Differences in work conditions between natives and immigrants: preferences vs. outside employment opportunities

Eva Moreno Galbis

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Abstract

Immigrants are disproportionately employed in agriculture and construction, sectors with relatively high injury rates. What pushes immigrants to accept riskier and more strenuous work conditions? We propose a circular model and show that differences in average work conditions borne by natives and immigrants are driven by both preferences and unearned income. Using French data we find that, in line with the model's predictions, (i) rigid wages are associated with a larger immigrant-native gap in work conditions; (ii) high unearned income individuals benefit on average from better work conditions; (iii) differences in preferences over work conditions driven by demographic characteristics explain only part of the immigrant-native gap. This particularly applies to high unearned income workers. For low unearned income workers other factors seem to drive differences in preferences over work conditions.

Keywords: immigrants, work conditions, outside employment opportunities, preferences, composition effects

JEL: J15; J61; J81

1 Introduction

In France, more than 62% of professional injuries concern manual workers. With a frequency of professional accidents per million hours worked above 41, the construction sector arises as the most dangerous economic activity.[1] On average 33% of immigrants are manual workers[2], and when considering only immigrant men, this percentage rises to above 50%.[3] Immigrants are over-represented in the construction sector where they constitute more than 23% of workers,[4] as well as among houseworkers (33%) and security guards (25%). Why are immigrants over-represented in riskier sectors and more strenuous occupations? What pushes them to accept less desirable work conditions?

There are several reasons that can rationally explain why immigrants are willing to accept riskier jobs than their natives counterparts. First, because work conditions of immigrants in their home country may be very hard and since they may have also gone through very difficult migration trip conditions, immigrants are likely to have a differing perception of risk compared to natives. Second, lower levels of education, social capital or poor language proficiency may lead immigrants to have less information on the actual risks associated with a job. Third, upon arrival immigrants tend to be in better health than natives so they might be willing to hold more physically strenuous jobs than natives. Finally, even if immigrants and natives have similar knowledge about job risks and the same legal status, immigrants might still occupy riskier jobs than natives because of differences in outside opportunities (value of leisure, alternative employment opportunities or differences in unearned income).

Both labor demand and labor supply factors contribute to explain why immigrants are willing to accept riskier and more strenuous work conditions than natives. Our paper focuses on two particular factors. First, the range of acceptable work conditions for an individual depends on her outside employment opportunities. Apart from the number of job offers received by the individual — which are not considered in this paper — unearned income (*i.e.* wealth, value of leisure, home production, etc) stands for a major factor driving outside employment opportunities. Second, the range of acceptable work conditions also depends on preferences of the individual. Our guess is that these preferences are partially driven by socio-demographic characteristics such as gender, age, education, marital status, children, etc. Typically, when people are young and without children they may be willing to accept a job involving some physical risk that older people with children may not be willing to accept. Demographic characteristics influence preferences over work conditions and thus the range of acceptable work conditions. If immigrants and natives differ in both outside employment opportunities and preferences, or even if they simply differ in one of these dimensions, their range of acceptable work conditions will not be the same, implying that, on average, work

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[1] See DARES note 2016-39 (French Ministry of Labor).

[2] French census data 2004-2007.

[3] See DARES note 2009-92 (French Ministry of Labor).

[4] The share of immigrants in France is below 10%. See the 2012-01 note from the Centre d'Analyse Strategique, France.

conditions borne by each nativity group will be different.

The economic rationale of our paper is easily represented through the standard circular model presented in Gautier and Zenou (2010) and inspired by Salop (1979). In this model each individual has a most preferred position in the circle of available work conditions. However, the individual may be willing to accept a range of work conditions. The main advantage of this theoretical framework is that both wages and the range of acceptable work conditions are endogenously and simultaneously determined. Our framework predicts that the range of acceptable work conditions for the worker decreases with unearned income and with the utility loss induced by the distance between the most preferred and actual work conditions borne by the individual. In contrast, wages are increasing in unearned income and in the range of acceptable work conditions.

If natives have higher unearned income than immigrants and suffer from a higher utility loss from the gap between most preferred and actual work conditions, the range of acceptable work conditions will be larger for immigrants than for natives. This implies that immigrants will bear relatively worse work conditions than natives with respect to their most preferred choice. Our framework also predicts that flexible wages reduce the difference between natives' and immigrants' work conditions since both wages and work conditions can be used as adjustment variables during the bargaining process between firms and workers. In contrast, rigid wages induce larger immigrant-native gaps in work conditions since they become the only adjustment variable. Finally, our model allows for individual heterogeneity along the circle implying that, while immigrants may bear relatively worse work conditions than natives, there can be some immigrants who actually benefit from a lower gap than natives between their most preferred and actual work conditions.

The model's predictions are tested on French data. We combine individual-level data from the French Labor Force Survey (LFS) 2003-2012 with industry data by NAF5 2008 activity classification on professional injury and illness rates from the 2014-2016 National Health Insurance Fund for Employed Workers (*"Caisse nationale de l'assurance maladie des travailleurs salaries"*). Once the individual data from the LFS has been enriched with the industry data on professional injuries and illnesses, we add information on manual intensity of the occupation coming from O*Net and on private and social rents by department[5] coming from the 2012[6] rental housing directory of social landlords (*"Repertoire des logements locatifs des bailleurs sociaux"*).

To disentangle the impact of outside employment opportunities (*i.e.* unearned income) and preferences on work conditions, we face two major difficulties. First, we need to find a good proxy for outside employment opportunities. Unfortunately, the French LFS does not contain information allowing for the precise computation of the value of leisure, home production or the amount of unemployment benefits (UB) that were previously received by currently employed workers. We propose, then, three alternative indicators that proxy outside employment opportunities. The first indicator is home ownership. According to the Household Wealth and Debt Survey 2016

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[5]The department is the geographical administrative unit immediately below region in France and it can be assimilated to a commuting zone.

[6]There is no publicly available data before this date.

of the euro area, in France home ownership accounts on average for 75% of total assets owned by French households. The second indicator considers the implicit subsidy received by tenants of social housing who benefit from a public controlled rent. This subsidy becomes particularly high in neighborhoods where private rentals are high. The third indicator is the expected social insurance benefit the employed individual will receive in case of job loss. This last indicator will be used to test the robustness of our findings.

A second major difficulty of our paper consists in controlling for differences in preferences over work conditions across nativity groups. Maestas et al. (2018) show that the willingness-to-pay for different job attributes substantially varies by race, education, gender and age. Differences in work conditions borne by different nativity groups are then likely to be partially driven by differences in preferences over work conditions explained by differences in the demographic characteristics across these nativity groups. While with data available in the French LFS it is not possible to know the individual's race, there is information on many other demographic characteristics. We propose then a counterfactual weight approach consisting of imposing for every year identical gender, age, education, civil status (*i.e.* married or not) and children composition to immigrants and natives. In this way, we eliminate the part of the immigrant-native gap in work conditions explained by differences in preferences driven by demographic composition.

The empirical analysis allows us to draw three major conclusions which are consistent with predictions from the theoretical framework. First, the average immigrant-native gap in work conditions is larger in the presence of rigid wages. Second, high unearned income is associated with better work conditions. Low unearned income workers bear on average worse work conditions whatever their nativity group. Third, demographic characteristics explain a proportion of the immigrant-native gap in work conditions through their effect on preferences. While among minimum wage earners with high unearned income, differences in the demographic composition explain a non-negligible share of the average gap in work conditions between immigrants and natives, for low unearned income people the gap persists even after controlling for demographic composition.

Our paper contributes to three streams of literature. First, there exists a large literature on labor market performance of immigrants in the host country and their impact on natives' wages or employment (see among others Card, 1990, Hunt, 1992, Katz and Murphy, 1992, Card, 2005, Algan et al., 2010, Ottaviano and Peri, 2012, D'Amuri and Peri, 2014 or Moreno-Galbis and Tritah, 2016). Less is known about the gap in work conditions borne by immigrants and natives, and particularly, about the explanatory factors responsible for this gap. As remarked above and as underlined in Orrenius and Zavodny (2009), several reasons can explain why immigrants should be willing to accept riskier jobs than their natives counterparts: differences in risk perception, social capital, lower levels of education, poor language proficiency (see Loh and Richardson, 2004 or Orrenius and Zavodny, 2009), legal status (see Passel, 2006), the healthy immigrant effect (see McDonald and Kennedy, 2004, Antecol and Bedard, 2006, Park et al., 2009 or Giuntella and Mazzona, 2015[7]) and

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[7] As remarked by Giuntella and Mazzona (2015), immigrants are positively selected on health with respect to

lower outside employment opportunities (see Nanos and Schluter, 2014, Dustmann and Gorlach, 2016 or Moreno-Galbis and Tritah, 2016) are the most common driving factors studied in the literature that push immigrants to accept more strenuous work conditions.[8] Other studies have rather underlined that employers who hire immigrants may understate workplace risks to workers either intentionally or because of communication difficulties with immigrants who speak a different language (see Bender et al., 2006).

A first contribution of this paper consists in focusing on two factors which have been mostly neglected in the literature due to the difficulties in measuring them. First, we consider unearned income. Immigrants are newcomers in the host country. As a consequence, they lack host-country-specific labor market knowledge and other, although non directly productive, valuable assets. For instance, access to the capital market or eligibility and amount of unemployment benefits received, which leads immigrants to have a lower unearned income than natives. Second, we focus on preferences over work conditions. Differences in risk perception, in the value of leisure (see Dustmann and Gorlach, 2016) and in the willingness to pay for job attributes (see Maestas et al., 2018) explain differences in preferences over work conditions across nativity groups.

Unearned income and preferences are major drivers of the reservation wage. The idea of a divergent reservation wage between natives and immigrants, leading immigrants to accept lower wages is widely supported by both theoretical and empirical evidence (see Nanos and Schluter, 2014, Gonzalez and Ortega, 2011 or Moreno-Galbis and Tritah, 2016 for empirical evidence and Ortega, 2000, Chassamboulli and Palivos, 2014, Chassamboulli and Peri, 2014 or Liu, 2010 for a theoretical approach). Moreover, years of residence in the host country are associated with a convergence in the immigrant's reservation wage with respect to natives (see Chiswick, 1978, Borjas, 1994 or Borjas, 1999 for the US, Chiswick et al., 2005 for Australia, Friedberg and Hunt, 1995 for Israel, Lam and Liu, 2002 for Hong Kong or Moreno-Galbis and Tritah, 2016 for 12 European countries).

All this literature neglects though the fact that wages do not reflect the full compensation individuals receive from working. When this literature refers to wages, it is ignoring the fact that firms propose monetary wages and work conditions as a pair, and workers may have sacrificed part of the monetary wage for better work conditions. Ignoring the role of work conditions as an adjustment variable is a major mistake particularly when considering immigrants. As shown by Peri and Sparber (2009), Peri (2012), Ottaviano et al. (2013) Peri (2016), or D'Amuri and Peri (2014) following an immigration-induced labor supply shock, natives reallocate effort towards communication and language intensive tasks, while immigrants become specialized in manual in-

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their population of origin but are characterized by lower education and less wealth than natives. This pushes them to trade their health capital for money by accepting poorer working conditions in exchange for higher wages.

[8]Health economics papers have focused on the short and long term impact of work conditions on the health status and dynamics of immigrants (see Case and Deaton, 2005, Fletcher and Sindelar, 2009 or Fletcher et al., 2011). More recently, Giuntella et al. (2019) analyzed the impact of job reallocations induced by immigrants on natives' health.

tensive tasks which tend to be concentrated at the bottom of the wage distribution.[9] This becomes an issue in the presence of a binding minimum wage. If during the bargaining process monetary wages cannot be downward adjusted, work conditions become the only adjustment variable. In this context, differential outside employment opportunities and preferences between natives and immigrants could exacerbate the work conditions gap.

Our second contribution consists in analyzing the impact of the divergent reservation wage between immigrants and natives by proposing a theoretical framework which endogenizes the determination of both monetary wages and work conditions. To our knowledge, previous works proposing theoretical frameworks consider perfectly competitive setups in which the differential specialization across jobs (and thus work conditions) between natives and immigrants is driven by differences in the utility functions (see Hamermesh, 1998 and Bond et al., 2020)[10] as well as in skill endowment (in Peri and Sparber, 2009 immigrants have a comparative advantage in manual tasks and in Bond et al., 2020 in night production). In contrast with previous papers, we consider a frictional labor market in which wages are negotiated through a Nash bargaining process. For identical labor market conditions (*i.e.* job destruction rate, labor market tightness, productivity in a given job and discount rate) our theoretical framework shows that both negotiated wages and the range of acceptable work conditions by the worker depend only on unearned income and the utility loss induced by the distance between the worker's most preferred work conditions and her actual work conditions. Differences in preferences and in unearned income between natives and immigrants influence negotiated wages as well as the immigrant-native gap in work conditions. Furthermore, the model confirms that, while flexible wages smooth the immigrant-native gap in work conditions, rigid wages deepen it.

Finally, this paper also contributes to the minimum wage literature. Several recent US studies have attempted to measure how minimum wage changes affect low-skilled immigrants (see Orrenius and Zavodny, 2008, Churchill and Sabia, 2019 or Averett et al., 2019) but these studies ignore the full cost of introducing or increasing the minimum wage since they neglect the impact on work conditions. For minimum wage earners, work conditions become the only adjustment variable, implying an increased inequality in work conditions across individuals differing in their reservation wage. Because immigrants on average have a lower reservation wage than natives, their relative work conditions should be worse when paid at the minimum wage. Our paper suggests then that policymakers should consider the loss in workplace safety (and how much that costs) when weighing the costs and benefits of raising the minimum wage.

The paper is organized as follows. The theoretical framework and its predictions are ex-

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[9]As remarked by Giuntella et al. (2019) even if we may expect a positive correlation between the manual content of a job and its risk of injury/physical burden, two jobs with similar manual content can have very different physical burdens and different injury rates.

[10]In Hamermesh (1998) natives' utility decreases with disamenities associated with a job while immigrants' utility is not influenced by them. In Bond et al. (2020) working in a nighttime job creates a larger disamenity cost for natives than for immigrants.

plained in Section 2. Section 3 describes our databases and the merging procedure between the LFS, activity branch data, O*Net and data coming from the rental housing directory. Descriptive statistics and the presentation of unearned income indicators are also provided in this section. The econometric strategy is presented in Section 4. Results are presented in Section 5. Section 6 concludes.

2   Economic rationale

2.1   Labor market flows

We consider a simplified version of the circular model proposed in Gautier and Zenou (2010). There is a continuum of risk neutral workers and firms. In both cases the mass is normalized to 1. Time is continuous and workers live forever. A proportion p of the population is composed by natives and $(1 - p)$ by immigrants. Both are assumed to be identical apart from their nativity origin and a difference in unearned income. We assume that natives have higher unearned income than immigrants, $R_N > R_I$, where N stands for natives and I for immigrants. Differences in unearned income can be justified on the grounds that immigrants may not be eligible for unemployment benefits, and their history in the host country probably differs from that of natives, which is likely to affect their unearned income (differential inheritances, health, etc). Furthermore, access to the capital market may be limited for immigrants.[11]

Following Salop (1979) and in line with the model proposed in Gautier and Zenou (2010), workers and firms' heterogeneity over work conditions is modelled by means of a circle along which workers' preferences over work conditions are assumed to be uniformly distributed over the circumference C of length 1. This is the space of possible work conditions. We denote by $0 < x_{ij} < 1/2$ the distance between a worker having the most preferred work conditions located in i and a firm proposing work conditions in j. It is assumed that workers do not change their most preferred work conditions over their lifetime.

Workers may be employed or unemployed. All unemployed workers search for a job and we assume that there is no on-the-job search. Let $u_k(i)$ be the number of type-k unemployed workers, $k = N, I$ (or equivalently the unemployment rate of type k-workers) with most preferred work conditions in i. At each moment in time, a firm can either have a filled position or an open vacancy. We denote $v(j)$ the number of vacancies (or equivalently the vacancy rate) proposing work conditions at j.

As shown in Gautier and Zenou (2010), the uniform distribution of workers over the circle implies that $u_k(i) = u_k \ \forall i \epsilon C$. In this case, there exists a stationary equilibrium with a uniform and unique distribution of vacancies at all locations $v(j) = v \ \forall j \epsilon C$.

As in the standard search-matching models, individuals choose reservation wages by com-

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[11]In the empirical analysis we will also consider the case where immigrants and natives have an identical level of unearned income.

paring the values of employment and unemployment. But here workers must also decide on the width of the range of acceptable work conditions and firms must decide which work conditions they propose given the preferences of workers over work conditions.

Search is random and the number of contacts between workers and firms is given by $M = M(u_N + u_I, v)$, which is increasing in its arguments, concave, exhibits constant returns to scale and satisfies Inada conditions. The probability of finding a job equals $m(\theta) = M/(u_N + u_I)$, where $\theta = v/(u_N + u_I)$ stands for the labor-market tightness. Evidently the probability of finding a job is increasing in θ. In contrast, the probability of filling a vacancy, $M/v = q(\theta) = m(\theta)/\theta$, is decreasing in θ. The contact rate of a vacancy with a type-k worker is then given by $q(\theta) \cdot u_k/(u_N + u_I)$.

For a worker, a match will occur if and only if the work conditions proposed by the firm enter within her acceptable range, that is:

$$Match_{u_k \to v} = m(\theta) \cdot 2\hat{x}_k$$

A match is the product of a random contact rate $m(\theta)$ and an acceptation rule $2\hat{x}_k$. All workers randomly get job contacts at the rate $m(\theta)$. Once the contact takes place, workers must decide to apply for this job or not, depending on the work conditions associated with the job with respect to the worker's most preferred work conditions. The term $\hat{x}_k$ is multiplied by 2 because each worker considers the difference in work conditions from both sides of the circle with respect to her most preferred work conditions.

Applying an analogous reasoning we define the rate at which vacancies match with a type-k worker as:

$$Match_{v \to u_k} = \frac{u_k}{u_N + u_I} \frac{m(\theta)}{\theta} \cdot 2\hat{x}_k$$

After advertising their jobs, firms are contacted by workers. They will only offer a job to type-k workers located within a distance $x < \hat{x}_k$.

Denoting e_k the employment level (or rate) of workers of type k and δ the exogenous job destruction rate, the steady state equilibrium flows for k-type workers can be written as: $\delta e_k = 2\hat{x}_k m(\theta) u_k$ Since the labor force is normalized to unity, $p = u_N + e_N$ and $(1 - p) = u_I + e_I$, we can write the equilibrium flow equations for each nativity group as follows:

$$\delta(p - u_N) = 2\hat{x}_N m(\theta) u_N \Rightarrow u_N = \frac{\delta p}{\delta + 2\hat{x}_N m(\theta)}$$

$$\delta(1 - p - u_I) = 2\hat{x}_I m(\theta) u_I \Rightarrow u_I = \frac{\delta(1 - p)}{\delta + 2\hat{x}_I m(\theta)}$$

2.2 Workers' behavior

As in Gautier and Zenou (2010), workers change jobs over their lifetime but not their most preferred work conditions location so that the difference between desired and accepted work conditions changes stochastically over time. As a result, the average difference between most preferred and actual work conditions is the same for all workers of type k over their lifetime.

An unemployed worker of type k obtains instantaneous utility equal to unearned income R_K including unemployment benefits, previous wealth, etc. Defining U_k as the steady-state expected discounted lifetime utility of an unemployed worker of type k and $E_k(x, w_k)$ as the steady state expected discounted lifetime utility of an employed worker of type k in a job implying a difference with respect to preferred work conditions equal to x and earning a wage w_k, we can define:

$$rU_k = R_k + m(\theta)\left[2\int_0^{\hat{x}_k} [E_k(x, w_k) - U_k]\right]dx \tag{1}$$

where $r\epsilon(0, 1)$ is the discount rate, and $\hat{x}_k$ is the maximum distance between the most preferred and actual work conditions a worker is willing to accept (beyond $\hat{x}_k$ all jobs will be turned down by the unemployed workers). When a worker of type k is unemployed today, her instantaneous utility equals R_k. She then meets vacancies at the rate $m(\theta)$ but only a fraction $\hat{x}_k$ of the vacancies are acceptable for the worker. When a worker accepts a job paying w_k and involving work conditions at a distance x from her most preferred work conditions, she obtains a wealth increase of $[E_k(x, w_k) - U_k]$. U_k does not depend on x because search is random so that firms cannot sort workers depending on their most preferred work conditions.

