1994)[2]. As for economists, they have dwelt more on how gaining citizenship in the host country impacts the individual wage (Chiswick, 1978; Bratsberg *et al.*, 2002) or employment in immigrant populations (Devoretz and Pivnenko, 2004; Bevelander and Veenman, 2006).

Our study examines the link between immigrants' naturalization in France and their subsequent labor force status. For that purpose, we use longitudinal data from the "*Echantillon Démographique Permanent*" (EDP) sample. The EDP is a panel dataset by which we can follow almost 1 percent of the French population from 1968 to 1999 through information contained in the 1968, 1975, 1982, 1990 and 1999 French censuses. The sample we use is limited to immigrants who declared themselves non-naturalized at the time they first appeared in the panel. This makes it possible for us to observe possible changes of nationality over the census dates. We then compare the differential rates of naturalization between the various ethnic groups. In our study, the probability of naturalization not only depends on observable individual characteristics of immigrants (country of birth, age, marital situation, occupation, human capital, etc.), but also on a number of contextual variables related to the role of the community in the assimilation process (size of the community and number of foreigners in the region of residence). Afterwards, we try to provide an analysis of the statistical association between naturalization and the subsequent individual employment rate. However, the immigrants who gain French citizenship are not a sample randomly drawn from amongst the immigrants living on French soil. They differ from others in observable characteristics (education, for instance), but also through other characteristics, which are not observable. Yet those characteristics also affect their probability of finding a job. Consequently, we have to control for the potential endogeneity of the naturalization process. Using a bivariate probit model for estimating simultaneously the equation for naturalization and that for subsequent employment, we find that the coefficient associated with naturalization in the employment equation is significantly positive, and that it is particularly high for groups of immigrants who have a low probability of employment in the host country.

The first section exposes some aspects of the legislation on naturalization in France and develops the hypotheses that may explain its possible link with employment. The next section presents the data we use. Section 3 describes the trends and the structure of naturalizations in France between 1968 and 1999 and examines their determinants. Finally, section 4 presents estimates of the effect of naturalization on the subsequent individual employment rate.

2. The acquisition of French nationality: legal conditions and consequences on employment

Over the last ten years, 125,000 persons gained French nationality each year on average. In France, foreign-born residents can become French either by decree, namely by decision of the public authorities at the request of a foreigner and whether some conditions are fulfilled, or by declaration, after a marriage with a spouse of French nationality. Yet the two ways of gaining French nationality clearly proceed from

different rationale. Since inter-ethnic marriages and their effects on social integration require a specific examination, our study is only concerned with the determinants and employment consequences of French nationality obtained by decree.

France is characterized by a rather liberal legislation on citizenship, especially compared to other European countries. However, even if the French law is comparable to those in force in Australia, Canada and the USA, the naturalization procedure is less frequent and much longer in France[3]. Many studies have shown that in Australia, Canada and the US, the overwhelming majority of immigrants becomes citizens about five years after their legal arrival in the host country. In France, official figures are very different. According to administrative sources, the average length of sojourn in France prior to naturalisation is approximately 17 years (Gaeremynck and Galard, 2000). According to the 1996 Canadian census, 74.6 percent of foreign-born residents have become Canadian citizens (Devoretz and Pivnenko, 2004), which is almost twice the proportion observed in France (40 percent).

Whereas gaining the nationality of the host country is often presented as the final step of an immigrant's integration process, questions can be raised as to whether it is not more than an intermediate step, one that strengthens integration, in particular in its socio-economic aspect. In particular, we can expect that naturalization affects immigrants' status on the labor market and, in particular, their ability to secure a job, due to a range of reasons.

First, naturalization can be regarded as the end of a state of "legal labor discrimination". Indeed, the amount of jobs that cannot be occupied by foreigners should not be underestimated in France. It is of course the case of the overwhelming majority of the public service jobs, either in the strict sense of the term (state employee) or the more general one (employee of a French company in which the government has a major share). This kind of jobs has been restricted to French citizens for a long time, and is today open also to European citizens. But non European foreigners do not have access to them. In a formal report published in 1998, the *Haut Conseil à l'Intégration* asserts that, by excluding non European foreigners from these occupations, the French legislation reduces *de facto* the stock of available jobs by 23 percent (Haut Conseil à l'Intégration, 1998). This figure should even be revised upward when one adds the other types of jobs that are legally forbidden to foreigners. It is indeed the case of a great amount of self-employed and professional occupations, including physicians, lawyers, dentists, midwives, veterinary surgeons, druggists, brokers, chartered accountants, notaries, bailiffs, auctioneers, and receivers (see Math and Spire, 1999).

