Regional Science and Urban Economics 48 (2014) 154–167

Contents lists available at ScienceDirect

Regional Science and Urban Economics

journal homepage: www.elsevier.com/locate/regec

Ethnic differentials on the labor market in the presence of asymmetric spatial sorting: Set identification and estimation

Roland Rathelot *

CREST — 15 Boulevard Gabriel Péri, 92245 Malakoff Cedex, France

ARTICLE INFO

Article history:
Received 23 January 2013
Received in revised form 26 June 2014
Accepted 27 June 2014
Available online 5 July 2014

JEL classification:
C23
J71
R23

Keywords:
Ethnic employment gaps
Spatial sorting
Set identification
Discrimination
Spatial mismatch

ABSTRACT

This paper aims to isolate the ethnic gap on the labor market that can be attributed to ethnicity and not to differences in individual characteristics or residential location. Controlling for residential location is important as ethnic minorities often live in distressed neighborhoods. It is also challenging because spatial sorting is likely to differ across ethnicities because of labor- or housing-market discrimination. This paper shows that controlling for neighborhoods and observed individual characteristics fails to provide a consistent estimate for the component of the gap accountable to ethnicity only. However, under some assumptions, the quantity of interest is set identified even when heterogeneous sorting patterns across ethnicities are allowed for and the set estimate can still be informative. A two-step estimation method is presented and applied to explain the ethnic employment differential in France, between French individuals of North African ancestry and those with non-immigrant parents. Most of the gap is not due to differences in residential location or individual characteristics, but rather to ethnicity itself.

1. Introduction

In most countries, ethnic minorities are disproportionately more likely to live in distressed neighborhoods. To what extent can their lower labor market performances be attributed to ethnicity, and not to location? As Hellerstein and Neumark (2012) put it, is the issue of ethnic gaps on the labor market place-based or race-based? Should public policies target areas or ethnicities? Disentangling the effects of ethnicity from those of location may seem straightforward: introducing a measure of neighborhood quality in the employment or the wage equation would solve the problem. This paper shows that it is not the case: when ethnic minorities have spatial sorting behaviors that differ from the majority population, controlling for location does not yield consistent estimates. This article makes three contributions. First, a theoretical model shows that ethnically-asymmetric spatial sorting is likely to occur under reasonable assumptions. Second, we show that the ethnic gap attributable to ethnicity can only be partially identified and we provide a method to estimate the bounds. Finally, this method is applied to the employment gap of French workers of North African ancestry compared to those with French parents: the ethnic gap in the employment rate is mostly due to ethnicity and not to differentials in individual traits or residential location.

Residential location may affect employment status through several channels. First, the spatial mismatch hypothesis, first postulated by Kain (1968), states that living further away from jobs reduces workers' employment probability.[1] Second, human capital externalities may play a role: living in a place where everyone is unemployed makes it harder for a job-seeker to find work (Cutler and Glaeser, 1997; Bayer et al., 2008; Ioannides, 2011). Because location is endogenous, individuals with different preferences or characteristics are going to sort across places.

This sorting can result in statistical hiring discrimination based on residential location (redlining), decreasing the employment rate in some neighborhoods.

Spatial mismatch, local human-capital externalities or redlining may explain why, regardless of ethnicity, some areas exhibit lower employment rates than others. However, ethnic minorities have lower employment rates, regardless of where they live. Ethnic labor-market discrimination is an appealing explanation as it has been documented to hamper hiring for Blacks in the US as well as for the French of North African ancestry in France.[2] Recent empirical evidence for the

* Tel.: +33 141176036; fax: +33 141176029.
E-mail address: roland.rathelot@ensae.fr.

[1] See e.g. Ellwood (1986); Ihlanfeldt and Sjoquist (1998); Ihlanfeldt (2006); Gobillon and Selod (2007) for empirical elements about spatial mismatch in the US and in France and Gobillon et al. (2007) for a comprehensive theoretical survey. See also (Zenou (2009, Part 3)).

[2] See Bertrand and Mullainathan (2003) and Duguet et al. (2010) for correspondence studies on ethnic hiring discrimination, in the US and in France.

http://dx.doi.org/10.1016/j.regsciurbeco.2014.06.007
0166-0462/

US (Ritter and Taylor, 2011) and for France (Aeberhardt et al., 2010) suggest that, if some ethnic discrimination occurs on the labor market, it is more likely to occur at the hiring stage than at the wage-setting stage.[3] In addition to ethnic discrimination, other factors may be at work, such as cultural transmission of labor participation (Fernandez and Fogli, 2009) or differences in social-network quality.

This paper aims to separate the component of the ethnic employment gap due to ethnicity from differences in neighborhoods of residence and individual characteristics. Controlling for location seems to be important, because ethnic minorities tend to live in more distressed neighborhoods and location is believed to have a causal impact on labor-market outcomes.[4] However, we show that introducing a proxy for neighborhood quality (or, even better, fixed effects for location) in the employment equation is only valid when ethnic groups have symmetric sorting behaviors, i.e. when, conditional on their characteristics (whether observed or unobserved), individuals from the majority and the minority locate in places of similar quality. We present a simple theoretical framework showing that, if discrimination toward the minority exists on either the housing or the labor markets, individuals from the minority are less likely to be located in good places, conditional on their characteristics. This also implies that, conditional on neighborhood quality and observed characteristics, individuals from the minority will have better unobserved traits. Interestingly, we show that, conditional on neighborhood quality, minority individuals do not necessarily have better observed traits, so that computing ethnic differentials in observables within a location is not a valid indicator for spatial sorting. Empirically, we find that workers of North African origin tend to live in worse neighborhoods than those with French parents that have similar observed characteristics, which signals a potential asymmetric spatial sorting.