Contrary to Gautier and Zenou (2010), we assume that the individual only profits from unearned income when she is unemployed. This is easy to justify if we consider that unearned income includes unemployment benefits (which are lost when employed) or wealth such as different houses, swimming-pools or other facilities that the individual cannot actually use when she is employed. In any case, conclusions of the model are not modified when considering that unearned income also contributes to the utility of the employed. The assumption is made for notational simplicity.

The asset value for an employed worker who is employed in a job whose work conditions are at distance x from the worker's most preferred conditions equals:

$$rE_k(x, w_k) = w_k - \tau(x) - \delta(E_k(x, w_k) - U_k) \tag{2}$$

where $\tau(x)$ stands for the utility loss associated with distance between the worker's preferred work conditions and the actual conditions of the job. We assume the disutility to be linearly increasing in x, that is $\tau'(x) > 0$. The employed worker obtains an instantaneous utility $w_k - \tau(x)$ from the job but can lose her job with probability δ and experience a reduction in wealth equal to $(E_k(x, w_k) - U_k)$.

2.3 Firms' behavior

Let y be the productivity of a worker and γ denote the firms search cost per unit of time. Since we assume constant returns to scale production, profits do not depend on firm size so we can consider all vacancies to be single worker firms. The expected discounted lifetime utility of a firm with a filled job is given by:

$$rJ_k(w_k) = y - w_k - \delta(J_k - V) \tag{3}$$

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where $y - w_k$ corresponds to the instantaneous profit and $\delta(J_k - V)$ to the loss if the job is destroyed. Since productivity does not depend on the distance between the most preferred and the actual work conditions all employed workers are, in terms of productivity, identical from the point of view of the firms.

The expected discounted lifetime utility of a firm with a vacancy is given by:

$$ V = -\gamma + 2\frac{m(\theta)}{\theta}\left(\frac{u_I}{u_I + u_N}\int_0^{\hat{x}_I}(J_I - V)dx + \frac{u_N}{u_I + u_N}\int_0^{\hat{x}_N}(J_N - V)dx\right) \tag{4} $$

Every period the firm pays an advertisement cost γ. The contact with a worker takes place at rate $\frac{m(\theta)}{\theta}$ and the firm can meet an immigrant with probability $\frac{u_I}{u_I + u_N}$ or a native with probability $\frac{u_N}{u_I + u_N}$. The immigrant will accept the job if the proposed work conditions fall within the distance $\hat{x}_I$ and the native accepts the job if the distance is below $\hat{x}_N$.

2.4 The steady state equilibrium

A (steady-state) labor market equilibrium is a tuple that consists of wages, a maximum acceptable distance between most preferred and actual work conditions, unemployment levels and labor-market tightness $(w_I^*, w_N^*, \hat{x}_I^*, \hat{x}_N^*, u_I^*, u_N^*, \theta^*)$. Given the matching technology, in this equilibrium all agents (workers and firms) maximize their respective objective function. Labor market tightness is determined by a free-entry condition, wages by Nash bargaining, and maximum work conditions distance by an indifference condition between the value of unemployment and the value of employment at the maximum acceptable distance. Finally, unemployment and vacancy levels follow from equilibrium labor-market tightness and a steady-state condition on unemployment.

Labor demand

Firms open vacancies until no more profit can be obtained. At the equilibrium all rents are exhausted and the free entry condition, $V = 0$, applies. Equation (3) becomes then:

$$ J_k = \frac{y - w_k}{r + \delta} \tag{5} $$

Combining this equation with equation (4) in the presence of the free entry condition leads to:

$$ \frac{\gamma\theta(r+\delta)}{2m(\theta)} = \frac{u_I(y - w_I)\hat{x}_I + u_N(y - w_N)\hat{x}_N}{u_I + u_N} \tag{6} $$

Therefore $\frac{\partial\theta}{\partial\hat{x}_k} > 0$. If workers become less picky concerning acceptable work conditions, firms create more jobs since they have more chances to fill them.

Wage determination

Firms do not observe workers' most preferred work conditions or more precisely their x. As in Gautier and Zenou (2010), workers and firms only bargain over observable factors. Firms do not observe x but they observe $\hat{x}_k$ for $k = N, I$. As a result, in the wage bargaining, the value of employment is not given by (2) but by:

$$ rE_k^d = w_k - \delta(E_k^d - U_k^d) \tag{7} $$

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where U_k^d represents the disagreement payoff for the unemployed worker during the bargaining and is still given by (1). The match surplus of workers that is relevant for the wage bargaining is thus $(E_k^d - U_k^d)$ while that of firms equals $(J_k - V)$. The total surplus of the match is then given by: $\Omega_k = \left[E_k^d - U_k^d + J_k - V\right]$. Following the Nash bargaining process, the surplus is shared in constant proportions according to the respective bargaining powers of workers and firms. Denoting by $0 < \eta < 0$ the bargaining power of the worker, the sharing rule once we take into account the free entry condition $V = 0$, equals:

$$E_k^d - U_k^d = \eta \Omega_k \text{ and } J_k = (1 - \eta)\Omega_k \Rightarrow (1 - \eta)(E_k^d - U_k^d) = \eta J_k \tag{8}$$

From equation (1) we can easily find that $E_k^d - U_k^d = \frac{w_k - R_k}{\delta + 2m(\theta)\hat{x}_k}$. Replacing this expression and equation (5) in the Nash bargaining condition leads to:

$$w_k = \eta y \frac{(r + \delta + 2m(\theta)\hat{x}_k)}{r + \delta + \eta 2m(\theta)\hat{x}_k} + (1 - \eta)R_k \frac{(r + \delta)}{r + \delta + \eta 2m(\theta)\hat{x}_k} \tag{9}$$

where $\frac{\partial w_k}{\partial R_k} > 0$ and $\frac{\partial w_k}{\partial \hat{x}_k} > 0$.[12] The higher the unearned income, the higher the wage. Similarly, the larger the range of acceptable work conditions $\hat{x}_k$, the better the outside options and therefore the higher the bargained wages. Since θ, δ, y and r are the same for natives and immigrants, if $R_N > R_I$ natives should be able to bargain higher wages. However, if they are more picky than immigrants concerning work conditions, *i.e.* $\hat{x}_N < \hat{x}_I$, this should tend to reduce their bargained wages.

Range of acceptable work conditions

We must finally determine the maximum difference a worker is willing to accept between her most preferred work conditions and the work conditions actually proposed by the job, *i.e.* $\hat{x}_k$. Formally, $\hat{x}_k$ is implicitly defined by the differential work conditions that make the worker indifferent between being employed or remaining unemployed:

$$E_k(\hat{x}_k, w_k) = U_k \tag{10}$$

Since employment for type-k depends linearly on x we can write $\frac{1}{\hat{x}_k}\int_0^{\hat{x}_k} E_k(x, w_k)dx = \mathbb{E}_x[E_k(x, w_k)|x < \hat{x}_k] = E_k(\mathbb{E}_x(x|x < \hat{x}_k), w_k) = E_k(\hat{x}_k/2)$ where the last steps follows from $\mathbb{E}_x(x|x < \hat{x}_k) = \hat{x}_k/2$. Therefore $\int_0^{\hat{x}_k} E_k(x, w_k)dx = \hat{x}_k E_k(\hat{x}_k/2)$. The unemployment asset becomes then:

$$U_k = \frac{1}{r + 2m(\theta)\hat{x}_k}\left(R_k + 2m(\theta)\hat{x}_k E_k(\hat{x}_k/2)\right) \tag{11}$$

Evaluating the employment asset value at $\hat{x}_k/2$ leads to:

$$E_k(\hat{x}_k/2, w_k) = \frac{w_k - \tau(\hat{x}_k/2) + \delta U_k}{r + \delta} \tag{12}$$

Replacing equation (12) in equation (11), and defining $\tau(x) = \mu_k x$, we can rewrite the asset value of unemployment as a function of $\hat{x}_k$:

$$U_k = \frac{1}{r + \delta + 2m(\theta)\hat{x}_k}\left(R_k(r + \delta) + 2m(\theta)\hat{x}_k(w_k - \mu_k\hat{x}_k/2)\right) \tag{13}$$

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[12] $\frac{\partial w_k}{\partial R_k} = (1 - \eta)\frac{r + \delta}{r + \delta + \eta 2m(\theta)\hat{x}_k} > 0$ and $\frac{\partial w_k}{\partial \hat{x}_k} = \frac{2m(\theta)\eta(1 - \eta)(r + \delta)(y - R_k)}{(r + \delta + \eta 2m(\theta)\hat{x}_k)^2} > 0$.

Evaluating the asset value of employment at $\hat{x}_k$, $i.e.\ E(\hat{x}_k, w_k) = \frac{1}{r+\delta}(w_k - \mu_k\hat{x}_k + \delta U_k)$, and replacing in (10) leads to:

$$(r+\delta)E(\hat{x}_k, w_k) \quad = \quad (r+\delta)U_k \Rightarrow w_k - \mu_k\hat{x}_k = rU_k \tag{14}$$

Replacing in the previous expression equation (13) we find:

$$0 \quad = \quad \hat{x}_k^2\mu_k m(\theta) + \hat{x}_k\mu_k(r+\delta) + (r+\delta)(R_k - w_k) \tag{15}$$

The strictly positive solution of equation (15) equals:

$$\hat{x}_k = -\frac{r+\delta}{2m(\theta)} + \frac{1}{2m(\theta)}\sqrt{(r+\delta)^2 + \frac{4m(\theta)(r+\delta)(w_k - R_k)}{\mu_k}} \tag{16}$$

where $\frac{\partial\hat{x}_k}{\partial\mu_k} < 0$, $\frac{\partial\hat{x}_k}{\partial R_k} < 0$ and $\frac{\partial\hat{x}_k}{\partial w_k} > 0$.[13] The lower the disutility generated by the distance between the most preferred and actual work conditions μ_k, the larger the range of work conditions the worker is willing to accept. Similarly, the lower the level of unearned income, the larger the range of acceptable work conditions. In contrast, higher wages are associated with a larger range of acceptable work conditions. This is in line with conclusions drawn from the wage equation (9).

As shown by Gautier and Zenou (2010) a single crossing condition for equations (9) and (15) applies since at $\hat{x}_k = 0$ the concave function (9) has a higher value of w_k than the convex function (15), implying the unique pair solution $(\hat{x}_k, w_k)$ exists.

2.5 Model's prediction

According to our model, $\frac{\partial\hat{x}_k}{\partial R_k} < 0$, $\frac{\partial\hat{x}_k}{\partial\mu_k} < 0$ and $\frac{\partial\hat{x}_k}{\partial w_k} > 0$. We can also easily verify that $\frac{\partial\hat{x}_k^2}{\partial R_k\partial\mu_k} > 0$ confirming that the reduction in the range of acceptable work conditions will be more important among individuals bearing a high disutility associated with the gap between most preferred and actual work conditions. If immigrants have lower unearned income than natives, $i.e.\ R_I < R_N$, two alternative scenarios can arise depending on wage rigidity:

- Scenario 1: Flexible wages. Everything else constant, $R_I < R_N$ induces $\hat{x}_N < \hat{x}_I$. The lower range of acceptable work conditions of natives tends to reduce their wages since $\frac{\partial w_k}{\partial\hat{x}_k} > 0$, while their higher unearned income tends to push wages up, $\frac{\partial w_k}{\partial R_k} > 0$. There is a large consensus in the literature on the fact that $w_N > w_I$ (see Algan et al., 2010, Card, 2005 or Katz and Murphy, 1992) suggesting that the positive impact on natives' wages coming from $R_N > R_I$ overcomes the negative effect coming from $\hat{x}_N < \hat{x}_I$. If $w_N > w_I$ the difference between $\hat{x}_N$ and $\hat{x}_I$ should fall (since $\frac{\partial\hat{x}_k}{\partial w_k} > 0$) and therefore the average gap in actual

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[13] $\frac{\partial\hat{x}_k}{\partial\mu_k} = -\frac{(r+\delta)(w_k - R_k)}{\mu_k^2\sqrt{(r+\delta)^2 + \frac{4m(\theta)(r+\delta)(w_k - R_k)}{\mu_k}}} < 0$ as far as $w_k > R_k$ which is always the case if the worker accepts the job. Similarly $\frac{\partial\hat{x}_k}{\partial R_k} = -\frac{(r+\delta)m(\theta)}{\mu_k} \cdot \frac{1}{m(\theta)\sqrt{(r+\delta)^2 + \frac{4m(\theta)(r+\delta)(w_k - R_k)}{\mu_k}}} < 0$ and $\frac{\partial\hat{x}_k}{\partial w_k} = \frac{(r+\delta)m(\theta)}{\mu_k} \cdot \frac{1}{m(\theta)\sqrt{(r+\delta)^2 + \frac{4m(\theta)(r+\delta)(w_k - R_k)}{\mu_k}}} > 0$.

work conditions borne by natives and immigrants should be reduced too. Finally, because $\frac{\partial \hat{x}_k^2}{\partial R_k \partial \mu_k} > 0$, these conclusions are reinforced if natives experience a larger utility loss with the gap between preferred and actual work conditions.

- Scenario 2: Rigid wages. $R_I < R_N$ should induce $\hat{x}_N < \hat{x}_I$ with no smoothing effect coming from wages in this case. Differences between natives and immigrants in the range of acceptable work conditions should be enlarged with respect to the flexible wage case. The immigrant-native gap in work conditions will be also deepened if immigrants suffer from lower disutility associated with the distance between preferred and actual work conditions, since $\frac{\partial \hat{x}_k^2}{\partial R_k \partial \mu_k} > 0$.

If immigrants and natives do not differ in their level of non-earned income, *i.e.* $R_N = R_I$, predictions become:

- Scenario 3: Flexible wages. Differences between natives and immigrants in the range of acceptable work conditions induced by differences in the disutility parameter should be smoothed by wage adjustments.

- Scenario 4: Rigid wages. Differences in the disutility parameter, μ_k, are fully captured by the range of acceptable work conditions since wages cannot adjust. If $\mu_I < \mu_N$ the range of acceptable work conditions will be larger for immigrants than for natives.

  The econometric section tests these predictions.

3 Data sources, variables and descriptive statistics

3.1 Data sources and variables

Our paper combines four data sources. First, we use the statistics provided by the National Health Insurance Fund for Employed Workers ("*Caisse nationale de l'assurance maladie des travailleurs salaries*") on both professional accidents and illnesses. These statistics are available for the period 2012-2016, but it is only for 2014, 2015, 2016 that they are provided at the 5 digit NAF2008 level. This implies that for 2014-2016 we have data on professional accidents and illnesses for more than 720 activity branches (*i.e.* industries).[14] Appendix A provides more detailed information on the definition of professional accidents and illnesses. We adopt here the professional accident and illness indicators proposed by the National Health Insurance Fund:

- The "Professional Accident Frequency Rate" ($PAFR$) corresponds to the number of professional accidents by million of hours worked.

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[14]Data is available by activity branch, implying that all the workforce in the activity branch has been used to compute these statistics.

- The "Severity Rate for Temporary Disabilities" induced by professional accidents ($PATD$) is the number of temporary disability days per 1,000 hours of work;

- The "Severity Index for Permanent Disabilities" induced by professional accidents ($PAPD$) is the total rate of permanent disabilities per million hours of work, including deaths as permanent disabilities.

- The "Severity Rate for Temporary Disabilities" induced by professional illness ($PDTD$) is the number of temporary disability days per 1,000 hours of work;

- The "Severity Index for Permanent Disabilities" induced by professional illness ($PDPD$) is the total rate of permanent disabilities per million hours of work, including deaths as permanent disabilities.

Second, we combine data from the rental housing directory of social landlords ("*Repertoire des logements locatifs des bailleurs sociaux*") on the rent per square meter of social housing by department in 2012[15] with data from www.seloger.com on the rent per square meter in the private sector by department in 2012.[16] The department of residence essentially matches with the individual's commuting zone. We compute for each of the 95 departments existing in France the difference in the rent per square meter between rent-controlled public housing and private housing. This difference represents a net implicit transfer or subsidy received by tenants of rent-controlled public housing in 2012, referred to here as Moderate Rental Housing (MRH).[17]

The third data source is simply used to construct a manual task intensity index by occupation. The data results from combining O*Net and EurOccupations. The O*NET index is provided by the Department of Labor's Occupational Information Network. For the United States, the O*NET database provides a detailed description of workers, occupations or jobs. We use information about occupational requirements to summarize the specific types of tasks that may be performed within occupations. The O*NET index is compiled according to the American Standard Occupational Classification (SOC) 2010. We expect the task content of occupations in France to be similar to the U.S. content, making the O*NET classification relevant in analyzing the task content of French occupations. For our purpose, it is actually sufficient to assume that occupational rankings do not differ systematically between France and the U.S., and that an occupation ranking high in one task dimension in the U.S. also ranks high in the same dimension in France.[18]

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[15]There is no public available data before this date.

[16]Data for the private rental sector is available for 2019. Applying backwards the yearly Reference Index of Rents provided by the National Statistical Institute (INSEE), we compute the rent per square meter in the private sector for each department in 2012.

[17]*Habitation à loyer modéré (HLM)*. They correspond to rent-controlled public housing in France. They represent 16% of all housing in France. There are approximately four million such residences, housing an estimated 10 million people. The standard of living in the HLM housing projects is often the lowest in the country.

[18]In the extended version of their paper, Laffineur and Mouhoud (2015) use the German "Qualification and Career

We first match the French PCS-ESE occupational classification with the EurOccupations database, which covers 1,594 occupational titles within the ISCO-08 classification.[19] Then, we use a mapping table from the ISCO-08 to the SOC-2010 classification to link the PCS-ESE occupational classification with SOC-2010 corresponding to O*Net. We have 244 occupations for which we have a perfect match.

O*NET provides information on work activities, very close to the notion of task, ranking 41 different tasks from 0 to 100 and indicating the degree (or point along a continuum) to which a particular descriptor is required or needed in the occupation. Because the O*NET database does not provide information on workers, we are unable to monitor the evolution of task requirements within a given occupation[20] but any change in the task content of an occupation will affect both immigrants and natives, implying that this limitation should not impede our analysis.

We apply the strategy of Autor et al. (2008) and Autor and Dorn (2013) to the 41 tasks in O*NET, and define for each of the 244 occupations an aggregate (time-invariant) manual task intensity index resulting from the addition of the intensity index associated with the following individual tasks: (*i*) Handling and Moving Objects; (*ii*) Operating Vehicles, Mechanized Devices, or Equipment; (*iii*) Performing General Physical Activities; (*iv*) Inspecting Equipment, Structures, or Material; (*v*) Repairing and Maintaining Mechanical Equipment; (*vi*) Monitoring Processes, Materials, or Surroundings; (*vii*) Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment; (*viii*) Repairing and Maintaining Electronic Equipment.

The fourth data source is the French Labor Force Survey (LFS), which was established as an annual survey in 1982. Redesigned in 2003, it is now a continuous survey providing quarterly data. Participation is compulsory and it covers private households in mainland France. All individuals in the household older than 15 are surveyed. The LFS provides detailed information on individual characteristics of the respondent.[21] Immigrants are defined as people born abroad.

Survey" to build occupational task indices that they apply to the French professional classification of occupations. They take as a starting point the estimations of Tidjens et al. (2011) who, working with 8 European countries (including Germany and France), find that occupational tasks performed in these countries are similar. Laffineur and Mouhoud (2015) show that differences between estimates using the German "Qualification and Career Survey" and those using O*NET cannot be attributed to differences in the task content of occupations between the U.S. and Germany (and thus France). They use estimates from the O*NET index since the O*NET provides more details on task intensity over a wider range of tasks.

