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The impact of immigration on the employment and wages of native workers

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ABSTRACT

We analyze the impact of the immigration influx that took place during the years 2000–2007 in Greece on labor market outcomes. We employ a search and matching framework that allows for skill heterogeneity and differential unemployment income (search cost) between immigrants and natives. Within such a framework, we find that skilled native workers, who complement immigrants in production, gain in terms of both wages and employment. The effects on unskilled native workers, who compete with immigrants, on the other hand, are ambiguous and depend first on the presence of a statutory minimum wage and second on the way that this minimum wage is determined.

1. Introduction

Despite the ongoing effects of the recent economic crisis, in 2010 the total number of international migrants in the world was estimated at 214 million – up from 191 million in 2005 (World Migration Report, 2011, p. 49). Roughly 1 in 32 of world's population is an immigrant. Movements at these high numbers do not go unnoticed. Today immigration is one of the most divisive issues. In 2011, on average 52% of Europeans[1] and 53% of Americans saw immigration as more of a problem than an opportunity (Transatlantic Trends, 2011, p. 2). In the same year, the percentage of the respondents who think that there are "too many" immigrants was 47% in the US, 48% in Spain and in Italy and 57% in the UK (Transatlantic Trends, 2011, Chart 3, p. 8). Responding to these attitudes towards immigration, almost every political party in the developed world has included this issue in its agenda.

This paper studies the effects of immigration on the host country and in particular on the labor market outcomes for native workers. For this purpose, it employs a search and matching model of the labor market (e.g., Diamond, 1982 and Mortensen and Pissarides, 1994) amended with immigration. Accordingly, unemployment exists due to frictions in the labor market and job entry responds endogenously to market incentives. Hence, this approach allows us to analyze the effects

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[1] The countries that participated were France, Germany, Italy, Spain and the UK.

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of immigration on unemployment and wages that result from the impact of changes in the availability of jobs on the bargaining position of workers.

Our basic model shares common elements with Chassamboulli and Palivos (2013). First, it allows for the presence of differential unemployment gains/costs between natives and immigrants, which serves to explain the equilibrium wage gap between otherwise identical native and immigrant workers. This feature generates also the possibility that immigration improves the employment and wage prospects of competing natives, since immigrants, who have a lower outside option, are willing to accept lower wages. Hence, an immigration influx lowers the average wage that firms expect to pay, leading to more job entry and consequently a better bargaining position for native workers. Second, we incorporate in the set-up skill heterogeneity among native workers as well as between natives and immigrants. Immigrants, who are all assumed to be unskilled, are perfect substitutes in production for unskilled and imperfect substitutes for skilled native workers. Thus, an increase in immigration, ceteris paribus, lowers the marginal product (price) of the unskilled and raises that of the skilled native workers. In an important extension of the basic model we also allow for the presence of a minimum wage, which is binding and applies to a substantial percentage of the labor force. We analyze two cases: one in which the minimum wage is indexed to the wage of the skilled workers and one in which it is a fixed proportion of the average wage.

We calibrate the model to the Greek economy and find that the impact of the increase in immigration that took place between 2000 and 2007 is positive on the overall net income of natives. Moreover, as expected, it lowers the unemployment and raises the wage rate of skilled native workers. This occurs because unskilled immigration influx raises the marginal product of skilled labor; thus, it raises its wage and lowers its unemployment. As regards the unemployment rate of unskilled labor, the entrance of unskilled immigrants lowers the expected employment cost, owing to the lower wages paid to immigrants, and encourages unskilled job entry. This leads to a lower unemployment rate. As for the wage of unskilled native workers, on the one hand, the higher availability of unskilled jobs strengthens their bargaining position and pushes their wage up, but, on the other, the fall in their marginal product, due to the relatively higher quantity of unskilled labor, causes their wage to fall. In our baseline calibration we find the overall impact on the wage of unskilled natives to be negative. Nevertheless, the results change once we allow for a minimum wage. If the minimum wage is indexed to the wage of the skilled workers, then following an increase in immigration, both the skilled and the unskilled wage go up. If on the other hand, the minimum wage is a fixed percentage of the average wage, then the unskilled wage is lower. Also, in the first case the unemployment rate increases, while in the second it may go either up or down, depending on the relative size of two conflicting effects coming from the decrease in the price of unskilled labor and the higher number of immigrants.

There have been a large number of empirical studies that investigate the impact of unemployment on the labor market outcomes in the host country. Among the most recent are Borjas (2003) and Borjas et al. (2008), who find a large negative wage effect on native workers, and Card (2009) and Ottaviano and Peri (2012), who find the same effect to be relatively small and often positive. Among the key issues behind this disagreement is the elasticity of substitution between native and immigrants in the same skill group. While the first set of studies assumes that it is infinity, i.e., natives and immigrants with the same education and experience characteristics are perfect substitutes, the second set finds this elasticity to be large but finite, e.g., Ottaviano and Peri estimate the elasticity between unskilled immigrant and native workers in the US to be between 6.5 and 20; Manacorda et al. (2012), using UK data, find it even smaller. Palivos et al. (2011) and Chassamboulli and Palivos (2013) investigate the effects of this elasticity, in a neoclassical growth model and a "search and matching" framework of the labor market, respectively. Instead, throughout this study, we assume this elasticity of substitution to be infinite, i.e., unskilled immigrants and native workers are perfect substitutes, and concentrate on some of the other factors that seem to play a role, namely, the impact of immigration on the market incentives for job creation in different institutional settings.

Most of the theoretical studies that analyze the effects of immigration do so within the standard neoclassical growth model, where unemployment is often absent; examples include, but are not limited to, Ben-Gad (2004, 2008), Moy and Yip (2006), and Palivos and Yip (2010). To the best of our knowledge, the only other papers that analyze immigration within a search framework are those of Ortega (2000), Liu (2010) and Chassamboulli and Palivos (2013).

Ortega (2000) considers a two-country model where workers decide whether to search in their own country or immigrate and ranks the steady-state equilibria that emerge. In that sense, the scope of his paper is broader than ours. Ortega's analysis also takes into account the positive impact of immigration on job entry due to firms anticipating that they will pay lower wages to immigrants that have higher search costs. However, he assumes that worker productivity is constant and therefore independent of the immigration influx. Moreover, since he considers only one type of labor, his analysis overlooks both the negative effect on the marginal product of native workers and the across-skill externalities that arise when otherwise identical natives and immigrants compete for the same types of jobs.

Liu (2010) concentrates on the welfare effects of illegal immigration within a dynamic general equilibrium model with search frictions. The presence of search frictions allows him to identify a new channel through which immigration can alter domestic consumption: intensified job competition from illegal immigrants lowers the job finding rate of native workers and forces them to accept lower wages. Nevertheless, he does not consider the important case where different outside options (unemployment incomes or search costs) between natives and immigrants exist. Furthermore, in his model all wages are bargained and there is no minimum wage.

Finally, our previous work considers both of the channels that we mentioned above (differential unemployment gains and variable marginal products) through which immigration affects wages and unemployment. Nevertheless, apart for several other differences with this paper, e.g., different production function, data, type of immigration, etc., it does not consider the case where a minimum wage is present, which is a crucial feature of the current paper.