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ORIGINAL PAPER

Under pressure: trade competition from low-wage countries and demand for immigrant labor in Italy

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Abstract

This study examines whether trade competition from low-wage countries (LWCs) influences immigration patterns in an advanced economy. We focus on Italy between 2003 and 2013, a period characterized by rising market pressure from China and Eastern Europe. Using census data on sectoral employment, administrative records on immigrants by nationality, and disaggregated bilateral trade data, we investigate whether heightened import competition acted as a pull factor for migrant workers by exploiting the differential exposure of local labor markets. To identify the exogenous component of these trade shocks, we adopt a shift-share instrumental variable strategy, while disaggregating immigrant data by nationality allows us to control in detail for the role of local networks and for bilateral push and pull factors. Our findings indicate that trade competition from LWCs significantly increased local immigrant shares. Exploring potential mechanisms, we find indirect evidence that firms under competitive pressure sought to cut labor costs by relying on a more flexible, lower-paid workforce, primarily composed of foreign workers.

Keywords Import competition · International migration · Trade shocks · Italy

JEL Classification F14 · F16 · F22 · J61

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1 Introduction

The increase in international migration and trade has been a defining feature of the wave of globalization that gained momentum in the late twentieth century, following the fall of the Iron Curtain in Europe and the implementation of the Gaige Kaifang reforms in China. On the one hand, the liberalization of trade and investment opened new markets, leading to a surge in cross-border exchanges of goods and services, as well as heightened competitive pressure on the tradable sectors of Western economies. On the other hand, technological advancements, cultural shifts, and significant changes in the international political landscape reduced the economic and social costs of migration, prompting an increasing number of people to seek employment opportunities and improved living standards abroad. Over four decades later, it is evident that these changes set in motion complex economic, social, and demographic transformations with long-lasting consequences, profoundly shaping the current global landscape.

Because of their relevance, these transformations have become a central focus of research, giving rise to a rich body of literature that analyzes migration and trade from multiple perspectives. However, while the consequences of immigration on trade have been widely studied (e.g., Gould 1994; Peri and Requena-Silvente 2010; Felbermayr and Toubal 2012), the role of trade shocks as a potential factor influencing migration patterns remains largely unexplored. Understanding this link may offer important insights into the broader labor market consequences of globalization in advanced economies. This paper, therefore, seeks to address this gap in the literature by empirically investigating whether, and to what extent, import competition from low-wage countries (LWCs)—particularly from China and Eastern European countries (EECs)—shaped immigration patterns in Italy during the 2000s.

How might this occur? Our central hypothesis is that firms adjust to competitive pressure by increasing their reliance on immigrant labor, and we discuss two complementary mechanisms that could drive this adjustment. One draws on the downward wage rigidities often seen among native workers, which—when combined with the imperfect substitutability between natives and immigrants—can make natives relatively more expensive amid intensifying competition, leading firms to shift toward a more flexible and lower-cost immigrant workforce. Another involves a firm-selection process within a monopolistically competitive market, in which discriminatory firms face higher costs because they avoid hiring immigrants, rendering them less efficient overall and more prone to exit when pressures mount, ultimately leaving the field to non-discriminatory firms that already make greater use of immigrant labor.

It is important to emphasize that we expect these mechanisms to operate primarily as a reallocation mechanism within Italy rather than by directly inducing additional immigration from abroad. In other words, trade shocks do not necessarily "pull" more migrants into the country overall; instead, they mostly reallocate existing or incoming migrant flows by shaping their internal settlement patterns, directing those who would have migrated to Italy anyway toward exposed local labor markets where firms' trade-induced labor adjustments create relatively stronger demand for immigrant workers. That said, through their impact on the spatial configuration of migrant networks, such shocks may still exert an indirect effect on international migration flows to particular

local labor markets, as differential network densities will likely influence subsequent influxes from abroad.