[19]The EurOccupations project was aimed at building a publicly available database containing the most common occupations in a multi-country data collection. The database includes a source list of 1,594 distinct occupational titles within the ISCO-08 classification, country-specific translations and a search tree to navigate through the database. It also provides a mapping table between the EurOccupations classification and the ISCO-08 classification, as well as a French translation of these occupations. We are very grateful to Professor Kea Tijdens for providing this database.

[20]This is done in Atalay et al. (2018). Using the text from job ads, the authors construct a data set for occupational content from 1960 to 2000.

[21]The quarterly sample is divided into 13 weeks. From a theoretical point of view, the sampling method consists of a stratification of mainland France into 189 strata (21 French regions × 9 types of urban unit) and a first stage sampling of areas in each stratum (with different probabilities, average sampling rate = 1/600). Areas contain about 20 dwellings and among them only primary residences are surveyed. Each area is surveyed over 6 consecutive

For our purpose, the main topics covered by the LFS concern employment, place of residence, wages, activity classification[22], four digit occupation classification, status in employment and demographic characteristics (such as education/qualification, civil status, age, gender, etc). There is not much information on employers since the worker is simply asked to indicate the approximative size of the workforce in her plant or establishment (the questionnaire proposes several size-intervals).

The LFS is a rotating panel of housing units (not individuals). A panel of individuals constructed from this survey would suffer from several drawbacks. First of all, it would represent a relatively short time: an individual is interviewed quarterly and a maximum of six times (ultimately, the longest panels cover 15 months). Second, these panels are composed by nature of individuals who have not moved during the period. This last phenomenon is likely to seriously bias estimates.[23] Finally, and particularly important for my paper, some demographic characteristics, such as the parent's place of birth, are only provided the first time the individual is interviewed and all questions concerning revenues (such as wage or unemployment benefits) are only raised the first and the last time the individual is interviewed. Moreover, weights provided by the French National Statistical Institute (INSEE) ensure the national representativity of the sample of individuals covered by the LFS when treating them in cross section but not in longitudinal analysis, where there are important biases due to the endogenous attrition. In this paper we exploit the LFS in cross section using weights provided by the survey to ensure the national representativity of the sample.

We focus on work conditions of employed individuals. For the period 2003-2012 our sample involves 1,428,114 employed natives and 173,395 employed immigrants. Our choice implies eliminating from the sample both individuals with an unearned income so high that they never accept a job and the least successful individuals, that is those that have not found a job (even if their unearned income is low). The potential impact of this selection bias on the immigrant-native gap on work conditions is in principle undetermined. Moreover, by considering only employed people we are also partially eliminating return migration issues of older migrants, also know as "Salmon Bias", which have been proved relevant in countries like the US (see Palloni and Arias, 2004).

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quarters. Every quarter, the sample contains 6 sub-samples: 1/6 of the sample is surveyed for the first time, 1/6 is surveyed for the second time, ..., 1/6 is surveyed for the 6th (and last) time. The collection method has always been a face-to-face interview. However, since 2003, a telephone interview has been employed for intermediate surveys (2nd to 5th).

[22]The LFS 2003-2008 uses the 2003 NAF classification while the LFS 2009-2012 uses the NAF 2008 classification. We use tables provided by the National Statistical Institute (INSEE) to convert one classification into the other, in order to obtain consistent NAF series.

[23]This problem is similar to an endogenous effect of attrition in panels: the longitudinal non-response linked to moves is likely to be correlated with transitions in the labor market (geographically immobile people could be the least mobile people in the labor market). Moreover, it is not possible to differentiate between individuals who move during the study period and people who simply stop responding. It would be necessary to use census data to support the counting of the number of deaths and the number of exits from the area during the period.

We combine information on these data sources. Using the statistics from the National Health Insurance Fund for Employed Workers on professional accidents and illnesses, we compute for each of the more than 720 activity branches the average value of the injury and illness indicators ($PAFR$, $PATD$, $PAPD$, $PDTD$, $PDPD$) for the period 2014-2016. We merge this data with the LFS using the 5 digit NAF 2008 classification. Therefore, for every year from 2003 to 2012, every individual in the LFS is imputed the average injury and disease indicator (computed for the period 2014-2016) corresponding to the 5-digit activity branch in which the individual is employed.[24] Combining O*Net and EurOccupations we enrich the LFS by imputing at the 4-digit occupation level a manual task intensity index. Since there is only a perfect match for 244 occupations, the manual intensity index is only available for 967,197 natives and 126,810 immigrants. Finally, we merge department statistics on the implicit subsidy received by tenants in MRH with our enriched individual LFS 2003-2012 database. The LFS contains information on the department of residence of the individual as well as information on whether the individual is a tenant of a private housing unit or MRH.

All in all we have the individual data LFS 2003-2012 enriched with average values of the professional injury and disease indicators, the manual task intensity index and with data on the implicit subsidy received by tenants in MRH by department.

3.2 Reservation wage: preferences and outside employment opportunities

The worker's reservation wage results from both individual's preferences and individual's outside employment opportunities. Concerning preferences, Maestas et al. (2018) shows that the willingness to pay for job's attributes (*i.e.* work conditions) varies with demographic characteristics such as race, gender or age. We exploit this finding to propose a counterfactual weight approach, traditionally used for income analysis (see Moreno-Galbis et al., 2019 or Lemieux, 2002), in which every year immigrants are imposed to have the same composition in terms of gender, age, education, civil status (*i.e.* married or not) and children as natives. Preferences over work conditions driven by these demographic characteristics should no longer differ between both nativity groups once we apply counterfactual weights. The technical details of the counterfactual weight construction procedure are explained in Appendix B.

We proxy outside employment opportunities by unearned income. While employment provides earned income, unemployed individuals can only benefit from unearned income. Therefore, the higher the level of unearned income, the higher the available outside employment opportunities which should push-up the reservation wage (*i.e.* wealthier people are more picky when accepting jobs). The paper considers three alternative measures of unearned income. The first indicator is home ownership. According to the Household Wealth and Debt Survey 2016 of the euro area,

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[24]Note that this 5-digit activity definition is even more precise than the 4-digit occupation classification. When working with the 5-digit industry classification we have more than 720 categories, while for the 4-digit occupation there are less than 500 categories.

in France home ownership rate of a principal residence is 58.7%. Home ownership accounts on average for 60% of total assets owned by French households but it reaches 75% of total assets when we exclude the top 10% of richest households.[25] Home ownership stands then for a good proxy of unearned income (*i.e.* wealth). The LFS 2003-2012 does not provide information on the value of the housing unit but only on whether the individual is a home owner or not. We consider that home owners have high unearned income.

The second indicator is the implicit subsidy received by tenants of social housing and is inspired by the work of Chapelle (2018). For every department in France we have computed the implicit transfer/subsidy received by tenants of MRH. We classify departments located in the fifth quintile of the subsidy distribution as highly subsidized departments. This information is only available for 2012 but it is matched every year with individual data from the LFS. We find that 38% of people in the whole unweighted LFS sample live in departments located at the fifth quintile of the subsidy distribution. When considering only tenants (of both private housing and MRH), 44% of people of the unweighted sample live in highly subsidized departments.

For every year we consider that tenants of MRH living in departments that were classified as highly subsidized in 2012 are recipients of a high implicit subsidy. Our indicator presents two limitations: (*i*) we assume that departments located in the fifth quintile of the implicit subsidy distribution in 2012 were also located in this quintile during the period 2003-2012. Being a highly subsidized department is then a time invariant department characteristic; (*ii*) since we do not have information on the town/neighborhood of residence of individuals in the LFS, our indicator implicitly assumes that all tenants of social housing within a department receive the same subsidy. This may not be accurate since within departments there may be differences in the rent of private housing across neighborhoods. The LFS provides though information on whether the social tenant resides in a sensitive urban area (SUA) or not. This information is extremely useful. In France, during the 1950s, thousands of social housing units were built outside big cities. These neighborhoods were uniquely composed of social units and quickly became SUAs with high unemployment and criminality rates. Tenants in SUAs are not likely to be aware of the implicit subsidy received from the fact of living in an MRH since private rentals in these neighborhoods do not exist. In contrast, tenants of MRH outside SUAs are more likely to be fully aware about the implicit subsidy they are receiving since they can compare the rent they pay with that paid by tenants in private housing units nearby. We then use as a second proxy for high unearned income the fact of living in an MRH outside an SUA in a department located at the top quintile of the implicit subsidy distribution in France.

The third indicator of unearned income is the expected social insurance benefit, and we use it for robustness purposes. OECD statistics provide yearly information for the period 2003-2012 on the average net replacement ratio (including housing benefits) during the 12 first months of unemployment for both minimum wage earners and people earning the average wage. Using

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[25]Mortgage represents on average 26.6% of total assets of home owners.

information on the real hourly wage, we then compute for every employed worker the expected social insurance benefit by multiplying the net replacement ratio times the hourly wage. This indicator of unearned income presents though three limitations. First, it is proportional to the individual's earned income (*i.e.* wage), which imposes both measures to have a perfect positive correlation (which is not always the case). Second, for the sample of minimum wage earners it adopts the same value for all the individuals. This prevents us from exploiting the heterogeneity of unearned income among minimum wage earners to estimate its impact on work conditions. To circumvent this issue, when using the expected social insurance benefit as an unearned income indicator, we will consider the sample of people earning less than 1,1 times the minimum wage. The problem is that wages will no longer be completely rigid for this sample.

Finally, the expected social insurance benefit is a continuous variable defined as a proportion of the workers' wage. Splitting the sample between high unearned income workers and low unearned income workers, as we do with the two other unearned income indicators, is equivalent to splitting the sample between workers earning a high wage and workers earning a low wage. We will not be able to analyze then the immigrant-native gap on work conditions over the sample of low wage workers with high unearned income.

Table A.1 in Appendix A estimates the probability of being a home owner in columns (1)-(3) and the probability of living in an MRH outside an SUA in a department located at the top quintile of the implicit subsidy distribution in columns (4)-(6). Columns (7)-(9) consider as a dependent variable the expected social insurance benefit. In line with the literature, immigrants have on average lower unearned income (see Nanos and Schluter (2014), Gonzalez and Ortega (2011), Ortega (2000) or Moreno-Galbis and Tritah (2016)). Unsurprisingly, we find that with years of residence in the host country, the likelihood of becoming a home owner, receiving a high implicit subsidy or a high expected social insurance benefit increases, suggesting a convergence in outside employment opportunities, and thus in reservation wages.[26]

While capturing different dimensions of unearned income, the three indicators proposed in this paper behave very similarly as other previous indicators proposed by the economic literature to proxy the reservation wage, such as the relative take-up rate of the UB by immigrants with respect to natives (see Giuletti et al., 2011 or Moreno-Galbis and Tritah, 2016). Immigrants have on average lower unearned income than natives, but with years of residence in the host country (*i.e.* with an increased degree of integration) their unearned income improves. This integration process also explains the improvement in unearned income experienced by EU and second generation immigrants (see Table A.1 in Appendix A).

Evidently a major criticism that can be directed at our indicators of unearned income is that they are not exogenous to labor market outcomes. We are unable to determine causality, since we do not know if the individual is in a job with bad working conditions because of low unearned

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[26]This is in line with Borjas (1999), Chiswick et al. (2005), Friedberg and Hunt (1995), Lam and Liu (2002) and Moreno-Galbis and Tritah (2016).

income or if the individual has low unearned income because of past bad quality jobs. This endogeneity problem is though partially addressed in several ways. First, we impute to individuals included in the LFS sample 2003-2012 work conditions computed at the 5-digit industry level for the period 2014-2016. While we expect that work conditions by industry in the period 2014-2016 would correlated with work conditions in the same industry in the period 2003-2012, they should be more exogenous to the individuals' level of unearned income during the period 2003-2012.

Second, the implicit subsidy distribution among departments is computed for 2012 and it is assumed to be constant during the whole period 2003-2012. For the period 2003-2012, tenants of MRH outside SUAs are considered to have a high-non earned income if they reside in a department located in the top of the implicit subsidy distribution computed for 2012. The work conditions of these tenants are computed for the period 2014-2016. The simultaneity problem between the individuals' work conditions and the unearned income indicator should again be partially smoothed by the data construction method.

Finally, while we are aware that our unearned income indicators are still likely to be partially endogenous to labor market outcomes, these endogeneity issues should apply to both natives and immigrants. The focus of the paper is on the work conditions gap between both groups, *i.e.* relative work conditions of immigrants with respect to natives, rather than on absolute work conditions borne by each group. Evidently, endogeneity issues could asymmetrically concern immigrants and natives. However, since work conditions computed at the 5-digit industry level during the period 2014-2016 are imputed every year from 2003 to 2012 for all workers (natives and immigrants) employed in the same industry, potential asymmetries in endogeneity issues between natives and immigrants should be of lesser concern.

3.3 Descriptive statistics

Table A.2 from Appendix A.2 summarizes the main unweighted LFS sample characteristics distinguishing between natives and immigrants. The share of women is lower among immigrants. Immigrants are also slightly older than natives[27] and are more often married. There are three times more immigrants than natives living in sensitive urban areas, and there are twice as many immigrants living in moderate rental housing than natives. Moreover, immigrants are less often home owners. The proportion of immigrants without any diploma is twice the proportion of natives, and they are on average less educated for all diploma levels below tertiary education.

Immigrants are more often allocated into occupations that are more manual intensive. They are also more likely than natives to work in activities with a high frequency of professional injuries (indicator $PAFR$) and a large number of temporary and permanent disabilities ($PATD$ and $PAPD$, respectively) associated with professional accidents. Conversely, immigrants are less

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[27]Note that our sample only covers employed individuals. Immigrants may face difficulties in finding jobs in their early age, when they have low professional experience in the host country. This may explain why they are on average slightly older than natives.

concerned by temporary and permanent disabilities resulting from professional diseases ($PDTD$ and $PDPD$, respectively).[28]

4   Econometric strategy

We can interpret the dependent variable Y_{it} as the deviation between the actual work conditions borne by individual i in year t ($PAFR$, $PATD$, $PAPD$, $PDTD$, $PDPD$) and the most preferred conditions of the individual, which are set to zero. Y_{it} would define then a range of work conditions that are acceptable to the worker. Considering minimum wage earners (wages are rigid at $w_N = w_I = w_{min}$) we can define a reduced form of equation (16) in which the individual's range of acceptable work conditions is a function of the local labor market conditions (represented in equation (16) by θ and δ), as well as unearned income and the disutility parameter μ_k which, in line with Maestas et al. (2018), is assumed to be at least partially driven by demographic characteristics:

$$Y_{it} = f(\theta, \delta) + g(R_i, \mu_i, w_{min})$$
$$Y_{it} = \alpha_M IMM_{it} + \alpha_I High\ unearned\ income_{it} + \alpha_x X_{it} + \alpha_F F_{it} + \alpha_{dt} + \alpha_{NAF} + \epsilon_{it} \quad (17)$$

Our unit of observation is the individual to whom work conditions have been imputed depending on the activity branch where the individual is employed. Whereas our indicators of working conditions ($PAFR$, $PATD$, $PAPD$, $PDTD$, $PDPD$) are constant along time within the 720 activity branches, the sample of individuals to whom these indicators are imputed changes from one year to another, implying a change in population composition within each activity branch. Computing work conditions over the period 2014-2016 ensures that the dependent variable is at least partially exogenous with respect to economic and technological shocks that may be pushing people towards some activity branches during the 2003-2012 period.

Labor market conditions are captured at both the department level and the industry level. We introduce interacted year and department fixed effects ($\alpha_{dt} = \alpha_t \cdot \alpha_d$) so as to control for yearly shocks that may have affected work conditions, for systematic differences across departments (due to differences in productive structures across geographical areas) and for department specific shocks. Consistently with Moreno-Galbis and Tritah (2016), we can reasonably assume that workers' reallocation across widely defined industries (at the two digit level) is costly. Therefore, we introduce 2-digit industry fixed effects, α_{NAF}, so as to limit the sorting of workers across these widely defined industries. However, workers are allowed to sort within industries. Our relationship is then estimated by exploiting heterogeneity across workers allocated among 5-digit industries but within a given 2-digit industry at the department-year level.

We cannot control for the number of potential employers within each 5-digit industry, but we do control for the size of the establishment or plant where the individual works (less than

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[28]More detailed descriptive statistics by years of residence, education, gender and place of residence are provided in the online Appendix.

10 employees, between 10 and 50 employees, between 50 and 200 employees and more than 200 employees), whether the individual has a permanent contract or not[29] and by the manual task intensity of the individual's occupation. These control variables are included in the vector F_{it}.

The dummy variable IMM_{it} equals unity if individual i in period t is foreign born. The variable $High\ unearned\ income_{it}$ equals unity if the individual is a home owner or the individual resides in an MRH outside an SUA in a department located within the fifth quintile of the implicit subsidy distribution. In equation (17), the variable $High\ unearned\ income_{it}$ captures how people with high unearned income differ in their work conditions with respect to low unearned income natives. We provide in the appendix some robustness tests, in which we consider as an indicator of unearned income the expected social insurance benefit.

In all scenarios we introduce the vector of control variables X_{it} including gender, age, age squared, civil status, children, diploma level (6 diploma levels going from no diploma to tertiary education). We also control for years of residence in the host country (less than 10 years, between 10 and 20 years, between 20 and 30 years and more than 30 years).

We implement weighted OLS regressions with robust standard errors clustered at the department-year level. In the benchmark estimation we use weights directly provided by the LFS. When controlling for differences in preferences over work conditions driven by demographic characteristics, we use counterfactual weights so that, for every year, immigrants have the same composition as natives in terms of gender, age, education, civil status and children. Note though that the counterfactual approach does not control for other hidden characteristics of immigrants that can certainly influence their preferences over work conditions.

Finally, we replicate our estimation over the sample of EU and second generation immigrants. We expect the work conditions of EU and second generation immigrants to be closer to natives' work conditions than those of non-EU and first generation immigrants, respectively, due to convergence in outside employment opportunities and preferences.

5   Estimation results

Results for scenarios 1 and 3 are presented in Appendix C. We focus here on scenarios 2 and 4, where wages are rigid (*i.e.* we focus on minimum wage earners) and work conditions become the unique adjustment variable. In this context, we can isolate more easily the impact of unearned income and preferences over work conditions.

5.1   Scenario 2: $R_I < R_N$ and rigid wages

There are three main predictions of the model that we are going to test sequentially in the context of rigid wages: (*i*) people bearing a large disutility from the difference between actual and most

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[29]Work condition indicators (injuries, professional diseases and disabilities) are likely to be affected by the temporal or permanent nature of the contract.

preferred work conditions should benefit from better work conditions since their range of acceptable work conditions is reduced, that is $\frac{\partial \hat{x}_k}{\partial \mu_k} < 0$; (ii) individuals with low unearned income are willing to accept a larger range of work conditions than individuals with high unearned income, $\frac{\partial \hat{x}_k}{\partial R_k} < 0$; (iii) the impact on the range of acceptable work conditions coming from unearned income is reinforced by the utility loss induced by the distance between actual and most preferred work conditions $\frac{\partial \hat{x}_k^2}{\partial R_k \partial \mu_k} > 0$.

For scenario 2, our sample contains 118,977 minimum wage earners, among which 57,778 are tenants. Among home owners the share of minimum wage earners equals 5.94% for immigrants and 5.69% for natives, while among tenants these shares equal 11.37% and 10.02%, respectively. Finally, for minimum wage earners we have information on the manual task intensity index for 90,237 individuals among which 44,093 are tenants.

We start estimating a modified version of equation (17) where we eliminate the variable *High unearned income*. Columns (1)-(5) in Table C.4 Appendix C.2 display raw correlations when regressing work conditions indicators over the dummy immigrant without any control. As we can see, being a foreign born positively correlates with more frequent disabilities associated with professional accidents while it negatively correlates with disabilities associated with diseases. Observable and unobservable characteristics may be behind these significant differences between nativity groups. Columns (6)-(10) control then for gender, age, marital status, children, education, years of residence, size of the establishment, manual intensity of the occupation, type of contract. They also control for interacted year-department fixed effects and 2-digit industry fixed effects. The coefficient associated with the variable immigrant becomes positive and significant for all work conditions indicators. Manual intensity is also systematically associated with worse work conditions while years of residence in the host country induce a significant improvement in work conditions (note that the excluded category is more than 30 years of residence).