When sorting is asymmetric, controlling by location is not enough, because the expectation of unobservables is different across groups even conditional on location and observables. For instance, discriminated minorities that live in the best neighborhoods probably have extremely good unobservable traits. A second contribution of this paper is to show that, even when sorting is asymmetric, the ethnic employment gap attributable to ethnicity can still be partially identified under reasonable assumptions. When the minority locates in worse neighborhoods than the majority conditional on individual characteristics, controlling for characteristics only provides a lower bound while controlling for both characteristics and location provides an upper bound. We propose a semi-parametric two-step method to estimate these bounds.

Finally, we apply this method to compare individuals whose parents are North-African migrants to those with French non-migrant parents, using the French Labor Force Survey (Insee, Paris) from 2005 to 2011.

While the raw ethnic employment gap is equal to 21 percentage points (55% vs. 76%), 13 to 17 percentage points are due to ethnicity only and not due to differences in observable characteristics or residential location. The main result of this study is in line with the one of Hellerstein et al. (2008) in the US case: hurdles associated with residential location are not key to explain ethnic minorities' unemployment. Using a different methodology, Gobillon et al. (2014) also find that spatial factors are not the primary explanation of ethnic gaps in France.

The next section presents the data and some summary statistics. In Section 3, a simple theoretical model explains how discrimination on the housing or on the labor market may generate asymmetric residential sorting. Moreover, we provide insights for the existence of bounds in a simple linear framework. Section 4 presents the main identification results in a more general setting and details the estimation strategy. The results are presented and discussed in Section 5. Section 6 concludes.

[3] See also Abowd and Killingsworth (1984), Fairlie and Sundstrom (1999) for other evidence about the ethnic employment differentials and Neal and Johnson (1996) about the small size of the ethnic wage gap in the US.

[4] This is related to Black et al. (2013) who study the effect of controlling for location – MSAs or regions, in their case – on the Black–White wage gap in the US.

2. Data and summary statistics

2.1. Data source and sample

In this paper, the empirical analysis is based on the French Labor Force Survey (LFS, Insee), from 2005-Q1 to 2011-Q4. The sampling frame of the LFS involves geographical cluster sampling and goes as follows. First, using information from the 1999 Census (until 2010) and the 2006 Housing Tax files (from 2010 on), *primary sample units* (of several thousand inhabitants) are selected using stratified random sampling. Then, within each of these primary units, at least one *cluster*, consisting of between 120 and 240 contiguous households, is defined. The cluster level is useful to control for very local neighborhood effects. Some local characteristics affecting one household in a given cluster will undoubtedly affect the other households in the same cluster. Note also that, by definition, clusters are strictly included in municipalities (the smallest administrative unit), so that the inhabitants of a given cluster are assumed to be supplied with comparable public goods. For privacy reasons, the data associate each household to a cluster ID, but the geographical location of clusters is unknown.

In this study, we compare a minority group to a majority group. In line with the literature, the minority group we focus on has at least one parent born with a North African citizenship.[5] As a comparison, some results are also given on individuals with Southern European parents. The majority group has both parents born French in France. Individuals from both groups are all born in France and have a French citizenship. Therefore, the analysis deals with individuals who are not migrants themselves. There are two reasons for this: first, education or labor experience acquired in France or abroad may be viewed differently by French employers; second, a certain command of French may also account for variability in employment rates.

Our outcome of interest is the employment status.[6] Gender, education and age are used as explanatory variables. The education variable reflects both the level and the field of the obtained degree, resulting in twenty dummies. Age and age squared are included in all specifications. The sample is restricted to individuals aged 20 to 59.

2.2. Disparities in individual characteristics

Table 1 presents some summary statistics on the three subpopulations: the reference group in the first column, French individuals of North African and Southern European ancestries in columns 2 and 3.

The most striking fact is that individuals of North African origin have worse labor market outcomes than that of other groups; they are less likely to work (55% vs. 76%) and those who do earn around 16% less. They are less likely to be executive or professional (6% vs. 13%), to occupy technical or sales occupations (15% vs. 20%) or to work in agriculture (0% vs. 2%). They are slightly more likely to be office workers or blue collars and far more likely to have no reported occupation (31% vs. 18%). By contrast, the employment rate of the individuals of Southern European origin is very close to the one of the reference population. They earn 4% less and are less often employed in executive positions (10% vs. 13%).

The low employment rate in the group of North African ancestry is to some extent linked to their individual characteristics. First, they have less education: 4.6% of them holds a Master's degree, a diploma from an Elite university, or a PhD, while 7.8% of the reference population does so. They also frequently end up with no qualifications at all. 33% of them dropped out of the system with no diploma at all or the basic *Brevet des Collèges* (taken at the end of the 9th grade), while this is only the case for 24% of the French with French parents. Second, this minority group is on average 8 years younger than the rest of the

[5] Since 2005, the LFS includes questions about one's parents' nationality at birth.

[6] The analysis has been replicated using the log-wages as the outcome. However, in line with the previous literature, the ethnic wage gap is entirely explained by differences in education and age. Detailed results are available from the author upon request.