Our empirical analysis examines the dynamics of Italian local labor markets between 2003 and 2013, a period marked by multiple trade shocks and significant migration inflows. To identify the effects of trade shocks from China and EECs, we rely on the instrumental variable (IV) strategy pioneered in trade studies by Autor et al. (2013). Additionally, we structure our estimation at the disaggregated nationality level to ensure the robustness of our results to potential specification bias. By leveraging detailed administrative data on the local presence of immigrants—disaggregated by sex and nationality—we are able to control for push and pull factors at the level where they effectively operate, rather than relying on aggregate proxies that typically smooth out relevant heterogeneity. For example, our approach accounts for nationality-specific local networks (Fagiolo and Santoni 2016; Piras 2020), a key predictor of subsequent immigration waves. As we show in our sensitivity analysis, retaining this granular variation is critical for isolating the trade shock from compositional changes in the immigrant population, thereby mitigating the aggregation bias that can arise in macro-level specifications. Finally, by including a set of country-of-origin-by-time fixed effects, we also control for changes in bilateral and multilateral factors that may have influenced migration to Italy. These factors include, among others, shifts in bilateral and third-party migration policies (such as the 2007 enlargement of the Schengen area, which enabled hundreds of thousands of Eastern Europeans to settle in Western Europe) and macroeconomic fluctuations that might differentially affect immigration flows from specific origins (Beine et al. 2019; Benček and Schneiderheinze 2024).

We find empirical evidence of a positive effect of trade competition from LWCs on the local presence of immigrants in Italy during the period analyzed. The effect is not only statistically robust but also economically significant, as a one-standard-deviation increase in trade shock exposure is estimated to generate approximately a 0.4 percentage point increase in the local presence of immigrants. Although we cannot directly test the proposed channels, the substantially larger response among migrants from lower-income countries offers indirect evidence consistent with the wage rigidity/cost channel mechanism.

Besides being one of the largest European countries, some of Italy's characteristics make it a particularly suitable case study. First, at the time of this analysis, Italy had a large export-oriented manufacturing sector dominated by small and medium-sized firms specialized in medium- to low-tech goods (Amighini et al. 2011). By the early 2000s, these firms were already facing increasingly intense competition from LWCs' imports, driven by largely exogenous shocks such as China's accession to the WTO, the phasing out of the Agreement on Textiles and Clothing, and the Eastern enlargements of the European common market. All these events occurred during, or just before, the first years covered by our analysis and played a significant role in accelerating the trade competition faced by large segments of the Italian industrial sector (Federico 2014).

Second, during the same period, Italy experienced a significant rise in immigration: the foreign-born population increased by around 3 million, resulting in a threefold rise in the immigrant share of the total population, which grew from roughly 2.5

to 7.5%. Although large inflows also occurred in other Western European countries, many of them already had decades-long histories of immigration. By contrast, in Italy, migration remained a relatively marginal phenomenon until the late 1990s.[1] This peculiarity is methodologically relevant because it suggests that the local employment structure in Italy was not meaningfully shaped by earlier migration patterns. As a result, we can reasonably assume that the employment shares of that time were exogenous—a key condition for isolating the causal effects of trade shocks in our empirical analysis.

Third, then as now, Italian labor markets exhibited pronounced segmentation, shaped by multiple structural divides related to regional factors (North vs. South), gender (men vs. women), age (young vs. old), contractual arrangements (standard vs. atypical), and ethnicity (natives vs. immigrants) (Bonatti et al. 2025). These divides translate into large and persistent disparities in wages, employment rates, and job security (Fellini and Guetto 2019). For instance, the less developed South has historically struggled to converge with the more industrialized North, and female labor force participation was—and remains—among the lowest in Western Europe (particularly in Southern regions). Meanwhile, young people faced—and continue to face—high unemployment and precarious contracts.