According to a first prediction of the model, the lower the disutility associated with the distance between most preferred and actual work conditions the worse the average work conditions borne by the individual, $\frac{\partial \hat{x}_k}{\partial \mu_k} < 0$. Our guess is that differences in the demographic composition of immigrants with respect to natives result in immigrants having a lower disutility parameter, $\mu_I < \mu_N$, which could be one of the factors behind the significant differences in average work conditions across nativity groups. By imposing immigrants to have the same gender, age, education, marital status and children composition as natives, we seek to reduce differences in the unobserved disutility parameter μ_I by eliminating differences in preferences explained by demographic characteristics.[30]

Table 1 replicates the same regression as in columns (6)-(10) of Table C.4 but applying counterfactual weights. Comparing results from columns (6)-(10) in Table C.4 with results in Table 1, we realize that all coefficients of the variable "Immigrant" are reduced, but they remain not significantly different with respect to those in columns (6)-(10) in Table C.4. Besides being foreign

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[30]We still introduce demographic characteristics as control variables, since the fact that immigrants are imposed to have the same demographic composition as natives does not imply that returns to demographic characteristics are the same across individuals.

Table 1: Immigrants and professional accident/illness : counterfactual weights in the presence of rigid wages. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators				
	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)
Immigrant	3.278***	0.338***	2.506***	0.0867***	0.136***
	(0.677)	(0.0507)	(0.422)	(0.0161)	(0.0294)
Controls	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes
Weight	Counterfactual	Counterfactual	Counterfactual	Counterfactual	Counterfactual
Observations	90,226	90,226	90,226	90,226	90,226
R-squared	0.559	0.533	0.652	0.393	0.420

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at department-year level and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country ($<$10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

born, there may be very different observable and unobservable characteristics that may influence the allocation of the worker across activities. While imposing immigrants to have the same age, gender, education, civil status and children composition as natives tends to reduce the gap in work conditions across nativity groups, other factors seem to be driving the differentiated allocation of immigrants and natives across activities. According to our theoretical framework, differences in outside employment opportunities (captured by unearned income) are a major determinant of the range of acceptable work conditions and thus of allocation choices. More precisely, higher unearned income should be associated with improved work conditions since the range of acceptable work conditions decreases with unearned income, $\frac{\partial \hat{x}_k}{\partial R_k} < 0$.

Table 2: Immigrants and professional accident/illness : the effect of unearned income. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					Panel A: Home ownership					
High unearned income	-0.754***	-0.0755***	-0.169*	-0.0253***	-0.0579***	-0.727***	-0.0714***	-0.399***	-0.0166***	-0.0285***
	(0.137)	(0.00897)	(0.0913)	(0.00513)	(0.0115)	(0.0996)	(0.00706)	(0.0642)	(0.00324)	(0.00598)
Controls	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
NAF2 FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Department × Year FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	117,473	117,473	117,473	117,473	117,473	90,237	90,237	90,237	90,237	90,237
R-squared	0.001	0.001	0.000	0.000	0.000	0.560	0.534	0.653	0.394	0.421

	Dependent variable: professional accident/illness indicators									
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					Panel B: Tenants in MRH outside SUAs in highly subsidized departments					
High unearned income	-1.002***	-0.0508***	-1.003***	-0.0559***	-0.109***	-0.233	-0.0186	-0.129	-0.0111	-0.0214
	(0.257)	(0.0181)	(0.203)	(0.00887)	(0.0203)	(0.219)	(0.0161)	(0.131)	(0.00685)	(0.0141)
Controls	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
NAF2 FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Department × Year FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	57,095	57,095	57,095	57,095	57,095	44,093	44,093	44,093	44,093	44,093
R-squared	0.000	0.000	0.001	0.001	0.001	0.557	0.539	0.662	0.394	0.409

Table 2 regresses individuals' work conditions over the high unearned income indicators without introducing any controls in columns (1)-(5) and including demographic and contextual controls in columns (6)-(10). Panel A uses home ownership as a high unearned income indicator and Panel B the fact of living in an MRH outside an SUA in a highly subsidized department.

Panels A and B reveal that, in the absence of controls, high unearned income is associated with significantly improved work conditions whatever the considered indicator. Once we have controlled for observable individual characteristics and for unobservable contextual characteristics (*i.e.* year, department, industry), high unearned income continues to be significantly correlated with improved work conditions when we consider home ownership as a high unearned income indicator. When the considered indicator is the implicit subsidy received by tenants in social housing, the correlation remains negative but it is not statistically significant. In line with the model's predictions, our estimations confirm the existence of a negative correlation between unearned income and work conditions individuals are willing to accept, *i.e.* $\frac{\partial \hat{x}_k}{\partial R_k} < 0$.

Table C.5 in Appendix C.2 proposes, as a robustness test, to consider the expected social insurance benefit as an indicator of unearned income. Results are consistent with the two other indicators. Work conditions are improved with the expected social insurance benefit.

The last prediction of the model is that $\frac{\partial \hat{x}_k^2}{\partial R_k \partial \mu_k} > 0$. In practice this implies that within a group of individuals with the same level of unearned income, the range of acceptable work conditions may differ across them depending on the disutility parameter. To compare work conditions of individuals with similar levels of non-earned income, we enrich equation (17) by introducing an immigrant specific effect for unearned income:

$$
\begin{aligned}
Y_{it} &= \alpha_M IMM_{it} + \alpha_I High\ unearned\ income_{it} \\
&+ \alpha_{MI} IMM_{it} \cdot High\ unearned\ income_{it} + \alpha_x X_{it} + \alpha_F F_{it} + \alpha_{dt} + \alpha_{NAF} + \epsilon_{it} \quad (18)
\end{aligned}
$$

High unearned income$_{it}$ measures work conditions of high unearned income natives with respect to low unearned income natives. The interacted variable $IMM_{it} \cdot High\ unearned\ income_{it}$ measures if work conditions of high unearned income immigrants differ with respect to those of high unearned income natives which are themselves measured with respect to low unearned income natives. The dummy IMM_{it} captures if, among low unearned income workers, immigrants display worse work conditions than natives. The current specification takes as reference low unearned income natives and allows us to measure whether individuals from different nativity groups but with similar unearned income display different work conditions with respect to the reference native.

Results from estimating equation (18) are presented in Tables 3 and 4. Columns (1)-(5) consider home ownership as a high unearned income indicator, while columns (6)-(10) consider the fact of being a tenant of an MRH outside an SUA in a highly subsidized department as an indicator of high unearned income. Table 3 displays results when using the standard weights provided by the LFS while Table 4 applies counterfactual weights.

We start the analysis with Table 3. As shown by the estimated coefficients of the variable *High unearned income*$_{it}$, natives with high unearned income display on average better work con-

ditions than natives with low unearned income. This holds for the two considered indicators of high unearned income, even if when using the implicit subsidy received by tenants of an MRH outside an SUA in highly subsidized departments there is a loss of precision in the estimations. Immigrants being home owners are significantly less allocated than natives into activities with a high rate of permanent disabilities (following an accident of professional disease) and into activities with high temporal disabilities due to professional illness. The allocation across activities of immigrants being tenants of MRH outside SUAs in highly subsidized departments does not significantly differ with respect to that of natives with similar level of unearned income. Finally, low unearned income immigrants (*i.e.* coefficient of the variable *Immigrant*) display systematically worse work conditions indicators than low unearned income natives.

Table 3: Immigrants and professional accident/illness : the role of unearned income by nativity in the presence of rigid wages. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	3.771***	0.375***	2.643***	0.0964***	0.154***	4.016***	0.389***	2.954***	0.105***	0.169***
	(0.596)	(0.0456)	(0.391)	(0.0151)	(0.0279)	(0.825)	(0.0632)	(0.533)	(0.0219)	(0.0396)
High unearned income	-0.652***	-0.0655***	-0.330***	-0.0137***	-0.0229***	-0.527*	-0.0346	-0.192	-0.0122	-0.0214
	(0.106)	(0.00746)	(0.0686)	(0.00347)	(0.00646)	(0.309)	(0.0229)	(0.208)	(0.0103)	(0.0201)
Immigrant · High unearned income	-0.319	-0.0181	-0.362**	-0.0160**	-0.0352***	0.105	0.00303	-0.240	-0.00540	-0.0136
	(0.264)	(0.0205)	(0.181)	(0.00705)	(0.0136)	(0.422)	(0.0327)	(0.270)	(0.0121)	(0.0235)
Years of residence <10 years	1.577***	0.160***	1.148***	0.0351***	0.0487***	1.595***	0.153***	1.167***	0.0358***	0.0565***
	(0.307)	(0.0237)	(0.210)	(0.00797)	(0.0146)	(0.400)	(0.0306)	(0.264)	(0.0104)	(0.0196)
Years of residence 10-20 years	0.539*	0.0642***	0.369*	0.0184**	0.0253*	0.958**	0.0912***	0.564**	0.0309***	0.0468**
	(0.309)	(0.0234)	(0.200)	(0.00794)	(0.0140)	(0.411)	(0.0315)	(0.260)	(0.0119)	(0.0205)
Years of residence 20-30 years	0.922***	0.0770***	0.481**	0.0187**	0.0296*	1.200***	0.106***	0.789***	0.0299***	0.0491**
	(0.312)	(0.0241)	(0.200)	(0.00827)	(0.0153)	(0.432)	(0.0333)	(0.274)	(0.0108)	(0.0206)
Manual intensity	0.109***	0.0101***	0.132***	0.00297***	0.00706***	0.137***	0.0120***	0.149***	0.00303***	0.00750***
	(0.00991)	(0.000780)	(0.00681)	(0.000337)	(0.000682)	(0.0150)	(0.00116)	(0.00979)	(0.000497)	(0.000992)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	90,237	90,237	90,237	90,237	90,237	44,093	44,093	44,093	44,093	44,093
R-squared	0.560	0.535	0.653	0.395	0.421	0.557	0.540	0.662	0.394	0.409

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Columns (1)-(5) consider all minimum wage earners while columns (6)-(10) consider only minimum wage earners who are tenants of private or social housing units. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

The results tend to confirm findings from our theoretical model. In the presence of rigid wages, higher unearned income reduces the range of acceptable work conditions and promotes better work conditions. Moreover, following our theoretical setup, the work conditions gap among

workers with similar levels of unearned income must come from differences in the disutility parameter μ_k. Table 4 then tests if $\frac{\partial \hat{x}_k^2}{\partial R_k \partial \mu_k} > 0$, that is if the impact on the range of acceptable work conditions coming from unearned income is reinforced by the disutility parameter. More precisely, in Table 4 we seek to reduce differences in the disutility parameter between immigrants and natives by controlling for demographic composition effects. We estimate equation (18) with counterfactual weights.

Results in Table 4 reveal that people with high unearned income continue to benefit from better work conditions than low unearned income natives, and that these improved work conditions do not significantly differ between natives and immigrants with high unearned income. This is in contrast with findings from Table 3, where immigrants being home owners benefitted from better work conditions. Results from Table 4 imply that the immigrant-native work conditions gap among home owners was actually driven by demographic composition effects. Once we have controlled for differences in preferences over work conditions driven by demographic characteristics, immigrants and natives with high unearned income no longer significantly differ in their work conditions (and both are actually better off with respect to low unearned income natives).

For low unearned income workers, differences in the demographic characteristics across nativity groups do not seem to be a major driving factor of the work conditions gap since the coefficient of the variable *Immigrant* is reduced in Table 4 but remains non statistically different from those of Table 3. This suggests that there may be other factors that drive their preferences over work conditions. Finally, in line with previous findings, manual intensity is associated with worse work conditions while years of residence in the host country tend to improve them.

Table C.6 in Appendix C.2 replicates the same estimation as in Tables 3-4 using the expected social insurance benefit as an unearned income indicator over the sample of workers earning less than 1,1 times the minimum wage. In line with our findings, the higher the expected social insurance benefit the better the work conditions. This positive effect is, however, significantly reduced when considering immigrants.[31]

Tables C.1, C.2 and C.3 in Appendix C.1 consider Scenario 1 and replicate the previous estimations over a sample of workers earning more than the minimum wage. Results are in line with our main conclusions. However, given that Tables C.1-C.3 consider a different sample of workers with respect to Tables 3-4 (and C.6), we are unable to compare the coefficients and draw any conclusion on whether the immigrant-native gap in work conditions is worsened among

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[31]This result is explained by the fact that in Table C.6 the unearned income variable is no longer a dummy allowing us to distinguish between the immigrant-native gap in work conditions for high- and low- unearned income workers. The expected social insurance benefit is a continuous variable so that the coefficient of the interacted variable "*Immigrant · Expected social insurance benefit*" simply reveals that on average immigrants bear worse work conditions. But this average effect may actually be driven by immigrants paid at the minimum wage, who have the lowest expected social insurance benefit. Interestingly, the individual coefficient of the variable "*Immigrant*" looses its significance which tends to confirm that the low unearned income effect that was captured by this variable for the two other unearned income indicators is now captured by the interaction between "*Immigrant · Expected social insurance benefit*".

Table 4: Immigrants and professional accident/illness : the role of unearned income by nativity in the presence of rigid wages. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	3.009***	0.313***	2.338***	0.0799***	0.124***	3.119***	0.323***	2.804***	0.0908***	0.162***
	(0.679)	(0.0507)	(0.426)	(0.0162)	(0.0296)	(0.945)	(0.0707)	(0.605)	(0.0242)	(0.0453)
High unearned income	-0.665***	-0.0665***	-0.336***	-0.0140***	-0.0235***	-0.566*	-0.0375	-0.233	-0.0143	-0.0245
	(0.106)	(0.00744)	(0.0688)	(0.00347)	(0.00646)	(0.311)	(0.0229)	(0.212)	(0.0102)	(0.0201)
Img. · High unearned income	-0.157	-0.00230	-0.265	-0.00945	-0.0214	0.227	0.0184	-0.0367	0.00661	0.00400
	(0.304)	(0.0225)	(0.202)	(0.00772)	(0.0145)	(0.461)	(0.0361)	(0.318)	(0.0129)	(0.0258)
Years of residence <10 years	1.417***	0.151***	1.044***	0.0347***	0.0486***	1.303***	0.140***	1.072***	0.0386***	0.0662***
	(0.344)	(0.0259)	(0.223)	(0.00813)	(0.0151)	(0.439)	(0.0333)	(0.289)	(0.0116)	(0.0221)
Years of residence 10-20 years	0.287	0.0410	0.345	0.0147	0.0170	0.891*	0.0794**	0.709**	0.0284**	0.0455*
	(0.357)	(0.0263)	(0.225)	(0.00905)	(0.0159)	(0.483)	(0.0364)	(0.300)	(0.0130)	(0.0238)
Years of residence 20-30 years	0.548	0.0537**	0.430**	0.0117	0.0173	0.724	0.0797**	0.868***	0.0260**	0.0562**
	(0.338)	(0.0254)	(0.215)	(0.00887)	(0.0161)	(0.495)	(0.0370)	(0.322)	(0.0126)	(0.0245)
Manual intensity	0.105***	0.00972***	0.131***	0.00293***	0.00698***	0.128***	0.0112***	0.146***	0.00291***	0.00724***
	(0.0101)	(0.000790)	(0.00695)	(0.000341)	(0.000692)	(0.0153)	(0.00117)	(0.0101)	(0.000508)	(0.00102)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	90,226	90,226	90,226	90,226	90,226	44,091	44,091	44,091	44,091	44,091
R-squared	0.560	0.534	0.652	0.393	0.420	0.558	0.538	0.658	0.390	0.405

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants. Columns (1)-(5) consider all minimum wage earners while columns (6)-(10) consider only minimum wage earners who are tenants of private or social housing units. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

minimum wage earners. To test this prediction of our model, we estimate equation (18) over the pooled sample of workers introducing interacted terms with the fact of being a minimum wage earner. Estimation results are reported in Table 5 below. We still find that low unearned income immigrants bear significantly worse work conditions than natives. Moreover, in line with the model's predictions, the situation is worse if we consider low unearned income immigrants earning the minimum wage. These workers bear significantly more professional accidents, the temporal disabilities due to accidents and disabilities due to professional illnesses, than low unearned income immigrants paid above the minimum wage.

Again, Table 5 reveals that high unearned income natives benefit from better work conditions than low unearned income natives. Furthermore, work conditions of immigrants with high unearned income do not significantly differ from those of natives with the same level of income.

Table 5: Immigrants and professional accident/illness : the role of the minimum wage as driver of work conditions. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	3.398***	0.324***	2.706***	0.0736***	0.117***	3.989***	0.370***	3.161***	0.0915***	0.156***
	(0.362)	(0.0266)	(0.255)	(0.00951)	(0.0199)	(0.549)	(0.0408)	(0.365)	(0.0141)	(0.0286)
Immigrant · Minimum wage earner	0.686***	0.0498***	0.161	0.00796*	0.0190**	0.387**	0.0276*	0.0150	-0.00118	4.32e-05
	(0.165)	(0.0132)	(0.131)	(0.00414)	(0.00812)	(0.197)	(0.0150)	(0.148)	(0.00500)	(0.00945)
High unearned income	-0.557***	-0.0528***	-0.327***	-0.0127***	-0.0236***	-0.266	-0.0244**	-0.0645	-0.0289***	-0.0579***
	(0.0532)	(0.00363)	(0.0364)	(0.00179)	(0.00398)	(0.173)	(0.0123)	(0.128)	(0.00603)	(0.0128)
Img. · High unearned income	-0.180	-0.0165	-0.211*	-0.00294	-0.00675	-0.0629	-0.00693	-0.283	0.0108	0.0208
	(0.156)	(0.0112)	(0.116)	(0.00443)	(0.00924)	(0.281)	(0.0218)	(0.195)	(0.00815)	(0.0167)
Img. · High u. income · Min. wage	-0.344	-0.0225	-0.252	-0.0106	-0.0246*	0.464	0.0416	0.382	0.0247**	0.0442**
	(0.288)	(0.0217)	(0.203)	(0.00760)	(0.0141)	(0.405)	(0.0291)	(0.263)	(0.0106)	(0.0203)
Years of residence <10 years	1.610***	0.147***	1.176***	0.0329***	0.0484***	1.955***	0.177***	1.391***	0.0502***	0.0852***
	(0.181)	(0.0136)	(0.138)	(0.00492)	(0.00999)	(0.262)	(0.0197)	(0.187)	(0.00698)	(0.0142)
Years of residence 10-20 years	0.839***	0.0757***	0.616***	0.0184***	0.0285***	1.280***	0.107***	0.847***	0.0256***	0.0414***
	(0.201)	(0.0143)	(0.139)	(0.00517)	(0.0107)	(0.277)	(0.0206)	(0.187)	(0.00709)	(0.0142)
Years of residence 20-30 years	0.650***	0.0623***	0.441***	0.00314	-0.00188	0.692**	0.0686***	0.596***	0.00960	0.0181
	(0.189)	(0.0140)	(0.130)	(0.00447)	(0.00948)	(0.297)	(0.0218)	(0.192)	(0.00725)	(0.0151)
Manual intensity	0.0565***	0.00497***	0.0552***	0.00194***	0.00473***	0.0765***	0.00684***	0.0863***	0.00179***	0.00422***
	(0.00427)	(0.000313)	(0.00293)	(0.000165)	(0.000366)	(0.00778)	(0.000572)	(0.00530)	(0.000263)	(0.000569)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No	No	No
Department FE	No	No	No	No	No	No	No	No	No	No
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	1,082,441	1,082,441	1,082,441	1,082,441	1,082,441	398,372	398,372	398,372	398,372	398,372
R-squared	0.570	0.555	0.635	0.390	0.377	0.571	0.559	0.642	0.379	0.378

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants. Columns (1)-(5) consider all minimum wage earners while columns (6)-(10) consider only minimum wage earners who are tenants of private or social housing units. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

This conclusion does not apply for high unearned income immigrants paid at the minimum wage who display significantly more permanent and temporal disabilities following a professional illness when considering, as an indicator of unearned income, the implicit subsidy received by tenants of MRH outside SUAs.[32]

All in all, in line with theoretical predictions for Scenario 2 we conclude first, that rigid wages

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[32]Table C.7 in Appendix C.2 replicates the same analysis using the expected social insurance benefits as an indicator of unearned income. In this case, immigrants paid at the minimum wage display much worse work conditions than other immigrants. The coefficients are so high that they more than compensate for the improvement in work conditions induced by better expected social insurance benefit (*i.e.* coefficient of the interacted term between "Immigrant", "Minimum wage earner" and "Expected social insurance benefit").

are associated with a larger work conditions gap between natives and immigrants, since wages do not adjust. Second, high unearned income promotes better work conditions. Third, differences in the demographic composition seem to influence the immigrant-native gap in work conditions of high unearned income workers when compared to low unearned income natives. However, among low unearned income individuals the immigrant-native gap persists even once we have controlled for demographic composition effects. Other factors clearly drive preferences over work conditions for these workers.

