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Wages, Taxes… and Prices: Global Migration and the Real Income of Europeans

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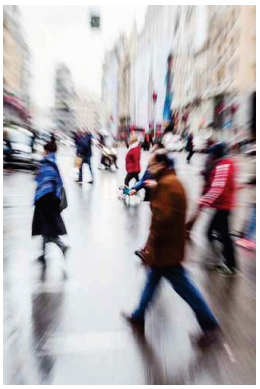
The rising mobility of people has triggered lively debates over the societal and economic consequences of global migration. Contrary to popular perceptions, the academic literature has identified relatively small labor market and fiscal responses to migration. However, most existing studies have disregarded the effect of global migration on the market size, on firms' entry/exit decisions, and on the variety of goods available to consumers. By affecting the variety of goods, migration-driven changes in market size influence the consumer price index and the real income of people. This note suggests that this market-size channel is crucial to understanding the economic consequences of recent migration flows. On average, the 2000-2010 inflows and outflows of migration decreased the consumer price index by 1.4 percent in the EU15. Although the labor market and fiscal responses to migration are non-negligible in some countries, the market-size effect is a greater source of variability – usually a source of gain – in real income.

In Europe as in other industrialized regions, the international movement of people has become a source of lively, political and academic debates. One of the main reasons for this is that the size and the structure of international migration have drastically changed since WW2. In particular, the EU15 countries have hosted more and more immigrants; and an increasing number of them originate from countries that are economically, geographically and culturally more distant from Europe. **How have these flows affected the real income of Europeans?** So far, the academic literature has identified relatively small effects on wages and tax rates. This note suggests that market-size effects (i.e., variations in consumer prices induced by the migration-driven changes in the aggregate demand and entrepreneurship) might dominate the wage and fiscal responses. **This market-size channel is a source of gain for European citizens**; it is central to understanding the economic consequences of recent migration flows.

WORRIES ABOUT GLOBAL MIGRATION ARE ON THE RISE



Between 1960 and 2010, the foreign-born population living in high-income countries increased much more rapidly than the total population, boosting the average proportion of foreigners from 4.5 to 11.0 percent (+6.5 percentage points). A remarkable fact is that this change is totally explained by the inflow of immigrants from developing countries, whose share in the total population increased from 1.5 to 8.0 percent. Similar patterns were observed in the 15 member states of the European Union (henceforth, EU15). **The EU15 average proportion of foreigners increased at a fast pace, from 3.9 to 12.2 percent** (+8.2 percentage points) over the same period. Although intra-European movements have been spurred by the Schengen agreement, the EU15 proportion of immigrants originating from developing countries also increased dramatically, from 1.2 to 7.5 percent (+6.3 percentage points).

In this context, the rising worries about global migration are legitimate. The 2014 edition of the Transatlantic Trends on Immigration (1) reveals that about 60 percent of European citizens view emigration and immigration as a problem and not as an opportunity. Worries are particularly important about immigrants from developing countries; 56 percent of Europeans expressed concerns about extra-EU immigration, while only 43 percent perceive intra-EU migration as a problem. Public opinions are partly governed by non-economic reasons such as the perceived negative effects of immigration on social cohesiveness, national identity, crime, terrorism, etc. However, attitudes towards immigration are systematically correlated with two major economic concerns: its perceived adverse labor market and fiscal effects. The European Social Survey data for the year 2014 (2) show that only 26.0 percent of European respondents believe that immigrants contribute positively to public finances, and only 35.9 percent think that immigrants create new jobs for the natives.

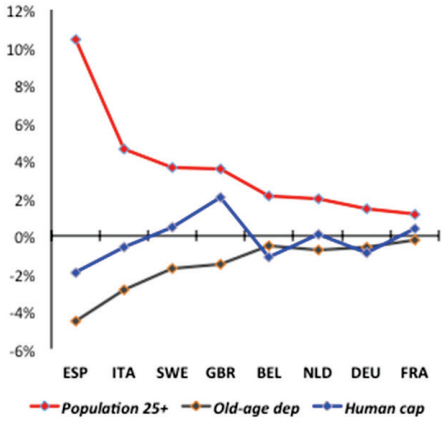
(1) http://trends.gmfus.org/immigration-2013/ (2) http://www.europeansocialsurvey.org/