Within this multi-layered context, the ethnic dimension is central to our analysis. Substantial evidence indicates that migrants in Italy are disproportionately concentrated in lower-wage and more precarious jobs (D'Ambrosio et al. 2022), a pattern that may stem from limited job-search networks, skill mismatches, language barriers, and various forms of discrimination. Persistent wage and employment gaps between immigrants and natives (Busetta et al. 2018) may reflect taste-based or statistical discrimination, differences in unobserved characteristics, or both. Regardless of the underlying mechanisms, such segmentation weakens immigrants' bargaining power in the labor market and imposes lower effective hiring costs on employers—two conditions that are key to both mechanisms discussed earlier. On the one hand, downward wage rigidities among natives, combined with the imperfect substitutability of immigrant labor, make immigrants a relatively cheaper and more flexible input when firms are under competitive pressure, encouraging active substitution within surviving firms. On the other hand, the very existence of discriminatory tastes among some employers imposes an extra cost on those firms; when import competition tightens margins, these less efficient discriminatory firms are more likely to exit, thereby shifting the composition of surviving firms toward those with a higher propensity to hire immigrants.

This paper is related to several strands of the economic literature related to international trade and migration. First, several studies have examined the impact of trade shocks, ranging from their effects on exposed firms and domestic labor markets (Autor et al. 2013; Federico 2014; Balsvik et al. 2015; Bloom et al. 2015; Malgouyres 2017) to their influence on political dynamics (Autor et al. 2020; Caselli et al. 2020; Dippel et al. 2022). We contribute to this literature by showing that trade shocks also influence the share of migrants at the local labor market level.

Second, this paper is related to the extensive literature studying the economic, social, and political push and pull factors influencing migration flows (Mayda 2010; Beine

[1] In 1995, immigrants represented only 0.5% of the Italian population—approximately 20 times lower than in France, Germany, or the UK.

et al. 2011; Grogger and Hanson 2011; Bertoli and Moraga 2013, 2015; Beine et al. 2019; Arif 2020; Beverelli 2022; Benček and Schneiderheinze 2024) as well as the equally extensive research on the consequences of migration for host countries, where much of the focus is on its effects on natives' wages and employment opportunities (Borjas 2003, 2013, 2017; Card 2009; Ottaviano and Peri 2012; Manacorda et al. 2012; Ottaviano et al. 2013; Dustmann et al. 2013, 2016; Chletsos and Roupakias 2019; Fusaro and López-Bazo 2025). We contribute to this literature by showing that trade competition can contribute to shape migration patterns and by providing indirect evidence that firms exposed to increasing competitive pressure may increasingly rely on immigrant labor as a cost-saving strategy.

Third, recognizing the connection between migration and trade, studies have shown that immigration can foster trade by creating market linkages (Gould 1994; Head and Ries 1998; Dunlevy and Hutchinson 1999; Girma and Yu 2002; Peri and Requena-Silvente 2010; Bastos and Silva 2012; Felbermayr and Toubal 2012; Ariu 2022; Marchal and Sabbadini 2023), as well as that immigrant workers can influence firm performance (Mitaritonna et al. 2017; Ottaviano et al. 2018; Sabbadini 2024). By reversing the direction of causality, this paper suggests that not only can the presence of migrants affect trade, but trade competition can also affect migration. In reversing this nexus, our paper aligns with the work of Tian (2024), who recently showed that positive trade shocks induced Chinese local authorities to relax migration restrictions to fuel growth. Complementing this perspective, our work shows that negative trade shocks also increase the reliance on immigrant labor, driven by competitive pressures that force firms to reduce costs by adjusting their workforce composition.

The remainder of the paper is organized as follows. Section 2 discusses two possible channels through which trade competition may influence the demand of immigrant workers. Section 3 describes the data and methods, detailing our strategy for identifying the exogenous component of trade shocks and controlling for other push and pull factors. Section 4 presents the empirical findings along with a series of robustness checks. These results are further discussed in Sect. 5, which also explores potential mechanisms driving the observed effects. This section also considers the limitations of the analysis, including issues of external validity, and discusses some of its social and economic implications. Section 6 concludes.