Scenario 2 has allowed us to test $\frac{\partial \hat{x}_k}{\partial R_k} < 0$, $\frac{\partial \hat{x}_k}{\partial \mu_k} < 0$ and $\frac{\partial \hat{x}_k^2}{\partial R_k \partial \mu_k} > 0$. Note though that in equation (18), the reference individual is a low unearned income native, so coefficients must be interpreted with respect to this individual. We cannot draw conclusions on the immigrant-native work conditions gap among high unearned income individuals. This is done in Scenario 4, where we impose all individuals in the sample to have the same R_k.

5.2 Scenario 4: $R_I = R_N$ and rigid wages

Scenario 4 considers a sample composed by minimum wage earners from different nativity groups but having similar level of unearned income, *i.e.* $R_I = R_N$. We estimate again equation (17) but do not introduce the control variable *High unearned income* since our sample is exclusively composed by high unearned income individuals. Now the reference individual will be a high unearned income native, and the coefficient of the variable *Immigrant* captures the immigrant-native gap in work conditions among high unearned income individuals.[33]

According to our theoretical framework, the immigrant-native gap in work conditions among minimum wage earners having the same unearned income, should be driven by differences in preferences over work conditions. In Table 6 we apply a weighted OLS estimation where we use standard weights provided by the LFS. Table 7 replicates these estimations using counterfactual weights so as to impose immigrants to have the same demographic composition as natives every year. For both tables, columns (1)-(5) consider the sample of minimum wage earners who are home owners while in columns (6)-(10) they are tenants living in MRH outside SUAs in departments located within the fifth quintile of the implicit subsidy distribution.

Table 6 reveals that, among home owners, immigrants display significantly worse work conditions whatever the indicator we consider. In contrast, when considering tenants of MRH outside SUAs in highly subsidized departments, the allocation of immigrants does not differ with respect to that of natives in what concerns permanent disabilities (due to accidents or illness). The range of acceptable work conditions for high unearned income immigrants is then larger than for natives. According to our model, this finding must be explained by the fact that $\mu_I < \mu_N$ since both nativity groups have the same R_k in this sample.

Table 7 displays the results when we apply our counterfactual weight approach. In this case,

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[33]For the reasons already explained in section 3, we cannot provide robustness tests using the expected social insurance benefit for scenarios 3 and 4.

Table 6: High unearned income immigrants and professional accident/illness : standard weights in the presence of rigid wages. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	3.011***	0.315***	2.180***	0.0606**	0.0976*	3.869*	0.371**	1.807	0.102**	0.142
	(1.072)	(0.0801)	(0.698)	(0.0298)	(0.0527)	(1.999)	(0.153)	(1.192)	(0.0453)	(0.0895)
Years of residence <10 years	1.849***	0.187***	1.483***	0.0447***	0.0665**	2.141**	0.204***	1.148*	0.0572**	0.0961**
	(0.620)	(0.0468)	(0.424)	(0.0173)	(0.0297)	(0.913)	(0.0714)	(0.620)	(0.0227)	(0.0443)
Years of residence 10-20 years	-0.311	-0.00373	0.0794	-0.0121	-0.0201	0.740	0.0749	0.0524	0.0218	0.0230
	(0.582)	(0.0427)	(0.369)	(0.0161)	(0.0272)	(0.928)	(0.0694)	(0.560)	(0.0206)	(0.0404)
Years of residence 20-30 years	0.644	0.0408	0.125	0.00687	0.00984	0.705	0.0680	0.273	0.0183	0.0163
	(0.500)	(0.0385)	(0.327)	(0.0144)	(0.0272)	(0.938)	(0.0705)	(0.519)	(0.0225)	(0.0433)
Manual intensity	0.0694***	0.00695***	0.110***	0.00264***	0.00635***	0.121***	0.0115***	0.145***	0.00188	0.00588
	(0.0126)	(0.000908)	(0.00946)	(0.000453)	(0.000924)	(0.0370)	(0.00292)	(0.0253)	(0.00186)	(0.00383)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	42,455	42,455	42,455	42,455	42,455	5,259	5,259	5,259	5,259	5,259
R-squared	0.579	0.550	0.660	0.415	0.451	0.557	0.530	0.637	0.427	0.472

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

immigrants and natives no longer differ in the frequency of professional accidents. Among home owners, immigrants and natives do not differ in the temporal and permanent disabilities following a professional illness.

Tables C.8-C.9 in Appendix C.3 replicate the same estimation over the sample of workers earning above the minimum wage. Again, comparability with results in Tables 6-7 remains impossible due to the fact that we are considering different samples. As before, we propose to consider the pooled sample of high unearned income workers and replicate the former estimations introducing an interaction term between the fact of being a foreign born and being a minimum wage earner. This allows us to estimate if, among high unearned income immigrants, those who earn the minimum wage display significantly different work conditions with respect to other immigrants (earning above the minimum wage).

Estimation results using the weights provided by the LFS are displayed in Table C.10 in Appendix C.4. Among high unearned income immigrants those earning the minimum wage bear worse work conditions. Table 8 replicates the estimation controlling for differences in preferences

Table 7: High unearned income immigrants and professional accident/illness :counterfactual weights in the presence of rigid wages. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	1.545	0.217**	1.676**	0.0307	0.0290	3.148	0.307*	2.002*	0.109**	0.175*
	(1.258)	(0.0913)	(0.836)	(0.0344)	(0.0602)	(2.113)	(0.159)	(1.197)	(0.0513)	(0.0994)
Years of residence <10 years	1.401*	0.162***	1.490***	0.0397**	0.0582*	1.938*	0.191**	1.248*	0.0735**	0.140**
	(0.752)	(0.0547)	(0.535)	(0.0180)	(0.0330)	(1.104)	(0.0879)	(0.733)	(0.0316)	(0.0633)
Years of residence 10-20 years	-0.791	-0.0412	-0.0110	-0.0183	-0.0421	0.465	0.0420	0.0697	0.0216	0.0265
	(0.668)	(0.0472)	(0.413)	(0.0202)	(0.0327)	(1.040)	(0.0779)	(0.645)	(0.0229)	(0.0441)
Years of residence 20-30 years	-0.155	-0.00905	-0.285	-0.0157	-0.0390	0.344	0.0357	0.326	0.0191	0.0236
	(0.585)	(0.0436)	(0.407)	(0.0170)	(0.0295)	(0.983)	(0.0739)	(0.604)	(0.0253)	(0.0484)
Manual intensity	0.0632***	0.00645***	0.108***	0.00254***	0.00621***	0.102***	0.0105***	0.135***	0.00174	0.00579
	(0.0129)	(0.000927)	(0.00956)	(0.000461)	(0.000932)	(0.0381)	(0.00292)	(0.0249)	(0.00186)	(0.00384)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterfactual	Counterf.	Counterf.	Counterf.	Counterf.
Observations	42,446	42,446	42,446	42,446	42,446	5,258	5,258	5,258	5,258	5,258
R-squared	0.579	0.551	0.662	0.415	0.453	0.562	0.532	0.632	0.429	0.470

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at department-year level and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

over work conditions driven by demographic characteristics. In this case, we find that the allocation across activities of immigrants being home owners and earning the minimum wage does not significantly differ with respect to their peers earning more than the minimum wage. In contrast, when considering the implicit subsidy as an indicator of unearned income, immigrants earning the minimum wage bear significantly worse work conditions than their peers earning above the minimum wage (and thus worse work conditions than high unearned income natives) for four out of five of the work condition indicators we consider.

All in all, we conclude from Scenario 4 that, even among high unearned income workers, immigrants still bear significantly worse work conditions. In line with conclusions drawn from Tables 3-4, part of the gap is driven by differences in preferences. When we try to reduce differences in the disutility parameters μ_k by imposing equal demographic composition across nativity groups, immigrants and natives no longer differ in the frequency of accidents and, for home owners, in disabilities associated with professional diseases. Persistent differences in some work conditions indicators, suggest that foreign born workers may have unobserved characteristics driving preferences over work conditions. Finally, rigid wages still tend to increase the immigrant-native gap in work conditions.

Table 8: High unearned income immigrants and professional accident/illness : the role of the minimum wage as driver of work conditions Counterfactual weights. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	1.814***	0.201***	1.858***	0.0257	0.0288	3.788***	0.360***	2.794***	0.0832***	0.158***
	(0.554)	(0.0389)	(0.423)	(0.0159)	(0.0331)	(1.310)	(0.0994)	(0.847)	(0.0281)	(0.0549)
Immigrant ·Min. wage earner	0.296	0.0261	-0.179	-0.00481	-0.00905	0.709**	0.0633**	0.304	0.0182**	0.0329*
	(0.250)	(0.0181)	(0.164)	(0.00702)	(0.0123)	(0.350)	(0.0258)	(0.218)	(0.00911)	(0.0183)
Years of residence <10 years	0.790**	0.0771***	0.724***	0.00679	0.00122	2.437***	0.214***	1.556***	0.0424**	0.0788**
	(0.309)	(0.0226)	(0.240)	(0.00898)	(0.0181)	(0.725)	(0.0568)	(0.479)	(0.0174)	(0.0365)
Years of residence 10-20 years	0.138	0.0281	0.391*	0.00533	0.00764	1.142*	0.103**	0.694*	0.0186	0.0366
	(0.313)	(0.0216)	(0.232)	(0.00895)	(0.0180)	(0.618)	(0.0446)	(0.395)	(0.0121)	(0.0235)
Years of residence 20-30 years	0.521*	0.0546***	0.354	-0.0117*	-0.0354**	0.160	0.0324	0.389	0.0129	0.0321
	(0.288)	(0.0204)	(0.217)	(0.00701)	(0.0149)	(0.582)	(0.0444)	(0.394)	(0.0152)	(0.0291)
Manual intensity	0.0385***	0.00332***	0.0343***	0.00182***	0.00467***	0.0548***	0.00587***	0.0837***	0.00152**	0.00360***
	(0.00491)	(0.000347)	(0.00343)	(0.000216)	(0.000486)	(0.0177)	(0.00130)	(0.0114)	(0.000595)	(0.00134)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	651,420	651,420	651,420	651,420	651,420	51,884	51,884	51,884	51,884	51,884
R-squared	0.574	0.558	0.634	0.403	0.382	0.557	0.539	0.615	0.382	0.423

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at department-year level and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

5.3 A case study: EU and 2nd generation immigrants

Foreign born workers are not homogeneous. In this section we focus on two particular cases: EU immigrants and second generation immigrants. EU immigrants have lower migration costs than non-EU immigrants and may more freely move back and forth to their home countries. Table A.1 reveals that EU immigrants have a significantly higher probability of being home owners than non-EU immigrants (but lower probability than natives). They also have a higher expected social insurance benefit (still lower than natives). In contrast, they have a lower probability than non EU-immigrants to live in an MRH outside an SUA in a highly subsidized department.

Similarities in living and working conditions across EU countries are likely to induce similar risk perceptions and preferences over work conditions between natives and EU immigrants. Improved levels of unearned income with respect to non-EU immigrants, together with closer risk perception and preferences over work conditions with respect to natives should lead to a reduction in the work conditions gap between natives and EU immigrants.

Results for EU-immigrants earning the minimum wage are displayed in Tables 9 and 10. The

variable "EU-immigrant" results from interacting the fact of being foreign born and being born in an EU-15 country. Therefore the coefficient should be interpreted with respect to "Immigrant". Table 9 considers all minimum wage earners (rigid wages), while Table 10 considers minimum wage earners with high unearned income. Table 9 reveals that low unearned income EU-immigrants are allocated into activities with a high rate of professional accidents and the associated temporal disabilities significantly less often than non-EU immigrants, confirming that EU immigrants seek better work conditions. High unearned income natives bear better work conditions than their low unearned income peers. Moreover, the allocation across activities of both non-EU and EU immigrants with high unearned income does not significantly differ from that of natives with high unearned income.

Table 10 focuses on minimum wage earners being home owners and tenants in an MRH outside an SUA located in highly subsidized departments. EU-immigrants are allocated significantly less often than non-EU immigrants into activities with temporal disabilities due to professional accidents and permanent disabilities following professional illness (all other coefficients are also negative but not statistically significant).

Findings from Tables 9 and 10 tend to support the idea that risk perception and preferences over work conditions of EU immigrants are closer to those of natives, which pushes them towards activities displaying better work conditions indicators than non-EU immigrants.

On the other hand we consider second generation immigrants, that is native born workers with foreign born parents. As shown by the literature (see Borjas (1999), Chiswick et al. (2005), Friedberg and Hunt (1995), Lam and Liu (2002) or Moreno-Galbis and Tritah (2016)), with years of residence in the host country immigrants acquire better language skills, develop professional networks, become eligible for unemployment benefits, etc.; this promotes a progressive convergence in their outside employment opportunities with respect to that of natives (see coefficient estimates of *Years of residence* in Table A.1). Furthermore, we can also think that with years of residence in the host country, immigrants' risk perception and preferences over job attributes are likely to become more similar to that of natives. Both should promote convergence in the range of acceptable work conditions between natives and immigrants.

In this section, we proxy these "long-term immigrants" by second generation immigrants. As remarked by Alesina et al. (2015), second generation immigrants have been exposed to the same external environment (schools, socio-economic environment, etc) as natives. They are thus likely to have a risk perception close to that of natives. Moreover, as shown by Table A.1, even if their unearned income is still lower than that of natives, it is higher than that of foreign born workers. Finally, contrary to their parents, second generation immigrants did not choose to move to France, they were simply born there (no self-selection issues).

Tables 11 and 12 provide results for second generation immigrants in the presence of rigid wages. The variable "second generation" results from interacting the fact of being born in France (*i.e.* being a native) and having parents that are foreign born. Therefore the coefficient should be

Table 9: EU-immigrants and professional accident/illness: the role of unearned income in the presence of a minimum wage. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	5.005***	0.457***	3.253***	0.0997***	0.157***	5.833***	0.497***	3.565***	0.117***	0.187***
	(0.770)	(0.0592)	(0.509)	(0.0212)	(0.0396)	(1.084)	(0.0841)	(0.724)	(0.0295)	(0.0551)
High unearned income	-0.662***	-0.0644***	-0.280***	-0.0187***	-0.0335***	-0.186	-0.0209	-0.283	-0.00871	-0.0125
	(0.139)	(0.00971)	(0.0917)	(0.00466)	(0.00854)	(0.406)	(0.0302)	(0.281)	(0.0136)	(0.0262)
Immigrant·High unearned income	-0.531	-0.0351	-0.471	-0.00474	-0.0114	0.469	0.0364	-0.0152	0.00618	0.00238
	(0.461)	(0.0352)	(0.296)	(0.0127)	(0.0239)	(0.592)	(0.0477)	(0.392)	(0.0173)	(0.0338)
EU-immigrant	-0.924**	-0.113***	0.0244	-0.0178	0.00343	-0.0424	-0.0344	0.325	0.00572	0.0335
	(0.425)	(0.0332)	(0.285)	(0.0110)	(0.0203)	(0.496)	(0.0375)	(0.358)	(0.0137)	(0.0255)
EU-immigrant · High unearned income	0.286	0.0466	-0.332	0.00252	-0.0403	-0.221	-0.0646	-0.748	-0.0316	-0.0739
	(0.737)	(0.0569)	(0.475)	(0.0193)	(0.0354)	(1.382)	(0.110)	(0.911)	(0.0360)	(0.0693)
Years of residence <10 years	2.142***	0.191***	1.445***	0.0349***	0.0530**	2.262***	0.189***	1.337***	0.0368***	0.0576**
	(0.416)	(0.0314)	(0.281)	(0.0112)	(0.0208)	(0.523)	(0.0395)	(0.359)	(0.0141)	(0.0280)
Years of residence 10-20 years	0.903**	0.0794**	0.544**	0.0209*	0.0261	1.642***	0.126***	0.763**	0.0386**	0.0553*
	(0.455)	(0.0340)	(0.276)	(0.0119)	(0.0214)	(0.579)	(0.0447)	(0.353)	(0.0167)	(0.0295)
Years of residence 20-30 years	1.410***	0.105***	0.725***	0.0182	0.0305	2.217***	0.167***	1.198***	0.0385***	0.0654**
	(0.400)	(0.0312)	(0.260)	(0.0114)	(0.0209)	(0.559)	(0.0432)	(0.377)	(0.0140)	(0.0275)
Manual intensity	0.127***	0.0115***	0.142***	0.00313***	0.00712***	0.164***	0.0142***	0.162***	0.00370***	0.00882***
	(0.0133)	(0.00102)	(0.00882)	(0.000445)	(0.000912)	(0.0202)	(0.00152)	(0.0123)	(0.000751)	(0.00153)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,054	46,054	46,054	46,054	46,054	22,659	22,659	22,659	22,659	22,659
R-squared	0.568	0.544	0.661	0.406	0.436	0.567	0.551	0.670	0.397	0.406

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Columns (1)-(5) consider all minimum wage earners while columns (6)-(10) consider only minimum wage earners who are tenants of private or social housing units. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

interpreted with respect to natives. Table 11 considers all minimum wage earners (rigid wages), while Table 12 considers minimum wage earners with high non-earned income.

Consistent with previous findings, when considering all minimum wage earners (Table 11), immigrants are significantly more allocated than low unearned income natives into activities with a higher frequency of professional accidents and disabilities associated with both professional accidents and diseases. In contrast, the allocation of second generation immigrants with low unearned income across activities does not arise as significantly different from that of low unearned income natives (they only display a slightly higher rate of temporal disabilities following a professional accident), implying that second generation immigrants benefit from better work conditions than the first generation of immigrants.