GLOBAL MIGRATION AND REAL INCOME: CHANNELS OF TRANSMISSION

By affecting the socio-demographic characteristics of sending and receiving countries (see Figure 1), migration induces multiple effects on the economy. First, migration influences the skill structure of the labor force, thus impacting wage and employment disparities between groups of workers as well as the level of total factor productivity. Second, migrants bring cultural diversity to their host country, which induces complementarities on the labor market or in the innovation sector. Third, migration impacts the age structure of the population, which governs the number of net contributors to and net beneficiaries from the welfare state and other public interventions. Fourth, migration affects the geographical distribution of consumers, with important consequences on the size of the aggregate demand for domestic goods and services, firms' entry and exit decisions, and the variety of goods available to consumers.

Figure 1 : Socio-demographic effects of global migration
(Percentage of deviation from a no-migration counterfactual)

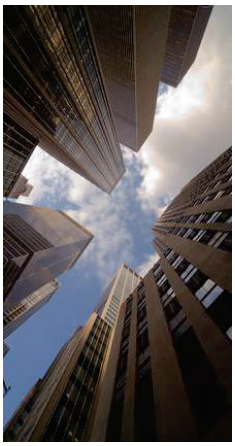
Note :
Figure 1 depicts the effect of the 2000-2010 global migration flows (i.e. net inflow of foreigners and outflow of natives) on the size of the population aged 25+, on the old-age dependency ratio (ratio of 65+ to 25-64), and on the proportion of college graduates in the population aged 25-64. Results are provided for 8 European countries and for the year 2010. In all countries, migration flows drastically increased the adult population size, and decreased the old-age dependency ratio. The effect on human capital varies across countries. It is positive in the UK, negligible in Sweden, Italy, the Netherlands and France, and negative in Spain, Belgium and Germany.



In the academic literature, **a growing consensus on how to formalize and quantify the macroeconomic effects of global migration** has emerged due to the development of new theoretical foundations (mainly, the nested production function that incorporates imperfect substitution between immigrants and natives with similar education levels) and to the availability of migration data. However, economists have usually investigated the channels of transmission of migration shocks in isolation, relying on partial equilibrium models. Little is known about their relative magnitudes and their interactions.

For example, changes in total factor productivity affect wages, the demand for goods and trade flows. Simultaneously, changes in wage inequality and prices directly influence the fiscal impact of migration, through labor income and consumption tax revenues. In addition, geographical disparities in prices and goods variety govern the interactions between countries through the incentives to trade. Assessing the welfare impact of migration on non-movers therefore requires accounting for the interactions between countries as well as for the interactions between different transmission channels. The results reported in this note build on a recent model that combines the major transmission channels of migration shocks into an integrated, multi-country model with heterogeneous individuals and firms (Aubry, Burzynski and Docquier, 2016). This model allows for quantifying the effect of each channel, for identifying the dominant ones, and for comparing the between- and within-country redistributive effects induced by the 2000-2010 inflows and outflows of migrants.

Our multi-country model endogenizes the effect of global migration on nominal wages (assuming full employment), **tax rates and good prices in 35 trade-interdependent regions** (the 34 OECD member states and the rest of the world). It relies on well-established specifications used in the existing literature. The wage responses are modeled as in Card (2009) or Ottaviano and Peri (2012), who formalized the substitution and complementarity forces between migrant and native workers. The tax responses are modeled as in Storesletten (2000) or Chojnicki et al. (2011), who formalized the effects of international migration on taxes, welfare benefits and public consumption. The price responses are modeled as in the "love-for-variety" framework of Krugman (1980). The latter is a monopolistic competition model that endogenizes the variety of goods produced in a country as a function of the market size. By changing the mass and the type of consumers in origin and destination countries, migration affects the aggregate demand for goods, the number of firms, the available product diversity, and the consumer price index. The "love-for-variety" mechanism has been extensively used to quantify the large effect of the trade-induced growth in product variety on welfare (see Broda and Weinstein, 2006). It has been incorporated into "migration models" by Iranzo and Peri (2009) and by di Giovanni et al. (2015).