At the same time, another type of discrimination may also explain the effect of naturalization on employment. Several empirical studies have revealed this form of discrimination occurring during the hiring process[4]. For instance, the International Labour Office (Cédiey and Foroni, 2007) has recently conducted in France a field experiment which shows that applicants with African origin (especially, those who are unskilled) are less likely to be called in for an interview (and, ultimately, to be hired) than the others. It is highly probable that employers consider the acquisition of citizenship as a positive and durable signal of integration in the host country: other things being equal, naturalized migrants should be more attached to the host country that non-naturalized migrants. Our results corroborate this argument.

Our articles tries to measure the global relationship between naturalization and subsequent employment rate of immigrants without being able to identify the

importance of these two types of discrimination. Beyond the computational difficulties implied by the estimation of an econometric model distinguishing different types of occupations, the main reason for neglecting the issue of "legal" discrimination in our study is that we do not have any information on the sector of employment (public vs. private) in the censuses collected before 1999. It is however possible to assess the relevance of this argument by commenting some descriptive statistics calculated with the data of the 1990 and 1999 French censuses. Among foreign-born men (respectively, women) naturalized between 1990 and 1999, 8.67 percent (respectively, 10.01 percent) were employed in the public sector in 1999, and 11.56 percent (respectively, 3.05 percent) were self-employed at the same date. Those proportions were equal to 3.7 percent and 8.14 percent among non-naturalized men (respectively, to 3.88 percent and 2.17 percent among non-naturalized women)[5]. Even if these crude statistics do not control for individual heterogeneity, they suggest that naturalization reduces the legal barriers that limit the access of migrants to some occupations and sectors.

3. The data
The *Echantillon Démographique Permanent* (EDP) is an extensive longitudinal dataset, consisting of individual observations extracted from French censuses. The data registry was created in 1967 and now includes data from the 1968, 1975, 1982, 1990 and 1999 censuses. The EDP includes all individuals born on certain days of the year (four out of 365 days, which corresponds to approximately 1 percent of the population) and for whom certified documents stating vital data such as birth, marriage, death, childbirth, etc., are available[6]. Every year, the persons born on the four reference days are added to those already included in the sample. As regards immigrants, they appear in the EDP as soon as they are identified, or as soon as one of their civil status certificates is found. In addition, an immigrant may disappear from the EDP due to migration outside France or to death, like any other individual in the sample. The primarily demographic nature of census data is such that the EDP does not provide access to information that is particularly useful for studies on immigration. Two of the main missing variables are the individual degree of proficiency in the French language and the number of years in the host country, which are known to play a primordial role in immigrants' integration and naturalization. Despite these limitations, EDP is a valuable dataset to study immigration since it allows researchers to deal with significant samples of immigrants and to compare several groups of immigrants, according to their origin country, these groups being generally too small in other surveys.

The analyzed sample is restricted to individuals declaring themselves as foreigners born abroad when they first appear in the EDP. The dataset allows us to track these individuals through the information collected at each census. Indeed, at each census interview, every individual residing in France must declare his or her current nationality. It is therefore possible to identify the immigrants who have gained French citizenship between two successive censuses.

In the overwhelming majority of cases, acquisition of the French nationality is possible only for immigrants who lived in France for more than five years. As information about the arrival dates of immigrants in France is not available in our data, we have limited the sample to individuals who declare to be foreign-born in two successive censuses (say, census 1 and census 2). Thus, we are sure that such

individuals stayed in France more years than the legal duration of residency prior to naturalization. We then examine their possible naturalization during the next inter-census period (say, between census 2 and census 3) and afterwards their employment situation at the date of the third census (say, census 3). Thus, our sample includes the individuals present at three successive censuses at least.

The possibility of naturalization can be thus observed over three possible inter-census periods: between 1975 and 1982 (for foreigners previously observed in 1968 and 1975), between 1982 and 1990 (for foreigners previously observed in 1975 and 1982) and between 1990 and 1999 (for foreigners previously observed in 1982 and 1990).