In line with previous findings high unearned income natives benefit from better work con-

Table 10: EU-immigrants and professional accident/illness: high non-earned income individuals earning the minimum wage). LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator:					Indicator: Tenants in MRH outside SUAs				
	Home ownership					in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	3.898***	0.393***	2.460**	0.0824*	0.123	5.778**	0.445**	2.455*	0.142***	0.218**
	(1.502)	(0.110)	(0.957)	(0.0446)	(0.0767)	(2.278)	(0.178)	(1.474)	(0.0510)	(0.107)
EU-Immigrant	-0.897	-0.0807*	-0.393	-0.0284	-0.0571*	0.0809	-0.0671	-0.241	-0.0135	-0.0397
	(0.587)	(0.0447)	(0.375)	(0.0180)	(0.0321)	(1.311)	(0.104)	(0.857)	(0.0348)	(0.0743)
Years of residence <10 years	2.844***	0.250***	1.924***	0.0460	0.0698	2.603**	0.215**	1.385*	0.0736**	0.139**
	(0.958)	(0.0697)	(0.618)	(0.0287)	(0.0486)	(1.178)	(0.0921)	(0.807)	(0.0287)	(0.0566)
Years of residence 10-20 years	0.0875	0.0242	0.111	-0.00308	-0.0137	1.201	0.0523	-0.0944	0.0273	0.0273
	(0.856)	(0.0605)	(0.534)	(0.0234)	(0.0411)	(1.062)	(0.0825)	(0.707)	(0.0244)	(0.0489)
Years of residence 20-30 years	0.464	0.0368	0.0970	0.00315	0.00240	1.952*	0.129	0.771	0.0326	0.0431
	(0.672)	(0.0513)	(0.421)	(0.0214)	(0.0379)	(1.157)	(0.0908)	(0.712)	(0.0265)	(0.0517)
Manual intensity	0.0732***	0.00720***	0.112***	0.00215***	0.00490***	0.144***	0.0134***	0.160***	0.00310	0.00748
	(0.0167)	(0.00123)	(0.0131)	(0.000510)	(0.000979)	(0.0500)	(0.00408)	(0.0366)	(0.00293)	(0.00605)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,525	21,525	21,525	21,525	21,525	2,724	2,724	2,724	2,724	2,724
R-squared	0.596	0.567	0.678	0.454	0.511	0.581	0.553	0.658	0.433	0.469

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Columns (1)-(5) consider minimum wage earners who are home owners while columns (6)-(10) consider only minimum wage earners who are tenants in MRH outside SUAs in highly subsidized departments. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

ditions than their low unearned income peers. Furthermore, work conditions of high unearned income natives with foreign parents (*i.e.* second generation immigrants) do not significantly differ with respect to those high unearned income natives with native born parents. Again, these results tend to support the idea of a convergence in preferences and outside employment opportunities with time spent in the host country, which promotes also a convergence in the range of acceptable work conditions between natives and second generation immigrants.

Table 12 considers only minimum wage earners who are home owners (columns (1)-(5)) and tenants in MRH outside SUAs located in highly subsidized departments (columns (6)-(10)). Estimations reveal that work conditions borne by second generation immigrants with high unearned income are not significantly different with respect to those of high unearned income natives, while first generation immigrants with high unearned income continue to display on average worse work conditions than natives.

Tables C.11 and C.12 in Appendix C.5 consider the pooled sample of workers and test

Table 11: 2nd generation immigrants and professional accident/illness: the role of unearned income in the presence of a minimum wage. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	4.843***	0.465***	3.210***	0.101***	0.161***	5.773***	0.520***	3.734***	0.111***	0.184***
	(0.828)	(0.0635)	(0.541)	(0.0223)	(0.0416)	(1.149)	(0.0887)	(0.756)	(0.0310)	(0.0592)
High unearned income	-0.636***	-0.0626***	-0.270***	-0.0189***	-0.0359***	-0.110	-0.0176	-0.314	-0.0123	-0.0206
	(0.149)	(0.0103)	(0.0984)	(0.00505)	(0.00954)	(0.453)	(0.0334)	(0.298)	(0.0142)	(0.0274)
Immigrant·High unearned income	-0.602	-0.0319	-0.487*	-0.0102	-0.0270	0.271	0.0280	-0.0601	0.0152	0.0113
	(0.407)	(0.0307)	(0.264)	(0.0109)	(0.0209)	(0.617)	(0.0499)	(0.389)	(0.0179)	(0.0366)
2nd generation	0.465	0.0488*	0.281	-0.00334	-0.0104	0.292	0.0250	0.115	-0.00926	-0.0174
	(0.350)	(0.0261)	(0.228)	(0.0120)	(0.0241)	(0.420)	(0.0298)	(0.268)	(0.0146)	(0.0299)
2nd generation · High unearned income	-0.811	-0.0583	-0.620*	-0.00182	0.00981	0.119	0.0239	0.149	0.000403	-0.00491
	(0.538)	(0.0391)	(0.355)	(0.0162)	(0.0316)	(0.816)	(0.0621)	(0.563)	(0.0235)	(0.0474)
Years of residence <10 years	2.207***	0.208***	1.415***	0.0425***	0.0610***	2.305***	0.206***	1.370***	0.0421***	0.0645**
	(0.426)	(0.0324)	(0.291)	(0.0112)	(0.0211)	(0.538)	(0.0408)	(0.371)	(0.0151)	(0.0300)
Years of residence 10-20 years	0.828*	0.0887**	0.530*	0.0214*	0.0255	1.570**	0.141***	0.873**	0.0344**	0.0509
	(0.487)	(0.0368)	(0.296)	(0.0125)	(0.0228)	(0.609)	(0.0475)	(0.364)	(0.0167)	(0.0314)
Years of residence 20-30 years	1.382***	0.116***	0.704**	0.0194*	0.0304	2.101***	0.172***	1.239***	0.0368**	0.0621**
	(0.429)	(0.0335)	(0.279)	(0.0112)	(0.0216)	(0.599)	(0.0463)	(0.401)	(0.0149)	(0.0293)
Manual intensity	0.124***	0.0113***	0.141***	0.00300***	0.00685***	0.161***	0.0139***	0.161***	0.00333***	0.00802***
	(0.0140)	(0.00108)	(0.00936)	(0.000440)	(0.000906)	(0.0215)	(0.00162)	(0.0130)	(0.000718)	(0.00147)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	42,030	42,030	42,030	42,030	42,030	20,679	20,679	20,679	20,679	20,679
R-squared	0.570	0.543	0.662	0.399	0.429	0.569	0.551	0.670	0.388	0.398

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Columns (1)-(5) consider all minimum wage earners while columns (6)-(10) consider only minimum wage earners who are tenants of private or social housing units. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

whether EU immigrants and second generation immigrants earning the minimum wage bear worse work conditions than non-EU immigrants and natives earning the minimum wage. Estimation results in Table C.11 reveal that when paid at the minimum wage, work conditions of immigrants deteriorate. Only those born in an EU-15 country benefit from a significantly lower rate of temporal disabilities due to accidents (coefficients for the other work conditions indicators being negative but not statistically significant). Among EU immigrants earning the minimum wage, those who are home owners bear significantly less professional accidents and permanent disabilities due to both accidents and professional illnesses. Findings from Table C.11 confirm then that (i) minimum wage earners bear worse conditions than workers earning above the minimum wage; (ii) high unearned income promotes improvement in work conditions; (iii) among minimum wage earners,

Table 12: 2nd generation immigrants and professional accident/illness: high unearned income individuals earning the minimum wage. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	3.660**	0.392***	2.343**	0.0982**	0.148*	5.423**	0.477**	2.805*	0.155***	0.241**
	(1.581)	(0.117)	(1.016)	(0.0464)	(0.0820)	(2.334)	(0.184)	(1.501)	(0.0535)	(0.112)
2nd generation	-0.302	0.00440	-0.191	-0.00854	-0.00562	0.274	0.0343	0.0279	-0.00695	-0.0174
	(0.369)	(0.0280)	(0.274)	(0.0114)	(0.0210)	(0.773)	(0.0613)	(0.546)	(0.0185)	(0.0349)
Years of residence <10 years	2.805***	0.250***	1.801***	0.0646**	0.0986**	2.704**	0.250***	1.373*	0.0835***	0.159***
	(0.981)	(0.0723)	(0.648)	(0.0290)	(0.0488)	(1.119)	(0.0887)	(0.764)	(0.0296)	(0.0579)
Years of residence 10-20 years	0.108	0.0347	0.128	0.0119	0.0103	0.941	0.0633	0.200	0.0285	0.0307
	(0.910)	(0.0650)	(0.579)	(0.0246)	(0.0438)	(1.088)	(0.0854)	(0.706)	(0.0254)	(0.0489)
Years of residence 20-30 years	0.588	0.0547	0.124	0.00997	0.0137	1.826	0.135	0.829	0.0279	0.0356
	(0.712)	(0.0551)	(0.451)	(0.0198)	(0.0383)	(1.212)	(0.0955)	(0.752)	(0.0275)	(0.0518)
Manual intensity	0.0752***	0.00737***	0.113***	0.00234***	0.00524***	0.141**	0.0127***	0.156***	0.000165	0.000979
	(0.0178)	(0.00130)	(0.0139)	(0.000540)	(0.00104)	(0.0584)	(0.00479)	(0.0386)	(0.00162)	(0.00331)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	19,647	19,647	19,647	19,647	19,647	2,487	2,487	2,487	2,487	2,487
R-squared	0.596	0.565	0.679	0.451	0.510	0.583	0.551	0.651	0.439	0.471

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Columns (1)-(5) consider minimum wage earners who are home owners while columns (6)-(10) consider only minimum wage earners who are tenants in MRH outside SUAs in highly subsidized departments. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

EU immigrants benefit from better work conditions compared to non-EU immigrants.[34]

Results in Table C.12 reveal that low unearned income natives with two foreign born parents (*i.e.* second generation immigrants) bear significantly more professional accidents and the associated temporal disabilities than low unearned income natives with both parents born in France. The allocation across activities of low unearned income second generation immigrants earning the minimum wage does not significantly differ from that of low unearned income second generation immigrants earning above the minimum wage. In contrast, work conditions improve for minimum wage second generation immigrants with a high unearned income (*i.e.* home owners).[35]

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[34]These conclusions remain robust when considering the expected social insurance as an unearned income indicator (see Table C.13 in Appendix C.5).

[35]Conclusions remain very similar when considering the expected social insurance as an unearned income indicator, with the difference that in this case low unearned income second generation immigrants earning the minimum wage bear significantly worse conditions than those earning above the minimum wage (see Table C.13 in Appendix C.5). Moreover, even if work conditions of second generation immigrants earning the minimum wage are improved with

6 Conclusion

Why are immigrants over-represented in riskier sectors and occupations? This paper has tried to disentangle the factors that push immigrants to accept more strenuous and riskier work conditions. Using a simplified circular model in the style of Salop (1979) and inspired by Gautier and Zenou (2010), we show that the range of acceptable work conditions for the individual decreases with unearned income and with the disutility associated with the distance between the most preferred and actual work conditions. Both effects are smoothed in the presence of flexible wages. We use the French LFS 2003-2012 merged with national industry statistics on professional accidents and illnesses, with information on manual task intensity by occupation and with rental prices for both private and social housing, to test the predictions provided by our theoretical framework.

We find that (i) wage rigidity increases the work conditions gap between natives and immigrants; (ii) high unearned income is associated with better work conditions; (iii) for immigrants and natives with high unearned income, differences in demographic characteristics explain part of the immigrant-native gap in work conditions . In contrast, the gap largely persists among low unearned income people even once we have imposed identical demographic composition among them. This suggests that there must be other factors that influence preferences over work conditions and that are missing in our empirical analysis.

Findings from this paper contribute to the debate on how minimum wage changes affect low-skilled immigrants. Most existing studies on the subject (see Orrenius and Zavodny, 2008, Churchill and Sabia, 2019 or Averett et al., 2019) are missing the consequences that the introduction or the increase in the minimum wage will have in terms of work conditions. Their cost-benefit analysis neglects the costs associated with the loss in workplace safety. In the presence of rigid wages, work conditions become the only adjustment variable of firms. This leads individuals with low reservation wage, traditionally immigrants, to bear worse work conditions than in the presence of flexible wages.

the level of the expected social insurance benefit, the improvement is insufficient to compensate for the deterioration of work conditions induced by the minimum wage.

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A   Appendix: Data sources and variables

Statistics provided by the National Health Insurance Fund for Employed Workers ("Caisse nationale de l'assurance maladie des travailleurs salaries") concern both professional accidents and illness. These statistics are available for the period 2012-2016, but it is only for 2014, 2015, 2016 that they are provided at the five digit NAF2008 level. For more than 720 activity branches we have information on:

- Professional accidents that led (i) to a repair in the form of a first payment of daily "illness allowance" (resulting from a full day leave of work in addition to the day when the accident actually happened); or (ii) to financial compensation due to a permanent disability or fatal accident (death benefit). A professional accident is defined as an accident which happened to the employee due to or at the time of his work, whatever the cause. In order for the work accident to be recognized, the employee must justify the following two conditions: (i) she was the victim of an accidental act in the course of her professional activity, and (ii) the accidental event resulted in the sudden appearance of a lesion. The cause of the accident at work must be sudden (which distinguishes it from the appearance of the professional illness). It can come from an event or series of events, which must be dated with certainty. The accident is presumed to be of professional origin as soon as it occurs on company premises, even during a break. This implies that the employee must be placed under the authority of the employer when the event occurs.

- Professional illness that gave rise (i) to a repair in the form of a first daily "illness allowance" payment (following an interruption of work); or (ii) to financial compensation due to a permanent incapacity or fatal loss (death benefit). In France, occupational disease is a work-related illness, that is to say, an illness resulting from the prolonged exposure to a risk as a result of the worker's usual mission. To be considered an occupational illness, it must appear in one of the 118 tables of the Social Security Code, but it must also be recognized as such by the Primary Health Insurance Fund following a survey conducted on the victim. Once the professional illness is proven, the victim is compensated without a waiting period until the end of his work stoppage and is entitled to reimbursement for his medical expenses. If the injury or the occupational illness is consolidated, a permanent incapacity rate is pronounced by the Primary Health Insurance Fund and the worker is entitled to the payment of a life annuity or a lump sum compensation in capital. At the end of the work stoppage, the employee must return to his position under the usual conditions and if he is not declared fit by the doctor, the employer must propose a new position adapted to his situation. The recognition of an occupational illness may therefore involve a long procedure including a survey over the victim.

A.1 Unearned income

Using individual data from the enriched LFS 2003-2012 database, we propose then a linear probability model to estimate the probability of having a high outside employment opportunity (home ownership or receiving a high implicit subsidy from social housing) depending on the nativity group:

$$H_{it} = \upsilon_M IMM_{it} + \upsilon_{10} Residence_{10} + \upsilon_x X_{it} + \upsilon_{dt} + \chi_{it} \tag{19}$$

where H_{it} stands for home ownership or for being a tenant in MRH outside SUAs in a department located at the fifth quintile of the implicit subsidy distribution. As a robustness test, we also implement the regression considering the expected social insurance benefit as a dependent variable. IMM_{it} represents the dummy immigrant. *2nd generation* results from the interaction between the fact of being a native and the fact of having foreign born parents. Coefficients must then be interpreted with respect to natives. *EU immigrants* results from the interaction of being foreign born and being born in an EU-15 country. We also include as controls X_{it} gender, age, age squared, civil status, children, diploma level, years of residence in the host country ($<$10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. We introduce year-department interacted fixed effects.

Table A.1: Probability of having a high unearned income. LFS 2003-2012.

	Home owner			Tenant in MRH outside SUA in a highly subsidized department			Expected social insurance benefit		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Immigrant	-0.549***	-0.557***	-0.550***	-0.0714***	-0.0678***	-0.0735***	-0.947***	-1.135***	-0.929***
	(0.0180)	(0.0190)	(0.0174)	(0.0199)	(0.0204)	(0.0199)	(0.225)	(0.191)	(0.222)
2nd generation		-0.0446***			0.0255***			-0.204***	
		(0.00469)			(0.00668)			(0.0735)	
EU-Immigrant			0.160***			-0.0613***			0.653***
			(0.00859)			(0.00945)			(0.114)
Years of residence <10 years	-0.241***	-0.242***	-0.223***	0.000131	0.000139	0.000132	0.0822	0.0654	0.171
	(0.0101)	(0.0104)	(0.00936)	(0.000169)	(0.000180)	(0.000169)	(0.113)	(0.118)	(0.119)
Years of residence 10-20 years	-0.130***	-0.129***	-0.111***	-0.0717***	-0.0756***	-0.0766***	-0.156	-0.346***	-0.0673
	(0.00783)	(0.00815)	(0.00775)	(0.0102)	(0.0108)	(0.00998)	(0.171)	(0.0905)	(0.165)
Years of residence 20-30 years	-0.111***	-0.110***	-0.0899***	-0.0229***	-0.0192**	-0.0305***	-0.332***	-0.312***	-0.242***
	(0.00729)	(0.00773)	(0.00740)	(0.00856)	(0.00893)	(0.00838)	(0.0723)	(0.0794)	(0.0739)
Manual intensity	-0.000622***	-0.000643***	-0.000632***	0.0101	0.00589	0.00298	-0.0262***	-0.0273***	-0.0262***
	(0.000143)	(0.000150)	(0.000144)	(0.0107)	(0.0111)	(0.0104)	(0.00252)	(0.00220)	(0.00251)
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,093,220	990,234	1,093,220	402,814	361,880	402,814	325,629	294,569	325,629
R-squared	0.193	0.195	0.196	0.245	0.243	0.246	0.068	0.075	0.068

Source: Labor Force surveys 2003-2012, OECD Statistics 2003-2012, Rental housing directory of social landlords 2012, O*NET and EurOccupations databases. Note: OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

A.2 Appendix: Descriptive statistics

Table A.2: Native and immigrant sample composition, LFS 2003-2012.

	Natives			Immigrants		
Variable	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
Female	1,428,114	0.479	0.500	173,395	0.449	0.497
Age	1,428,114	41.08	11.392	173,395	44.537	10.643
Married	1,428,114	0.505	0.500	173,395	0.660	0.474
Children	1,428,114	0.522	0.500	173,395	0.613	0.487
SUA	1,428,114	0.047	0.212	173,363	0.140	0.347
MRH	1,428,114	0.118	0.322	173,395	0.240	0.427
Home owner	1,428,114	0.630	0.483	173,395	0.472	0.499
No diploma	1,428,114	0.157	0.364	173,395	0.337	0.473
BEPC only	1,428,114	0.076	0.264	173,395	0.065	0.247
CAP-BEP	1,428,114	0.278	0.448	173,395	0.160	0.367
Baccalaureate degree	1,428,114	0.184	0.387	173,395	0.156	0.362
Baccalaureate+2	1,428,114	0.145	0.352	173,395	0.087	0.282
Higher degree	1,428,114	0.161	0.367	173,395	0.195	0.396
Years of residence < 10	1,428,114	0.000	0.000	173,395	0.174	0.379
Years of residence $10 - 20$	1,428,114	0.000	0.000	173,395	0.177	0.381
Years of residence $20 - 30$	1,428,114	0.000	0.000	173,395	0.191	0.393
Years of residence above 30	1,428,114	0.000	0.000	173,395	0.458	0.498
Manual intensity index	967,197	18.940	7.333	126,810	19.624	7.375
PAFR	1,412,741	20.788	15.565	170,587	22.143	22.1434
PATD	1,412,741	1.286	1.056	170,587	1.449	1.207
PAPD	1,412,741	11.924	11.475	170,587	13.740	13.486
PDTD	1,412,741	0.393	0.761	170,587	0.388	0.602
PDPD	1,412,741	0.854	1.774	170,587	0.834	1.381

B Appendix: counterfactual weight construction

For our counterfactual approach, we rely on the cell-by-cell approach suggested by Lemieux (2002), which is equivalent to the reweighting method of DiNardo et al. (1996) but has the advantage to be more flexible. This non-parametric procedure consists first in dividing the data of every period t into a limited number C of cells according to a set of dummy variables $x_{it} = (x_{i1t}, \ldots, x_{ict}, \ldots x_{iCt})$. This procedure is based on the definition of the same gender-age-education-civil status-children cells for natives and immigrants.

We use the following dummies to define gender-age-education-civil status-children cells: a dummy "female" which equals unity if the individual is a women, a dummy "married" equal to 1 if the individual is married and dummy "children" equal to unity if the individual has children.

We also consider three education dummies adopting the unitary value for less than Baccalaureate, Baccalaureate or equivalent diploma and more than Baccalaureate, respectively. Education levels have been defined so as to ensure that the number of workers by educational category is similar. Following the same principle, we also consider three dummies associated with three age categories (less than 40, between 40 and 50 and more than 50 years old).