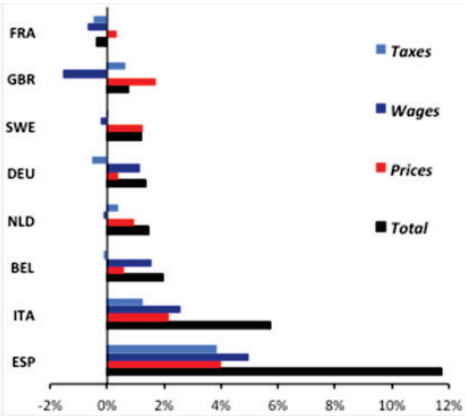
MIGRATION AND REAL INCOME OF NON-MIGRANT EUROPEAN CITIZENS

In the parameterized version of the model, country-specific variables are calibrated so as to perfectly match the observed economic and socio-demographic characteristics of all countries in the year 2010. Preference and production parameters – the elasticities of substitution – are common to all countries and are taken from the empirical literature. To compute the real income responses to global migration, the model is simulated under a counterfactual scenario, namely a repatriation of the 2000-2010 flows of international migrants to their origin country. This allows for quantifying the impact for the college-educated (see Figure 2.a below) as well as for the less educated, non-migrant citizens (see Figure 2.b), and to identify the relative contribution of the wage, tax and price channels.

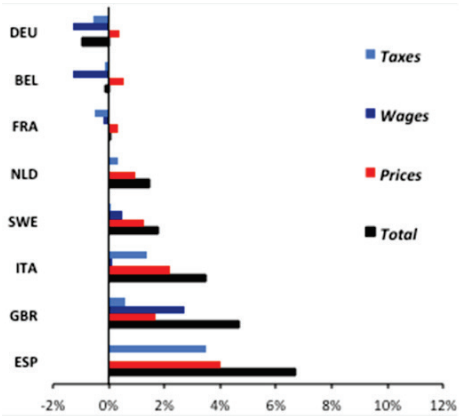
Our numerical simulation experiments reveal that **recent migration flows created many winners and few losers among European citizens**. As far as college-educated workers are concerned, the real income response to global migration is positive in all countries except France (where the real income of college graduates decreases by 0.4 percent). The (weighted) average gain amounts to 2.9 percent. The market-size mechanism increases the real income by 1.4 percent, whereas the average fiscal effect equals 0.6 percent, and the average wage effect equals 1.0 percent. As for the less educated, the real income response to global migration is positive in all countries except Belgium (-0.1 percent) and Germany (-1.0 percent). The average gain amounts to 2.1 percent. The price and tax responses are identical to those obtained for the highly skilled (+1.4 and +0.6 percent, respectively), whereas the average wage effect amounts to 0.2 percent only. Very similar results are obtained if trade is ruled out, under various fiscal rules, or when the elasticity of substitution between varieties varies within the range of values provided in the empirical literature.

Figure 2 : The real income response to global migration

2.a. College-educated workers



2.b. Less educated workers



Similar results are obtained for the other OECD countries. Overall, global migration between 2000 and 2010 increased the real income of 69.1 percent of the OECD non-migrant population aged 25 and over. This proportion amounts to 83.0 percent if one considers the 22 OECD countries whose GDP per capita is above USD 30,000. The winners mainly reside in net receiving countries; their gains can be important and are essentially due to the entry of immigrants from non-OECD countries, which induces large market-size effects. On average, the market-size effect increases the real income of all workers by 1.0 percent in the OECD countries, whereas the average fiscal effect equals 0.4 percent, and the average labor market effect equals 0.1 percent for college graduates and 0.2 percent for the less educated. The latter wage effects are driven by the complementarity between immigrant and native workers.

Although the wage and fiscal responses to global migration are non negligible in some cases, the greatest source of variability in real income comes from the market-size effect. It is an important missing ingredient in the majority of studies on the welfare consequences of migration, and a mechanism that is very difficult to internalize by the participants in opinion poll surveys. **Three implications result from this**. First, as the market-size channel similarly affects all residents of a country, the between-country effects of global migration exceed the within-country ones. Second, important gains are due to the inflows of immigrants from non-OECD countries, which induce large and positive effects on market size. Third, intra-OECD migration is a zero-sum game with many losers (i.e. countries experiencing net emigration flows) and a few winners (i.e. countries experiencing net immigration flows).

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