Here two remarks must be done. First, using our data, we cannot observe the actual date of naturalization, nor does it follow employment over time. We merely observe that at time of a census (say in year t), an individual is employed, and that he/she has some given characteristics at that time. We do not know if this individual entered employment the year following the previous census (which occurred in year t-7 or t-9) and was naturalized the year prior to the current census (in year t), or vice versa. The only way to deal with this issue, given the data at hand, would be to examine the effect of naturalization status at the previous census date (say, in year t-7 or t-9) on employment at the next census (in year t). But this is not satisfactory either, since there is a possibility for the non-naturalized to naturalize prior to time t, bringing us back into the same problem again. In short, we can measure only statistical association between the two factors, given the lack of timing information. Interpretation in terms of causality is thus not permitted[7].

Second, we should remark that, due to our selection rule, the analyzed sub-sample is a balanced panel. This sub-sample includes only individuals who are present at three successive census interviews; it excludes in particular foreigners who left France between two successive censuses and/or were non-respondents at the second census interview. Incorporating them into the analysis would raise a real difficulty, as there potentially exists a dual causal relationship between naturalization and the individual's migratory path: a foreigner may leave France before demanding French citizenship, in which case the departure prevents possible citizenship from being granted; however, he or she may also leave the country because he or she failed to gain citizenship. In the present article, we do not take into account the attrition bias, that will be treated it in a further research. However, we give here some indication on the consequences of this selection on the sample composition. For that purpose, we compare, through the estimation of a probit model, individuals who are present at three successive census interviews and who are registered as foreigners at the first two dates, to those who move at least once to the attrition state. The parameter estimates of this model are reported in Table I. We remark first that immigrant women have a lower probability to exit the sample. For both genders, Sub-Saharan Africans and Moroccans have the highest probabilities to move to attrition. Men who are selected in our sample have different occupations: they are less often managers or office workers, and they are also less often unemployed. Finally, the probability of attrition is lower amongst highly-educated migrants. As the probabilities of naturalization and employment both increase with education, it is possible that our findings somewhat overestimate the positive relationship between naturalization and subsequent employment.

Covariates	Both genders		Men		Women	
Intercept	0.70	***	0.60	***	0.80	***
Country of origin						
Spain						
Sub-Saharan Africa	0.36	***	0.39	***	0.30	***
Algeria	− 0.10	***	0.03	ns	− 0.42	***
South-East Asia	0.19	***	0.14	**	0.25	***
Western Europe	− 0.10	***	− 0.13	***	− 0.11	**
Morocco	0.38	***	0.54	***	0.18	***
Eastern Europe	0.05	ns	0.09	**	− 0.01	ns
Italy	− 0.47	***	− 0.42	***	− 0.55	***
Portugal	− 0.07	***	− 0.05	**	− 0.09	***
Tunisia	0.04	ns	0.14	***	− 0.12	**
Turkey	0.05	ns	0.01	ns	0.14	*
Occupation						
Blue collar						
Farmers	− 0.02	ns	− 0.02	ns	0.04	ns
Craftsman retail trader	− 0.01	ns	0.00	ns	− 0.04	ns
Manager	0.18	***	0.29	***	− 0.06	ns
Intermediate professions	0.02	ns	0.05	ns	0.00	ns
Office worker	0.17	***	0.17	***	0.08	**
Unemployed	0.13	***	0.14	***	0.05	ns
Non-working	− 0.03	ns	0.28	***	− 0.08	***
Time period 1968-1975-1982						
1975-1982-1990	− 0.10	***	− 0.08	***	− 0.13	***
1982-1990-1999	− 0.19	***	− 0.14	***	− 0.27	***
Education No diploma						
Junior High School	− 0.32	***	− 0.34	***	− 0.28	**
Vocational High School	− 0.28	***	− 0.34	***	− 0.11	***
High-school	− 0.19	***	− 0.28	***	− 0.07	ns
Post-secondary education	− 0.11	**	− 0.19	***	− 0.01	ns
Age						
Between 18 and 25 years old						
Between 26 and 35 years old	0.05	***	0.09	***	0.00	ns
Between 36 and 45 years old	0.02	ns	0.01	ns	0.02	ns
Between 46 and 55 years old	0.08	***	0.10	***	0.00	ns
Marital status						
Single						
Married	− 0.21	***	− 0.18	***	− 0.23	***
Widowed or divorced	− 0.21	***	− 0.02	ns	− 0.24	***
Size of the urban residential area						
Fewer than 20,000 inhabitants						
Between 20,000 and 100,000	0.04	*	0.00	ns	0.10	***
More than 100,000	0.07	***	0.06	***	0.08	***
Gender						
Men						
Women	− 0.07	***				
Number of observations	46,632		29,363		17,269	