For each cell c at period t, we then estimate a reweighting factor $\Psi_{Native,ct}$ that will be used to calculate a counterfactual sample weight : $\omega^a_{Immigrant,ict} = \Psi_{Native,ct} \, \omega_{Immigrant,ict}$, where $\omega_{Immigrant,ict}$ is the original sample weight of the immigrant individual i belonging to cell c in period t. The reweighting factor of each cell c is built up from the sample share of natives in the cell in period t, denoted $\eta_{Native,ct}$, which is given by the sample average of the dummy variable x_{ict}:

$$\bar{x}_{Native,ct} = \sum_{i \epsilon Natives} \omega_{it} \, x_{ict} = \sum_{x_{ict}} \omega_{it} = \eta_{Native,ct}, \tag{20}$$

where ω_{it} is the original LFS sample weight. To ensure that the gender-age-education-civil status-children composition is the same for natives and immigrants every period, we assign to each immigrant cell c the same average weight as the cell c of natives. This implies including the sample share of cell c for natives in the calculation of the corresponding reweighting factors. Thus, the reweighting factor of immigrants in cell c and period t is defined as:

$$\Psi_{Native,ct} = \frac{\eta_{Native,ct}}{\eta_{Immigrant,ct}}, \tag{21}$$

where $\eta_{Immigrant,ct}$ corresponds to the observed immigrant share of cell c (defined by a particular gender-age-education-civil status-children) in period t, and $\eta_{Native,tc}$ is the same share for natives. That is, the numerator stands for the counterfactual sample share of cell c that we want to impose so as to have identical gender-age-education-civil status-children composition for immigrants and natives.

The resulting counterfactual sample weights $\omega^a_{Immigrant,ict} = \Psi_{Native,ct} \, \omega_{Immigrant,ict}$ allow for estimating the differences in work conditions that would have arisen if the gender-age-education-civil status-children composition for immigrants had been the same as for natives over time.

C Appendix: Estimation results

C.1 Scenario 1: $R_I < R_N$ and flexible wages

Tables C.1-C.2 consider the whole sample of workers earning a wage above the minimum wage. In both tables, columns (1)-(5) use home ownership as an indicator of high unearned income, while columns (6)-(10) use the fact of being a tenant in an MRH outside SUAs in highly subsidized departments.

Table C.1: Immigrants and professional accident/illness : the role of unearned income in the presence of flexible wages. LFS weights. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator:					Indicator: Tenants in MRH outside				
	Home ownership					SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	4.213***	0.394***	3.377***	0.0938***	0.155***	5.104***	0.460***	3.787***	0.121***	0.190***
	(0.354)	(0.0263)	(0.259)	(0.00960)	(0.0207)	(0.514)	(0.0395)	(0.356)	(0.0135)	(0.0275)
High unearned income	-0.504***	-0.0481***	-0.300***	-0.0118***	-0.0222***	-0.173	-0.0179	-0.0186	-0.0294***	-0.0600***
	(0.0549)	(0.00375)	(0.0377)	(0.00185)	(0.00415)	(0.178)	(0.0128)	(0.133)	(0.00639)	(0.0137)
Immigrant · High unearned income	-0.390***	-0.0330***	-0.287***	-0.00909**	-0.0173*	-0.105	-0.0144	-0.501***	0.00283	0.00944
	(0.142)	(0.0105)	(0.106)	(0.00436)	(0.00945)	(0.257)	(0.0207)	(0.192)	(0.00751)	(0.0152)
Years of residence <10 years	1.669***	0.152***	1.337***	0.0319***	0.0465***	2.126***	0.191***	1.594***	0.0486***	0.0748***
	(0.171)	(0.0131)	(0.139)	(0.00508)	(0.0105)	(0.250)	(0.0189)	(0.181)	(0.00675)	(0.0137)
Years of residence 10-20 years	1.120***	0.101***	0.886***	0.0250***	0.0425***	1.644***	0.135***	0.996***	0.0359***	0.0541***
	(0.199)	(0.0141)	(0.138)	(0.00540)	(0.0119)	(0.267)	(0.0202)	(0.184)	(0.00691)	(0.0136)
Years of residence 20-30 years	0.986***	0.0866***	0.604***	0.0120***	0.0133	1.188***	0.102***	0.737***	0.0228***	0.0330**
	(0.183)	(0.0133)	(0.127)	(0.00427)	(0.00925)	(0.255)	(0.0195)	(0.177)	(0.00621)	(0.0133)
Manual intensity	0.0537***	0.00464***	0.0489***	0.00184***	0.00453***	0.0779***	0.00686***	0.0829***	0.00174***	0.00405***
	(0.00433)	(0.000311)	(0.00295)	(0.000172)	(0.000383)	(0.00785)	(0.000573)	(0.00544)	(0.000271)	(0.000593)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	992,283	992,283	992,283	992,283	992,283	354,309	354,309	354,309	354,309	354,309
R-squared	0.573	0.561	0.638	0.393	0.377	0.577	0.568	0.648	0.386	0.384

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

Table C.2: Immigrants and professional accident/illness : the role of unearned income in the presence of flexible wages. Counterfactual weights. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	3.465***	0.328***	2.728***	0.0736***	0.117***	4.107***	0.376***	3.180***	0.0915***	0.155***
	(0.374)	(0.0275)	(0.266)	(0.00993)	(0.0208)	(0.568)	(0.0422)	(0.384)	(0.0147)	(0.0303)
High unearned income	-0.521***	-0.0494***	-0.309***	-0.0121***	-0.0230***	-0.232	-0.0228*	-0.0373	-0.0309***	-0.0629***
	(0.0549)	(0.00375)	(0.0379)	(0.00185)	(0.00415)	(0.179)	(0.0128)	(0.135)	(0.00643)	(0.0138)
Immigrant · High unearned income	-0.202	-0.0187*	-0.218*	-0.00280	-0.00650	-0.0491	-0.00543	-0.271	0.0139*	0.0278
	(0.157)	(0.0112)	(0.117)	(0.00448)	(0.00938)	(0.284)	(0.0221)	(0.197)	(0.00829)	(0.0171)
Years of residence <10 years	1.598***	0.144***	1.170***	0.0326***	0.0481***	2.024***	0.180***	1.421***	0.0515***	0.0872***
	(0.187)	(0.0141)	(0.145)	(0.00524)	(0.0106)	(0.275)	(0.0208)	(0.199)	(0.00753)	(0.0154)
Years of residence 10-20 years	0.900***	0.0798***	0.646***	0.0191***	0.0299***	1.331***	0.110***	0.858***	0.0253***	0.0408***
	(0.207)	(0.0147)	(0.146)	(0.00540)	(0.0114)	(0.287)	(0.0214)	(0.200)	(0.00737)	(0.0152)
Years of residence 20-30 years	0.666***	0.0640***	0.443***	0.00280	-0.00299	0.699**	0.0680***	0.570***	0.00878	0.0160
	(0.197)	(0.0143)	(0.136)	(0.00458)	(0.00978)	(0.309)	(0.0225)	(0.202)	(0.00749)	(0.0157)
Manual intensity	0.0502***	0.00440***	0.0481***	0.00180***	0.00447***	0.0687***	0.00617***	0.0789***	0.00161***	0.00379***
	(0.00432)	(0.000309)	(0.00296)	(0.000172)	(0.000385)	(0.00789)	(0.000568)	(0.00542)	(0.000275)	(0.000606)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	992,246	992,246	992,246	992,246	992,246	354,289	354,289	354,289	354,289	354,289
R-squared	0.572	0.560	0.636	0.393	0.377	0.575	0.566	0.643	0.382	0.379

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

Table C.3: Immigrants and professional accident/illness : the role of the expected social insurance benefit (for people earning more than 1.1 times the minimum wage). LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	4.029***	0.366***	3.614***	0.0747***	0.121***	3.322***	0.301***	2.820***	0.0502***	0.0751**
	(0.464)	(0.0336)	(0.352)	(0.0138)	(0.0310)	(0.534)	(0.0376)	(0.360)	(0.0146)	(0.0315)
Exp. social ins. benefit	0.00950	0.000784*	-0.00585**	-0.000451***	-0.000724***	0.00957	0.000787*	-0.00586**	-0.000449***	-0.000722***
	(0.00595)	(0.000456)	(0.00231)	(0.000144)	(0.000256)	(0.00594)	(0.000456)	(0.00230)	(0.000143)	(0.000255)
Immigrant · Exp. social ins. benefit	-0.0110	-0.00132*	-0.00650	-0.000122	-0.000525	-0.00932	-0.00110*	-0.00207	5.15e-05	-0.000109
	(0.00845)	(0.000719)	(0.00671)	(0.000277)	(0.000563)	(0.00744)	(0.000646)	(0.00637)	(0.000261)	(0.000494)
Years of residence <10 years	1.498***	0.129***	1.382***	0.0224***	0.0263	1.321***	0.111***	1.116***	0.0184**	0.0194
	(0.252)	(0.0189)	(0.188)	(0.00778)	(0.0166)	(0.292)	(0.0208)	(0.192)	(0.00835)	(0.0175)
Years of residence 10-20 years	1.201***	0.105***	1.156***	0.0206***	0.0415**	0.954***	0.0824***	0.861***	0.0143*	0.0286*
	(0.256)	(0.0181)	(0.187)	(0.00742)	(0.0174)	(0.274)	(0.0197)	(0.199)	(0.00773)	(0.0167)
Years of residence 20-30 years	0.828***	0.0758***	0.658***	0.00695	-0.00667	0.612**	0.0606***	0.470***	-0.00504	-0.0272*
	(0.238)	(0.0171)	(0.161)	(0.00611)	(0.0132)	(0.291)	(0.0209)	(0.178)	(0.00672)	(0.0144)
Manual intensity	0.0127**	0.00199***	0.0293***	0.00132***	0.00373***	0.00910*	0.00178***	0.0282***	0.00126***	0.00365***
	(0.00507)	(0.000344)	(0.00348)	(0.000226)	(0.000515)	(0.00508)	(0.000345)	(0.00352)	(0.000225)	(0.000515)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	200,122	200,122	200,122	200,122	200,122	200,122	200,122	200,122	200,122	200,122
R-squared	0.582	0.570	0.629	0.390	0.360	0.582	0.569	0.627	0.390	0.361

Source: Labor Force surveys 2003-2012, OECD statistics 2003-2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS in columns (1)-(5) and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants in columns (6)-(10). The sample includes all workers earning less than 1.1 times the minimum wage. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

C.2   Scenario 2: $R_I < R_N$ and rigid wages

Table C.4: Immigrants and professional accident/illness : standard weights in the presence of rigid wages. LFS 2003-2012.

	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	-0.148	0.0890***	0.579***	-0.0265***	-0.0659***	4.104***	0.406***	2.845***	0.105***	0.170***
	(0.222)	(0.0153)	(0.142)	(0.00621)	(0.0130)	(0.595)	(0.0457)	(0.389)	(0.0151)	(0.0278)
Years of residence <10 years						1.814***	0.179***	1.332***	0.0431***	0.0646***
						(0.297)	(0.0228)	(0.202)	(0.00788)	(0.0143)
Years of residence 10-20 years						0.661**	0.0736***	0.470**	0.0228***	0.0343**
						(0.309)	(0.0235)	(0.197)	(0.00784)	(0.0138)
Years of residence 20-30 years						1.005***	0.0834***	0.550***	0.0217***	0.0359**
						(0.310)	(0.0240)	(0.198)	(0.00817)	(0.0150)
Manual intensity						0.111***	0.0102***	0.133***	0.00300***	0.00711***
						(0.00989)	(0.000777)	(0.00680)	(0.000335)	(0.000681)
Controls	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
NAF2 FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Department × Year FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	117,473	117,473	117,473	117,473	117,473	90,237	90,237	90,237	90,237	90,237
R-squared	0.000	0.001	0.000	0.000	0.000	0.560	0.534	0.653	0.394	0.421

Dependent variable: professional accident/illness indicators

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

Table C.5: Immigrants and professional accident/illness : the effect of the expected social insurance benefit (for people earning less than 1.1 times the minimum wage). LFS 2003-2012.

	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exp. social ins. benefit	-1.114***	-0.0763***	-1.450***	-0.0709***	-0.173***	-0.350***	-0.0303***	-0.259***	-0.0214***	-0.0384***
	(0.150)	(0.00996)	(0.110)	(0.00655)	(0.0149)	(0.102)	(0.00716)	(0.0708)	(0.00384)	(0.00758)
Controls	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
NAF2 FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Department × Year FE	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	160,785	160,785	160,785	160,785	160,785	122,446	122,446	122,446	122,446	122,446
R-squared	0.001	0.001	0.002	0.002	0.002	0.560	0.540	0.652	0.394	0.402

Dependent variable: professional accident/illness indicators

Source: Labor Force surveys 2003-2012, OECD statistics 2003-2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at department-year level and weights provided by the LFS. The sample includes all workers earning less than 1.1 times the minimum wage. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

Table C.6: Immigrants and professional accident/illness : the role of the expected social insurance benefit (for people earning less than 1.1 times the minimum wage). LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	0.922	0.199*	1.396	0.0118	-0.0261	-0.475	0.117	0.837	-0.00320	-0.0527
	(1.639)	(0.120)	(1.163)	(0.0489)	(0.0901)	(1.749)	(0.126)	(1.297)	(0.0531)	(0.0996)
Exp. social ins. benefit	-0.442***	-0.0369***	-0.309***	-0.0239***	-0.0434***	-0.446***	-0.0373***	-0.319***	-0.0237***	-0.0429***
	(0.109)	(0.00759)	(0.0736)	(0.00417)	(0.00834)	(0.108)	(0.00755)	(0.0734)	(0.00415)	(0.00832)
Immigrant · Exp. social ins. benefit	0.591**	0.0397**	0.308	0.0168**	0.0335**	0.700**	0.0433**	0.353*	0.0162*	0.0331**
	(0.261)	(0.0195)	(0.188)	(0.00760)	(0.0141)	(0.277)	(0.0205)	(0.207)	(0.00832)	(0.0156)
Years of residence <10 years	1.916***	0.190***	1.580***	0.0471***	0.0702***	1.785***	0.183***	1.495***	0.0446***	0.0696***
	(0.268)	(0.0203)	(0.201)	(0.00767)	(0.0139)	(0.293)	(0.0220)	(0.209)	(0.00751)	(0.0137)
Years of residence 10-20 years	0.878***	0.0895***	0.593***	0.0257***	0.0338**	0.660**	0.0680***	0.605***	0.0204**	0.0240
	(0.295)	(0.0218)	(0.186)	(0.00774)	(0.0137)	(0.332)	(0.0240)	(0.207)	(0.00849)	(0.0150)
Years of residence 20-30 years	1.295***	0.107***	0.765***	0.0242***	0.0388***	0.881***	0.0807***	0.670***	0.0169**	0.0272*
	(0.282)	(0.0213)	(0.184)	(0.00745)	(0.0136)	(0.305)	(0.0227)	(0.199)	(0.00807)	(0.0144)
Manual intensity	0.0868***	0.00856***	0.115***	0.00241***	0.00553***	0.0829***	0.00823***	0.114***	0.00239***	0.00549***
	(0.00840)	(0.000649)	(0.00616)	(0.000289)	(0.000606)	(0.00853)	(0.000652)	(0.00622)	(0.000293)	(0.000612)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	122,446	122,446	122,446	122,446	122,446	122,434	122,434	122,434	122,434	122,434
R-squared	0.561	0.541	0.652	0.394	0.402	0.560	0.540	0.651	0.393	0.401

Source: Labor Force surveys 2003-2012, OECD statistics 2003-2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level. Weights are provided by the LFS in columns (1)-(5) and weights are computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants in columns (6)-(10). The sample includes all workers earning less than 1.1 times the minimum wage. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

Table C.7: Immigrants and professional accident/illness : the role of the minimum wage as driver of work conditions when considering the expected social insurance benefit. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	4.178***	0.395***	3.487***	0.0915***	0.150***	3.349***	0.325***	2.854***	0.0667***	0.105***
	(0.380)	(0.0282)	(0.287)	(0.0112)	(0.0231)	(0.427)	(0.0313)	(0.298)	(0.0114)	(0.0235)
Immigrant ·Minimum wage earner	27.68***	2.158***	14.24***	0.481***	1.063***	26.16***	2.022***	13.34***	0.508***	1.127***
	(4.229)	(0.330)	(2.728)	(0.119)	(0.220)	(4.416)	(0.342)	(3.032)	(0.119)	(0.216)
Exp. social ins. benefit	-0.00169	-9.63e-06	-0.0136***	-0.000753***	-0.00116***	-0.00156	1.83e-06	-0.0135***	-0.000753***	-0.00117***
	(0.00694)	(0.000482)	(0.00421)	(0.000209)	(0.000341)	(0.00691)	(0.000480)	(0.00417)	(0.000209)	(0.000340)
Immigrant · Exp. social ins. benefit	-0.00542	-0.00103	-0.00290	-2.08e-05	-0.000289	-0.00191	-0.000673	0.00302	0.000211	0.000185
	(0.00993)	(0.000832)	(0.00875)	(0.000353)	(0.000633)	(0.00912)	(0.000791)	(0.00841)	(0.000351)	(0.000594)
Img. · Exp. social ins. benefit ·Min. Wage	-4.335***	-0.337***	-2.254***	-0.0756***	-0.168***	-4.077***	-0.315***	-2.107***	-0.0799***	-0.178***
	(0.676)	(0.0528)	(0.436)	(0.0190)	(0.0353)	(0.707)	(0.0547)	(0.483)	(0.0191)	(0.0348)
Years of residence <10 years	1.823***	0.167***	1.569***	0.0360***	0.0521***	1.669***	0.155***	1.381***	0.0331***	0.0490***
	(0.186)	(0.0143)	(0.142)	(0.00589)	(0.0120)	(0.208)	(0.0153)	(0.141)	(0.00594)	(0.0121)
Years of residence 10-20 years	1.003***	0.0944***	0.863***	0.0218***	0.0369***	0.750***	0.0707***	0.683***	0.0153***	0.0243**
	(0.194)	(0.0138)	(0.130)	(0.00531)	(0.0114)	(0.220)	(0.0157)	(0.150)	(0.00552)	(0.0112)
Years of residence 20-30 years	1.028***	0.0886***	0.692***	0.0144***	0.0145	0.689***	0.0658***	0.530***	0.00310	-0.00503
	(0.181)	(0.0135)	(0.121)	(0.00478)	(0.0102)	(0.211)	(0.0156)	(0.135)	(0.00530)	(0.0111)
Manual intensity	0.0480***	0.00495***	0.0635***	0.00191***	0.00468***	0.0439***	0.00467***	0.0621***	0.00186***	0.00459***
	(0.00443)	(0.000328)	(0.00312)	(0.000183)	(0.000393)	(0.00440)	(0.000324)	(0.00313)	(0.000181)	(0.000392)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No	No	No
Department FE	No	No	No	No	No	No	No	No	No	No
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	322,568	322,568	322,568	322,568	322,568	322,556	322,556	322,556	322,556	322,556
R-squared	0.569	0.551	0.629	0.382	0.364	0.569	0.551	0.627	0.382	0.364

Source: Labor Force surveys 2003-2012, OECD statistics 2003-2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level. Weights are provided by the LFS for columns (1)-(5) and weights are computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants in columns (6)-(10). Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

C.3 Scenario 3: $R_I = R_N$ and flexible wages

We focus here on the subsample of workers earning more than the minimum wage and with a high unearned income. Columns (1)-(5) in Table C.8 consider the sample of home owners while columns (6)-(10) focus on tenants living in MRH outside SUAs in departments located in the fifth quintile of the implicit subsidy distribution.

