



## Is there an impact of immigration on productivity? The (assortative) matching channel

Immigration is a highly debated topic among scholars and a burning issue for policy makers. It has been often considered as a simple labor supply shock, with expected negative consequences on the wage of native workers (Borjas 2003). However, immigration has been recently studied through new perspectives and recognized as a complex phenomenon. The recent literature has shown that local labor markets adjust through several channels to positive changes in the number of immigrant workers. First, a larger availability of immigrant workers in the local labor market allows firms to re-allocate tasks between immigrant and native workers based on their respective comparative advantage: native workers move towards communication intensive (Peri Sparber tasks and 2009) with positive effects on the productivity of firms

(Mitaritonna et al. 2017; Beerli et al. 2020). Second, migration has been shown to increase innovation and the patenting activity of firms (Terry et al. 2023; Mayda et al. 2022). Finally, immigrant workers bring production knowledge at destination and boost the efficiency of firms (Bahar et al. 2024). This recent set of evidence proves the complexity of the channels through which local labor markets adjust to immigration flows and highlights the key role of firms in shaping the labor market effects of immigration; incidentally, this also contributes to explain why previous literature has found weak (null) negative wage effects for immigration (Card 2001).

In a recent paper (Orefice and Peri, 2020), we uncover a new mechanism through which immigration may spur productivity and contribute to offset the expected negative wage effect of immigration: the assortative matching of firms and workers in the local labor market. The inflow of new immigrant workers coming from a diverse set of origins with different education systems, cultures and selection to migration, induces the widening of the distribution of workers' types (abilities) in the local labor market (i.e., the worker distribution type becomes more dispersed). If employers have imperfect information on the actual type of workers, such a widening in the distribution of workers' types pushes firms to increase their screening efforts in order to hire the "desired" worker. This leads to an increase in the degree of positive assortative matching in the local labor market (i.e., the good worker for the good firm). In presence of complementarity in production, a stronger degree



of assortative matching increases the average productivity of firms in the local labor market and the wage inequality between low – and high – productive workers (hired respectively by low – and high – productive firms after screening).

Orefice and Peri (2020) use French employer-employee data in the period 1995-2005 and adopt an Instrumental Variable (|V)approach to infer the causal effect of a within district change the share of immigrant in workers on the degree of assortative matching<sup>1</sup>. We

measure the degree of assortative matching as the rank correlation between firm and worker types in district each French and The firm type vear. (i.e.. productivity) is approximated by value added per worker French (from balance sheet data. Ficus/Fare), while the worker type is the worker-specific component from a wage decomposition à la Abowd et al. (1999). We use French employer-employee data – DADS panel – to run the wage decomposition and obtain worker types. As an alternative measure of worker type, Orefice and Peri (2020)

use the worker's residual lifetime wage<sup>2</sup>.

The baseline results in Orefice and Peri (2020) suggest that one percentage point increase in the share of immigrant workers in a French district induces a 2.9 percent increase in the strength of correlation between worker and firm types (degree of assortative matching) – see Figure 1. This corresponds to a 35% reduction in the inter-quartile difference in the strength of assortative matching across French districts.



Note: The figure reports the effect of an increase in the share of immigrants in the district on the degree of assortative matching of all workers (right) and native workers (left). Vertical lines report the 90% confidential intervals.

<sup>1</sup>The Instrumental Variable (IV) is a slight adaptation of the standard shift-share approach as in Card (2001), where authors use the predicted inflows of immigrants in France based on the migration inflows into other EU-15 countries (excluding France).

<sup>2</sup>The idea is that the average wage of a worker (net of age, sector, and business cycle determinants) during her career reveals the intrinsic capability of the individual.



This result is robust to a battery of checks using: (i) alternative proxy for workers' types (such as the residual lifetime wage), and (ii) including controls for the labor market density (i.e., number of native workers in the districts) and firms' concentration for (Herfindahl Index) in the labor market. Interestingly, the positive effect of immigration on the degree of assortative matching is stronger in immigrant-intensive sectors. where the degree of uncertainty about worker types, and therefore the incentive for firms to undertake screening is stronger.

In Orefice and Peri (2020), we also provide suggestive evidence of the mechanism through which immigration induces a stronger degree of assortative matching in French départements. Namely, we propose a set of empirical regularities indicating that a stronger assortative matching the result of a larger is screening effort of firms when facing positive immigrant labor supply shocks. First, we show that immigration increases the number of workers dedicated to the recruitment process

recruitment (i.e., personnel workers) in the district, and the number of firms with at least one worker dedicated to recruitment. Second, we show that immigration increases the degree of assortative matching also for native workers. When firms set a screening mechanism, it applies to all hirings. Finally, in line with our narrative, we show that immigration increases the number of high-productivity workers that transition from low- to high-productive firms.

On a final note, recall that assortative matching the mechanism, in presence of complementarity between workers' types and firms' types, is expected to generate an increase in the average profits of firms and an increase (decrease) of wages for high (low) productive workers. In line with these predictions, in Orefice and Peri (2020) we show that immigration in France in the period 1995-2005 had a positive effect on the average profits of firms, a positive wage effect on high-productive native workers (i.e., those who got hired from high-productivity firms) and, as a result, an increase

in the within-district wage inequality. More precisely, a one percentage point increase in the share of immigrant workers in a local labor market induced a 2.1% increase in the wage gap between high - and low - productivity workers, a 1.6% increase in the wage high-productivity native of workers, a 0.3% decrease in the wage of low-productivity native workers (but not statistically significant) and a 2.7% increase in the average profit per worker.

Worker-firm interactions and the margin of firms' responses to immigration highlighted in Orefice and Peri (2020) are of key interest to capture the full set of effects that immigration can have at destination. This effect could be overlooked in the canonical models of immigration that do not consider the specific hiring behavior of firms in presence of a larger share of immigrants resulting in a more dispersed distribution of workers' types at destination. We conclude that firms and their hiring behavior are crucial for a deep understanding of the labor market consequences of immigration.



## References

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