Note: Significant at *0.10; **0.05; ***0.01; for each covariate, the reference value is in italics
Source: INSEE (1968-1999)

Let us remark that the procedure we adopt to detect naturalizations in our data has some limitations. First, it is impossible to identify unfailingly the type of naturalization (by decree or by declaration). Information about the date of marriage and the spouse's nationality makes it nonetheless possible to identify the cases corresponding to the simultaneous occurrence of an inter-ethnic marriage and of a naturalization over the inter-census period. Focusing our analysis on naturalizations by decree, we leave out those cases. Clearly, the method is imprecise since it is possible that, between two censuses, an immigrant gains nationality by decree, then marries a person of French nationality. This restriction eliminates 20.4 percent of naturalizations observed in the data.

Second, since we are dealing with census data, we cannot distinguish, amongst non naturalized immigrants, between those who did not apply for naturalization and those for whom naturalization was refused. Indeed, naturalization is the result of the interaction between an individual's decision (that of the foreigner applying for naturalization) and the attitude of public authorities toward immigrants. For instance, a low naturalization rate can be the result either of infrequent demands from migrants or of multiple rejections on the part of the administration. Consequently, we cannot use the EDP data to examine the selective or self-selective behaviors that determine the outcome of the naturalization process, but rather to identify the individual characteristics that are statistically correlated with gaining citizenship.

Last, as our study aims to analyze the interaction between naturalization and employment, the sample is limited to individuals between ages 18 and 55, who were neither student nor engaged in the military at the date of the census. Finally, the statistical analysis by country of origin can be performed only for countries with sufficient representation in the sample, namely for Spain, Italy, Portugal, Algeria, Morocco, Tunisia and Turkey. Western Europe (excluding Spain, Italy and Portugal), Southeast Asia (Cambodia, Laos and Vietnam), Sub-Saharan Africa and Eastern Europe are also brought into the analysis as world regions, without distinguishing between countries of origin. Given those restrictions, the sample is reduced to 17,386 observations (corresponding to 11,379 individuals). Table II gives the numbers of observations corresponding to each country (or group of countries) of origin.

Country of origin	Number of observations	Percentage
Portugal	4,854	27.92
Algeria	3,243	18.65
Italy	3,481	20.02
Spain	2,285	13.14
Tunisia	902	5.19
Other countries from Western Europe	730	4.20
Eastern Europe	558	3.21
Turkey	434	2.50
Morocco	403	2.32
South-East Asia	252	1.45
Sub-Saharan Africa	244	1.40
Total	17,386	100

Source: INSEE (1968-1999)

Table II.
Number of observations
by country or group of
countries of origin

4. Naturalization and the subsequent employment probability

Unfortunately, the data set we use provides no information about individual wages. We focus therefore on measuring the link between immigrants' naturalization and their subsequent employment rate. To do so, we estimate the probability of an immigrant for being employed at the end of the inter-census period by taking into account possible naturalization during this period.

Nonetheless, the effect of naturalization on subsequent employment can be biased by the potential endogeneity of naturalization, since some unobservable individual characteristics may affect both the probability of being naturalized and that of finding a job. Such a bias can be corrected by simultaneously estimating the probability of being naturalized between two censuses and the probability of having a job at the end of the inter-census period with a bivariate probit model. The first probit equation explains naturalization during the inter-census period while the second probit equation generates the employment status at the end of this period. Parameter estimates of this model are reported in Table III.

4.1 Parameter estimates of the naturalization equation

There are two types of factors possibly affecting successful application for French nationality: individual socio-demographic characteristics and contextual data. Some of the characteristics determining whether an individual does or does not gain French nationality include country of birth, gender, age, marital status, socio-professional category, education, activity status and size of place of residence[8].