Table C.8: High unearned income immigrants and professional accident/illness: people earning above the minimum wage. LFS weights. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Population: Home owners					Population: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	2.791***	0.273***	2.410***	0.0489***	0.0864***	3.676***	0.393***	2.930***	0.0915***	0.160***
	(0.503)	(0.0365)	(0.388)	(0.0152)	(0.0333)	(1.206)	(0.0930)	(0.849)	(0.0241)	(0.0458)
Years of residence <10 years	1.145***	0.0969***	0.763***	0.0111	0.0105	2.059***	0.203***	1.626***	0.0353**	0.0639**
	(0.288)	(0.0220)	(0.223)	(0.00901)	(0.0182)	(0.677)	(0.0546)	(0.472)	(0.0138)	(0.0273)
Years of residence 10-20 years	0.526*	0.0590***	0.729***	0.0136	0.0329	1.161**	0.119***	0.780**	0.0202**	0.0378*
	(0.290)	(0.0202)	(0.221)	(0.00887)	(0.0202)	(0.523)	(0.0381)	(0.360)	(0.0101)	(0.0199)
Years of residence 20-30 years	0.887***	0.0814***	0.549***	0.00220	-0.00606	0.313	0.0562	0.452	0.0246*	0.0407
	(0.259)	(0.0181)	(0.178)	(0.00642)	(0.0136)	(0.533)	(0.0403)	(0.380)	(0.0133)	(0.0256)
Manual intensity	0.0364***	0.00306***	0.0286***	0.00175***	0.00453***	0.0665***	0.00644***	0.0885***	0.00153***	0.00346***
	(0.00505)	(0.000351)	(0.00346)	(0.000224)	(0.000507)	(0.0167)	(0.00124)	(0.0117)	(0.000506)	(0.00113)
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	609,012	609,012	609,012	609,012	609,012	46,651	46,651	46,651	46,651	46,651
R-squared	0.575	0.560	0.635	0.404	0.379	0.558	0.543	0.618	0.385	0.428

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p<0.01)$, $**(p<0.05)$ and $*(p<0.1)$.

Table C.9: High unearned income immigrants and professional accident/illness : people earning above the minimum wage. Counterfactual weights. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Population: Home owners					Population: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	1.826***	0.201***	1.841***	0.0253	0.0288	3.879***	0.369***	2.900***	0.0797***	0.154***
	(0.571)	(0.0397)	(0.431)	(0.0167)	(0.0347)	(1.370)	(0.103)	(0.900)	(0.0291)	(0.0573)
Years of residence <10 years	0.684**	0.0663***	0.624***	0.00344	-0.00447	2.478***	0.215***	1.584***	0.0369**	0.0656*
	(0.313)	(0.0226)	(0.239)	(0.00936)	(0.0187)	(0.757)	(0.0582)	(0.501)	(0.0176)	(0.0368)
Years of residence 10-20 years	0.222	0.0350	0.439*	0.00805	0.0129	1.228*	0.111**	0.796*	0.0179	0.0374
	(0.325)	(0.0224)	(0.242)	(0.00926)	(0.0189)	(0.663)	(0.0474)	(0.426)	(0.0128)	(0.0250)
Years of residence 20-30 years	0.583*	0.0608***	0.410*	-0.0111	-0.0345**	0.134	0.0322	0.380	0.0125	0.0340
	(0.303)	(0.0212)	(0.224)	(0.00722)	(0.0155)	(0.606)	(0.0461)	(0.416)	(0.0156)	(0.0299)
	0.0347***	0.00295***	0.0286***	0.00173***	0.00451***	0.0483***	0.00520***	0.0778***	0.00139**	0.00321**
	(0.00503)	(0.000354)	(0.00349)	(0.000224)	(0.000508)	(0.0184)	(0.00135)	(0.0121)	(0.000571)	(0.00129)
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.	Counterf.
Observations	608,996	608,996	608,996	608,996	608,996	46,632	46,632	46,632	46,632	46,632
R-squared	0.575	0.561	0.635	0.405	0.381	0.561	0.545	0.617	0.382	0.423

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights computed so as to ensure an equal gender-age-education-civil status-children composition of natives and immigrants. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

C.4 Scenario 4: $R_I = R_N$ and rigid wages

Table C.10: High unearned income immigrants and professional accident/illness : the role of the minimum wage as driver of work conditions. Standard weights. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	2.810***	0.276***	2.419***	0.0496***	0.0872***	3.712***	0.391***	2.818***	0.0929***	0.160***
	(0.487)	(0.0359)	(0.379)	(0.0146)	(0.0318)	(1.163)	(0.0906)	(0.803)	(0.0234)	(0.0441)
Immigrant ·Minimum wage earner	0.343*	0.0290*	-0.114	-0.00250	-0.00811	0.626**	0.0546**	0.291*	0.0162**	0.0281*
	(0.205)	(0.0157)	(0.136)	(0.00583)	(0.0108)	(0.304)	(0.0220)	(0.170)	(0.00771)	(0.0152)
Years of residence <10 years	1.228***	0.106***	0.838***	0.0136	0.0145	2.102***	0.206***	1.587***	0.0386***	0.0701***
	(0.279)	(0.0217)	(0.219)	(0.00871)	(0.0175)	(0.631)	(0.0516)	(0.437)	(0.0130)	(0.0252)
Years of residence 10-20 years	0.460	0.0538***	0.679***	0.0110	0.0280	1.119**	0.115***	0.696**	0.0210**	0.0372*
	(0.281)	(0.0198)	(0.212)	(0.00853)	(0.0191)	(0.484)	(0.0358)	(0.332)	(0.00973)	(0.0190)
Years of residence 20-30 years	0.870***	0.0780***	0.513***	0.00271	-0.00456	0.368	0.0585	0.450	0.0238*	0.0384
	(0.250)	(0.0177)	(0.172)	(0.00628)	(0.0133)	(0.520)	(0.0395)	(0.363)	(0.0130)	(0.0249)
Manual intensity	0.0406***	0.00346***	0.0345***	0.00185***	0.00470***	0.0737***	0.00714***	0.0948***	0.00166***	0.00385***
	(0.00492)	(0.000344)	(0.00339)	(0.000216)	(0.000485)	(0.0161)	(0.00120)	(0.0112)	(0.000525)	(0.00118)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Observations	651,445	651,445	651,445	651,445	651,445	51,904	51,904	51,904	51,904	51,904
R-squared	0.573	0.557	0.634	0.402	0.380	0.555	0.537	0.616	0.384	0.427

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

C.5 Additional results with individual data

Table C.11: EU-immigrants and professional accident/illness: the role of the minimum wage as driver of work conditions. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator: Home ownership					Indicator: Tenants in MRH outside SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	4.357***	0.384***	3.269***	0.0854***	0.144***	5.290***	0.448***	3.665***	0.115***	0.187***
	(0.461)	(0.0335)	(0.329)	(0.0122)	(0.0254)	(0.666)	(0.0506)	(0.454)	(0.0170)	(0.0335)
Immigrant ·Minimum wage earner	0.871***	0.0809***	0.385***	0.0187***	0.0364***	0.824***	0.0749***	0.409**	0.0147**	0.0304**
	(0.229)	(0.0180)	(0.148)	(0.00662)	(0.0122)	(0.273)	(0.0225)	(0.195)	(0.00746)	(0.0141)
High unearned income	-0.555***	-0.0506***	-0.288***	-0.0116***	-0.0193***	-0.177	-0.0173	-0.124	-0.0197**	-0.0415**
	(0.0728)	(0.00491)	(0.0481)	(0.00249)	(0.00509)	(0.233)	(0.0165)	(0.158)	(0.00777)	(0.0163)
Immigrant ·High unearned income	-0.687***	-0.0521***	-0.443***	-0.0122*	-0.0244*	0.212	0.00804	-0.439*	0.00151	0.00487
	(0.264)	(0.0190)	(0.170)	(0.00648)	(0.0129)	(0.382)	(0.0308)	(0.263)	(0.0106)	(0.0208)
EU immigrant	-0.252	0.00843	0.857***	0.00403	0.0140	0.0498	0.0231	0.791***	0.00323	0.0129
	(0.318)	(0.0237)	(0.279)	(0.00897)	(0.0182)	(0.338)	(0.0259)	(0.304)	(0.0109)	(0.0220)
EU immigrant ·Minimum wage earner	-0.276	-0.0808**	-0.541	-0.0120	0.0112	-0.153	-0.0562	-0.426	-0.00394	0.0101
	(0.500)	(0.0378)	(0.394)	(0.0135)	(0.0267)	(0.571)	(0.0442)	(0.458)	(0.0163)	(0.0327)
EU immigrant ·High unearned income	1.241***	0.0652**	0.127	0.0208*	0.0478*	-0.740	-0.0356	0.383	-0.0117	-0.0309
	(0.435)	(0.0320)	(0.348)	(0.0122)	(0.0255)	(0.915)	(0.0675)	(0.801)	(0.0233)	(0.0444)
EU img. ·High u. income·Min. wage	-1.644**	-0.0759	-0.981*	-0.0270	-0.113***	1.096	0.0268	-0.576	0.0126	0.0198
	(0.733)	(0.0554)	(0.527)	(0.0188)	(0.0361)	(1.481)	(0.115)	(1.141)	(0.0383)	(0.0698)
Years of residence <10 years	1.777***	0.155***	1.425***	0.0284***	0.0484***	2.217***	0.187***	1.618***	0.0414***	0.0717***
	(0.238)	(0.0177)	(0.172)	(0.00659)	(0.0134)	(0.353)	(0.0263)	(0.232)	(0.00835)	(0.0171)
Years of residence 10-20 years	1.119***	0.0946***	0.755***	0.0227***	0.0358**	1.727***	0.132***	0.891***	0.0351***	0.0505***
	(0.261)	(0.0187)	(0.184)	(0.00723)	(0.0147)	(0.364)	(0.0279)	(0.236)	(0.00954)	(0.0169)
Years of residence 20-30 years	1.159***	0.0905***	0.753***	0.0143**	0.0214*	1.510***	0.117***	0.936***	0.0283***	0.0468***
	(0.234)	(0.0172)	(0.160)	(0.00594)	(0.0121)	(0.334)	(0.0260)	(0.241)	(0.00840)	(0.0173)
Manual intensity	0.0641***	0.00550***	0.0572***	0.00208***	0.00485***	0.0994***	0.00858***	0.0968***	0.00214***	0.00473***
	(0.00599)	(0.000432)	(0.00400)	(0.000238)	(0.000512)	(0.0112)	(0.000809)	(0.00685)	(0.000358)	(0.000759)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	183,242	183,242	183,242	183,242	183,242	67,865	67,865	67,865	67,865	67,865
R-squared	0.572	0.559	0.640	0.399	0.389	0.576	0.567	0.653	0.408	0.412

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

Table C.12: 2nd generation immigrants and professional accident/illness: the role of the minimum wage as driver of work conditions. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	Indicator:					Indicator: Tenants in MRH outside				
	Home ownership					SUAs in highly subsidized departments				
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	4.487***	0.410***	3.591***	0.0876***	0.148***	5.351***	0.469***	3.937***	0.117***	0.193***
	(0.483)	(0.0353)	(0.351)	(0.0127)	(0.0262)	(0.723)	(0.0538)	(0.479)	(0.0183)	(0.0365)
Immigrant ·Minimum wage earner	0.567***	0.0462***	0.0419	0.00998*	0.0235**	0.774***	0.0582***	0.190	0.0129*	0.0314**
	(0.213)	(0.0166)	(0.145)	(0.00556)	(0.0110)	(0.263)	(0.0215)	(0.194)	(0.00704)	(0.0138)
High unearned income	-0.507***	-0.0472***	-0.295***	-0.0117***	-0.0211***	-0.131	-0.0160	-0.0396	-0.0212**	-0.0398**
	(0.0777)	(0.00526)	(0.0515)	(0.00267)	(0.00540)	(0.250)	(0.0178)	(0.173)	(0.00849)	(0.0180)
Immigrant ·High unearned income	-0.406*	-0.0331**	-0.285*	-0.00980*	-0.0203*	0.153	0.00839	-0.532*	0.00260	0.000322
	(0.219)	(0.0158)	(0.149)	(0.00551)	(0.0114)	(0.405)	(0.0330)	(0.299)	(0.0114)	(0.0227)
2nd generation	0.407*	0.0418**	0.0586	0.00379	0.0112	0.651**	0.0538***	0.113	0.00523	0.0140
	(0.243)	(0.0169)	(0.156)	(0.00652)	(0.0169)	(0.283)	(0.0197)	(0.199)	(0.00735)	(0.0198)
2nd generation ·Minimum wage earner	0.362	0.0292	0.309	0.00597	0.00654	0.123	0.00854	0.219	0.00183	-0.00235
	(0.405)	(0.0301)	(0.266)	(0.0127)	(0.0276)	(0.485)	(0.0351)	(0.323)	(0.0160)	(0.0349)
2nd generation ·High unearned income	-0.220	-0.0102	0.160	-0.00501	-0.0157	-1.365**	-0.0814*	-0.858**	-0.0170	-0.0411
	(0.323)	(0.0229)	(0.203)	(0.00876)	(0.0204)	(0.655)	(0.0456)	(0.431)	(0.0174)	(0.0399)
2nd g. ·High u. income·Min. wage	-0.937	-0.0822*	-0.855**	-0.00915	-0.00442	1.435	0.105	0.910	0.0293	0.0591
	(0.648)	(0.0466)	(0.423)	(0.0172)	(0.0349)	(0.946)	(0.0700)	(0.654)	(0.0255)	(0.0548)
Years of residence <10 years	1.782***	0.160***	1.466***	0.0295***	0.0502***	2.163***	0.188***	1.626***	0.0425***	0.0750***
	(0.249)	(0.0185)	(0.179)	(0.00666)	(0.0135)	(0.380)	(0.0279)	(0.243)	(0.00874)	(0.0180)
Years of residence 10-20 years	1.183***	0.102***	0.795***	0.0230***	0.0343**	1.781***	0.139***	0.915***	0.0351***	0.0515***
	(0.272)	(0.0196)	(0.193)	(0.00706)	(0.0141)	(0.389)	(0.0295)	(0.243)	(0.00984)	(0.0178)
Years of residence 20-30 years	1.159***	0.0952***	0.725***	0.0116*	0.0157	1.482***	0.121***	0.951***	0.0274***	0.0445**
	(0.249)	(0.0183)	(0.172)	(0.00616)	(0.0127)	(0.354)	(0.0272)	(0.258)	(0.00904)	(0.0187)
Manual intensity	0.0635***	0.00532***	0.0545***	0.00206***	0.00477***	0.0956***	0.00815***	0.0921***	0.00189***	0.00417***
	(0.00622)	(0.000453)	(0.00406)	(0.000253)	(0.000545)	(0.0118)	(0.000852)	(0.00733)	(0.000374)	(0.000793)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	166,268	166,268	166,268	166,268	166,268	61,388	61,388	61,388	61,388	61,388
R-squared	0.580	0.565	0.645	0.405	0.396	0.584	0.573	0.657	0.402	0.405

Source: Labor Force surveys 2003-2012, Rental housing directory of social landlords 2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the occupation, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual as a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.

Table C.13: EU immigrants and 2nd generation immigrants and professional accident/illness: the role of the minimum wage as driver of work conditions when considering the expected social insurance benefit as an unearned income indicator. LFS 2003-2012.

	Dependent variable: professional accident/illness indicators									
	PAFR	PATD	PAPD	PDTD	PDPD	PAFR	PATD	PAPD	PDTD	PDPD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Immigrant	4.338***	0.394***	3.514***	0.0861***	0.146***	4.528***	0.427***	3.882***	0.0917***	0.155***
	(0.512)	(0.0377)	(0.368)	(0.0141)	(0.0298)	(0.538)	(0.0393)	(0.389)	(0.0144)	(0.0300)
Immigrant ·Minimum wage earner	0.885***	0.0881***	0.474***	0.0221***	0.0409***	0.624***	0.0548***	0.121	0.0133**	0.0269**
	(0.236)	(0.0186)	(0.157)	(0.00704)	(0.0133)	(0.219)	(0.0172)	(0.155)	(0.00585)	(0.0118)
Exp. social ins. benefit	0.000203	3.25e-05	-0.0119**	-0.000620***	-0.00105**	-0.00376	-0.000300	-0.0108*	-0.000587**	-0.00103**
	(0.00798)	(0.000563)	(0.00530)	(0.000223)	(0.000410)	(0.00851)	(0.000577)	(0.00557)	(0.000238)	(0.000454)
Immigrant ·Exp. social ins. Benefit	-0.00524	-0.000729	0.00165	3.78e-05	-0.000310	-0.0120	-0.00165	-0.0149	-0.000529	-0.00119
	(0.0110)	(0.000881)	(0.00971)	(0.000409)	(0.000914)	(0.0140)	(0.00107)	(0.0115)	(0.000422)	(0.000876)
2nd generation						0.595**	0.0502***	0.212	0.00601	0.0109
						(0.241)	(0.0165)	(0.155)	(0.00801)	(0.0160)
2nd generation · Minimum wage earner						26.26***	2.065***	12.78**	0.849***	1.852**
						(7.657)	(0.591)	(5.663)	(0.327)	(0.739)
2nd generation · Exp. social ins. Benefit						-0.0191	-0.000972	7.11e-06	-0.000572	-0.00102
						(0.0172)	(0.00113)	(0.0105)	(0.000721)	(0.00136)
2nd g. · Exp. social ins. Benefit · Min. wage earner						-4.207***	-0.330***	-2.050**	-0.136***	-0.296**
						(1.222)	(0.0943)	(0.900)	(0.0518)	(0.117)
EU immigrant	0.0354	0.0204	0.808***	0.0126	0.0356*					
	(0.290)	(0.0213)	(0.227)	(0.00925)	(0.0193)					
EU immigrant · Minimum wage earner	13.64	0.914	7.746	0.596**	1.591***					
	(10.43)	(0.810)	(7.014)	(0.264)	(0.548)					
EU immigrant · Exp. social ins. Benefit	-0.00657	-0.00105	-0.0128	-0.000303	1.16e-05					
	(0.0133)	(0.00123)	(0.0151)	(0.000572)	(0.00120)					
EU immigrant · Exp. social ins. Benefit · Min. wager	-2.347	-0.165	-1.389	-0.100**	-0.264***					
	(1.677)	(0.130)	(1.126)	(0.0427)	(0.0882)					
Years of residence <10 years	1.871***	0.168***	1.680***	0.0325***	0.0556***	1.881***	0.174***	1.643***	0.0336***	0.0566***
	(0.249)	(0.0184)	(0.175)	(0.00716)	(0.0147)	(0.257)	(0.0190)	(0.179)	(0.00723)	(0.0149)
Years of residence 10-20 years	1.013***	0.0912***	0.855***	0.0233***	0.0386**	1.056***	0.0968***	0.847***	0.0229***	0.0355**
	(0.272)	(0.0199)	(0.187)	(0.00793)	(0.0164)	(0.286)	(0.0212)	(0.195)	(0.00780)	(0.0158)
Years of residence 20-30 years	1.100***	0.0911***	0.888***	0.0151**	0.0224	1.125***	0.0974***	0.827***	0.0124*	0.0166
	(0.239)	(0.0180)	(0.166)	(0.00659)	(0.0137)	(0.254)	(0.0191)	(0.178)	(0.00678)	(0.0142)
Manual intensity	0.0518***	0.00521***	0.0631***	0.00211***	0.00497***	0.0520***	0.00507***	0.0610***	0.00208***	0.00489***
	(0.00628)	(0.000461)	(0.00421)	(0.000260)	(0.000564)	(0.00652)	(0.000483)	(0.00422)	(0.000277)	(0.000600)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAF2 FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	164,443	164,443	164,443	164,443	164,443	149,058	149,058	149,058	149,058	149,058
R-squared	0.571	0.554	0.631	0.389	0.373	0.580	0.560	0.637	0.395	0.380

Source: Labor Force surveys 2003-2012, OECD Statistics 2003-2012, O*NET, EurOccupations and National Health Insurance Fund for Employed Workers 2014-2016 for working condition indicators PAFR, PATD, PAPD, PDTD and PDPD. Note: weighted OLS estimation with robust standard errors clustered at the department-year level and weights provided by the LFS. Control variables include: gender, age, age squared, civil status, children, diploma level, years of residence in the host country (<10 years, 10-20 years and 20-30 years, the excluded category being more than 30 years), manual intensity index of the job, size of the establishment or plant where the individual works (between 10 and 50 employees, between 50 and 200 employees and more than 200 employees) and whether the individual has a permanent contract. Significance levels are $***(p < 0.01)$, $**(p < 0.05)$ and $*(p < 0.1)$.