Contextual variables include the size of the community of origin in the place of residence and the concentration of the immigrant population in this place. The literature contains two competing hypotheses on the possible effects of the size of the origin community. Some believe that the probability of naturalization declines when this size is larger. Indeed, when the community is self-sufficient enough, it can offer the newcomer an extensive network of connections, making it easier for him or her to find housing and employment; in that setting, gaining French nationality would not be as attractive to him. In addition, the size of the origin community could limit the feeling of belonging to the host society, insofar as it strengthens the ties with the newcomer's compatriots and attachment to the culture of the country of origin. Other analysts believe, to the contrary, that a large community can have a positive impact on its members' socio-professional assimilation and, thereby, an indirect positive effect on their naturalization (Portes and Mozo, 1985). According to them, a larger community eases the spread of information about administrative paperwork and procedures. To take into account the relative size of the community of origin, the percentage of immigrants by origin and by region of residence[9] has been included amongst the factors likely to foster successful application for French nationality.

However, the number of immigrants can have yet another effect: it determines, at least indirectly so, the length of the queue for those applying for nationality. The length of the "waiting line" can, in turn, slow down the naturalization process and lower chances of gaining nationality between two census dates. In order to illustrate this phenomenon, we add to the list of factors likely to affect naturalization the number of foreigners (implicitly considered as potential candidates for naturalization) residing in the same local administrative unit at the time of the census[10]. It is expected that the

Covariates	Men	Women
Naturalization equation		
Intercept	−1.44***	−1.02***
Country of origin		
Spain		
Sub-Saharan Africa	0.44***	0.89***
Algeria	−0.37***	−0.04 ns
South-East Asia	1.12***	1.27***
Western Europe	−0.42***	−0.63
Morocco	0.34***	0.20*
Eastern Europe	0.38***	0.34
Italy	−0.05 ns	−0.29***
Portugal	−0.42***	−0.31**
Tunisia	0.14*	0.23**
Turkey	−0.47***	−0.32*
Occupation		
Blue collar		
Farmers	0.36***	0.37 ns
Craftsman retail trader	0.19***	−0.24 ns
Manager	0.34***	0.54**
Intermediate professions	0.27***	0.20 ns
Office worker	0.03 ns	0.17***
Unemployed	0.13**	0.08 ns
Non working population	−0.10 ns	−0.03 ns
Age		
Between 18 and 25 years old		
Between 26 and 35 years old	0.11*	−0.09 ns
Between 36 and 45 years old	0.07 ns	−0.07 ns
Between 46 and 55 years old	−0.48***	−0.47***
Education		
No diploma		
Junior High School	0.19***	0.28***
Vocational High School	0.28***	0.46***
High School	0.26***	0.51***
Post-secondary education	0.33***	0.41***
Time period		
1968-1975		
1975-1982	0.14**	0.08 ns
1982-1990	−0.12***	−0.21***
1990-1999	0.05***	−0.16***
Marital status		
Single		
Married	0.40***	0.08 ns
Widowed or divorced	0.47***	0.19*
Number of foreigners in the department	−0.05***	−0.08***
Relative size of the community in the regio of residence	2.81**	4.04**
Employment equation		
Intercept	0.71***	0.40 ns
Country of origin		
Spain		
Sub-Saharan Africa	−0.49***	−0.12 ns
Algeria	−0.01 ns	−0.53***
	(*continued*)	

Covariates	Men	Women
South-East Asia	−0.64***	−1.04***
Western Europe	0.09 ns	−0.05 ns
Morocco	−0.28***	−0.52***
Eastern Europe	−0.43***	−0.18 ns
Italy	−0.07 ns	−0.14**
Portugal	0.38***	0.20***
Tunisia	0.25***	−0.48***
Turkey	0.15 ns	−0.70***
The effect of naturalization in each country (interaction)		
Spain	1.66***	0.80***
Sub-Saharan Africa	2.27***	0.66**
Algeria	1.74***	1.42***
South-East Asia	1.57***	1.46**
Western Europe	1.52***	0.69***
Morocco	1.96***	1.28***
Eastern Europe	1.71***	1.05***
Italy	1.77***	1.10***
Portugal	1.59***	0.86***
Tunisia	1.69***	1.27***
Turkey	1.29***	1.29***
Age		
Between 18 and 25 years old		
Between 26 and 35 years old	0.32 ns	−0.22 ns
Between 36 and 45 years old	0.28 ns	0.04 ns
Between 46 and 55 years old	−0.14 ns	−0.21 ns
Education		
No diploma		
Junior High School	0.03 ns	0.10**
Vocational High School	0.05 ns	0.15**
High School	0.04 ns	0.26**
Post-secondary education	0.17**	0.34***
Time period		
1968-1975		
1975-1982		
1982-1990	−0.16***	0.23***
1990-1999	−0.33***	0.16***
Marital status		
Single		
Married	−0.02 ns	−0.08 ns
Widowed or divorced	−0.20**	−0.07 ns
Previous employment status		
Employed		
Unemployed	−0.63 ns	−0.72***
Out of the labor force	−0.90**	−1.18***
Size of the urban residential areas		
Less than 20,000 inhabitants		
Between 20,000 and 100,000	−0.05 ns	0.16**
More than 100,000	−0.09**	0.15***

Notes: Significance at *0.10, **0.05, ***0.01; for each covariate, the reference value is in italics; sample sizes: men, 10,444, women, 6,877
Source: INSEE (1968-1999)

impact of this variable on the probability of naturalization will be negative: the longer the queue, the lower the probability of gaining nationality between the two dates.

These two variables (i.e. the relative size of the community in the region of residence, the number of foreigners of the same origin in the *département*) help us to identify our bivariate probit model. More precisely, they are supposed to affect the probability of naturalization, and not the probability of employment at the end of the inter-census period. This assumption seems realistic because these covariates represent the local context seven or nine years before the immigrant's employment status is observed. Since there are more exclusion restrictions than necessary (two rather than one), we have tested for the over-identification of our model by using successively each of these two covariates as a regressor – either in the employment equation only or in the two equations of our model simultaneously, the other being only included in the list of regressors potentially affecting naturalization. These exercises reveal that the two contextual covariates are (separately) not statistically significant in the employment equation, while either both covariates or the excluded one are still significant (at least at the 0.05 level) in the naturalization equation.

Last, in order to reflect the possible impact of the economic environment, we have also incorporated a dummy variable indicating the inter-census period (1968-1975, 1975-1982, 1982-1990, or 1990-1999) into the analysis.

Results reported in Table III show that the country of origin is a significant determinant of the probability of naturalization between two consecutive censuses. Migrant males from Southeast Asia, Sub-Saharan Africa and, to a lesser extent, Eastern Europe and Morocco, are more likely to be naturalized. Immigrants from Portugal, Western Europe (at the exception of Spain and Italy), Algeria and Turkey are the least likely to be naturalized.

Women are more likely to be naturalized than men[11]. However, the influence of marital status is different for men and women. Married men are more likely to gain French nationality than single men, whereas this covariate is not statistically significant for women. The birth country ranking by impact on the probability of naturalization is almost the same for men and women, but the gaps between Portugal, Italy and other countries of Western Europe (at the exception of Spain), on one side, and Sub-Saharan Africa and Southeast Asia on the other, are greater amongst women than amongst men.

Socio-professional category and educational attainment also have a highly significant effect on the probability of naturalization. Being non-employed reduces the probability of naturalization. Production workers also appear at a disadvantage.

The relative size of the community of the country of origin has a positive impact on the probability of naturalization. This confirms the hypothesis stated above on the role of community networks in the naturalization process. As expected, the length of the potential queue, as measured by the number of foreigners (of the same origin) in the local administrative unit, on the other hand, has a negative effect.

4.2 Parameter estimates of the employment equation
Table III reveals that the slope parameter associated with the naturalization indicator in the employment equation is generally higher for men than for women. It varies significantly across countries of origin. It is higher for migrants, especially men, coming from Sub-Saharan Africa and Morocco. As suggested by the negative sign of

the estimated coefficient of correlation between the residuals of the two probit equations[12], the immigrants whose unobservable characteristics make them less employable are those who are the most likely to ask for naturalization, other observable things being equal.

Naturalization appears to have a very high effect on the labor force status of the most disadvantaged categories, i.e. those with the lowest employment probabilities. For instance, women from South-East Asia; Turkey, and North-Africa have the lowest employment rates, but the "naturalization premium" is much higher for them than for migrant females from other countries. For men, the highest "premium" is to be found amongst migrants from Sub-Saharan Africa, who also have a very low employment rate.

There exist other major differences between employment rates of men and women. While employment probability of women remains lower than that of men, male job activity reflects, above all, a decline in the macroeconomic situation over the period (and the rise of unemployment), whereas the steady growth of female employment probability is due to the increasingly sustained participation of women in the labor market. The model is probably better specified for men, as it omits two variables that have a major influence on female activity: the number of children and the spouse's labor force status, which were not collected at each census. Previous labor force status has a major influence on labor force status at the end of the period, even more so for women than for men. For both genders, non-employment is a greater impediment than unemployment.

5. Conclusions
The probability of gaining French nationality varies significantly, depending on country of origin, gender, socio-professional category, educational attainment, marital status and size of the immigrant's place of residence. It decreases with the number of foreigners of the same national origin residing in the same local administrative area. However, and this is probably the newest finding, gaining French nationality significantly is estimated to have a statistically significant and positive link with subsequent employability. This result is obtained after controlling for the potential endogeneity of the naturalization process.

The results obtained here show that gaining French nationality can significantly offset the extent of labor discrimination against migrants, at least in an environment where it is preceded by selective administrative procedures and where it is enhanced by legal barriers at entry in some occupations and sectors (like the public sector). By recognizing full citizenship to the immigrant aspiring to French nationality, the State greatly facilitates his or her integration into the labor market and society as a whole.

Notes
1. Looking only at the number of people granted citizenship by decree or declaration (see Section 2), the numbers are 61,884 in 1995, 95,552 in 2002 and 110,511 in 2003, for an increase of 19.4 percent over the course of 2003 (the figures are provided on INSEE's web site, available at: www.insee.fr/fr/ffc/chifcle_fiche.asp?ref_id = NATCCI02122&tab_id = 425&souspop = 4).

2. An already dated summary of the work carried out in the 1970s and 1980s can be found in De Sipio's (1987) article.

3. Naturalization by decree can be obtained after a formal demand that is either accepted or rejected by the administration after the examination of the foreigner's file.

4. Conducted more frequently in the United States than in France, they are often based on field experiments. For instance, Bertrand and Mullainathan (2004) use job applicants' first names to denote ethnic origin.

5. Non-naturalized migrants can occupy jobs with temporary labour contracts in the public sector, but they cannot be formal civil servants (which is only possible for persons having French citizenship).

6. Information contained in these certified administrative documents is matched with that coming from the census data.

7. Consequently, we do not use terms such as "impact" or "causal effect" of naturalization on employment. We prefer to use terms such as "relationship", "link" or "interaction" between the two variables.

8. The value of each of these variables, with the exception of country of birth and gender, can vary from one inter-census period to the next. Where no information is available about the value of one covariate at the exact time of naturalization, its value at the start of the inter-census period is used.

9. This variable was computed using census data. In order to limit imprecision due to the low number of foreigners in certain regions, the rates were calculated by region of origin, rather than country of birth. For instance, a Moroccan immigrant who lives in the Aquitaine region will be assigned to the percentage of North African immigrants living in the region. That choice implicitly assumes that the community network includes all foreigners from the same geographical zone.

10. The groups of foreigners belonging to a nationality or group of nationalities are computed by department, as applications for naturalization must be filed with the *département* prefecture.

11. A similar result is obtained by Constant *et al.* (2008) for Turkish and ex-Yugoslav immigrants in Germany.

12. The estimated coefficients of correlation, which are not reported in Table III, are equal to -0.91 for men and to -0.46 for women. Both are statistically significant at the 0.01 level.

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About the authors
Denis Fougère is Senior Research Fellow at CNRS (Centre National de la Recherche Scientifique) and member of the Microeconometrics Laboratory at CREST-INSEE (Paris). He was Head of this Laboratory from 1997 to 2002. He is also professor at Ecole Polytechnique (Paris) and at Ecole Nationale de la Statistique et des Etudes Economiques (ENSAE, Paris). His main fields are labor economics, microeconometrics, evaluation of active labor programs and social policies. Denis Fougère is also Research Fellow at IZA (Bonn) and at CEPR (London), consultant at Banque de France (Paris) and Economic Adviser at the French Ministry of Education. Denis Fougère is the corresponding author and can be contacted at: fougere@ensae.fr

Mirna Safi is Research Fellow at OSC (Observatoire Sociologique du Changement, Sciences-Po, Paris). She is also lecturer in quantitative methods applied to the sociology of immigration at Institut de Sciences Politiques (Sciences-Po, Paris). She obtained her PhD in sociology from Ecole des Hautes Etudes en Sciences Sociales (EHESS, Paris) in 2007. Her main field is social integration of immigrants.