2 Trade competition and immigrant labor: mechanisms of labor demand adjustment

To provide a conceptual foundation for our analysis, we discuss two distinct mechanisms explaining how heightened international competition from LWCs can lead to an increased reliance on immigrant labor. We distinguish between a *cost channel*, driven by wage rigidities and the imperfect substitutability between immigrant and native workers (in line with Venturini and Villosio 2018), and a *selection channel*, where competitive pressure pushes less efficient, discriminatory firms out of the market.

The first mechanism, which we will refer to as the "cost channel" (or "wage rigidity" channel), operates through the differential cost adjustments of native versus immigrant labor. This channel relies on two common assumptions that seem plausible for the

Italian case: the imperfect substitutability between native and immigrant workers (e.g., Ottaviano and Peri 2012) and the presence of asymmetric wage rigidities (e.g., Fullin and Reyneri 2011; Lessem and Nakajima 2019). We assume that prior to the trade shock, firms operated in equilibrium, optimizing their mix of native and immigrant labor based on prevailing productivities and wages. The critical distinction lies in how these wages respond to downward pressure. Native wages are assumed to be downward rigid due to institutional factors such as collective bargaining agreements, stronger employment protection, and higher reservation wages. In contrast, immigrant workers—who often have lower reservation wages, less bargaining power, and operate in more flexible segments of the labor market—have wages that are more responsive to changing economic conditions. When a negative trade shock pushes down prices, firms face a contraction in the marginal product of their inputs. To restore profit-maximizing conditions, they must reduce production costs. However, since only native wages are downward rigid, native labor becomes relatively more expensive. In response, firms adjust by substituting away from the now relatively costlier native workers. This substitution leads to a higher equilibrium share of immigrant employment.

An alternative yet compatible mechanism, the selection channel, focuses on how competition reshapes the industrial landscape through firm exit. This view assumes a market with monopolistic competition and heterogeneous firms (à la Melitz 2003) that are distinguished by their "taste" for discrimination (à la Becker 1957). On the one hand, "non-discriminatory" firms hire workers based solely on productivity and market wages. "Discriminatory" firms, on the other hand, harbor a prejudice against immigrant labor, which translates into an additional non-monetary cost for hiring migrants. This taste for discrimination renders discriminatory firms structurally less efficient: by deviating from the optimal input mix, their production costs are strictly higher than those of non-discriminatory firms using the same technology. When international competition intensifies and markups are squeezed, the least efficient firms are the most likely to exit. Since discriminatory firms are inherently less cost-efficient, they are disproportionately driven out of the market. The surviving population of firms is therefore composed largely of the pragmatic, non-discriminatory type that already employed a larger share of immigrant labor. This process alters the market's composition in favor of firms more open to immigration, thereby increasing the aggregate demand for immigrant labor. Note that the underlying assumptions regarding market structure and discrimination are realistic for the Italian context (Busetta et al. 2018; Caselli et al. 2023).

These two channels offer different but converging explanations for the labor demand adjustment. The cost channel describes a within-firm adjustment (intensive margin) where firms actively substitute labor types to minimize costs. The selection channel describes a between-firm adjustment (extensive margin) where the average firm characteristic changes due to the exit of discriminatory firms. While based on different assumptions, in practice, these mechanisms can operate simultaneously, reinforcing each other.

Finally, it is important to note that these mechanisms are not confined to tradable sectors. To the extent that the effects of a trade shock spill over and depress local aggregate demand, these same cost and selection pressures can operate in non-tradable sectors. As a result, firms in unrelated sectors may also end up relying relatively more

on immigrant labor to maintain cost-competitiveness. Taken together, these direct and indirect shifts generate the local pull factor that reallocates migrant settlement patterns across the country.

3 Empirical strategy

3.1 Data

The empirical analysis is based on a panel data set of Italian local labor markets for the years 2003, 2008, and 2013. The boundaries of the local labor markets employed in this study follow those of the 784 "labor market areas" (LMAs) identified by the Italian Institute of Statistics (Istat) for the year 1991. On average, LMAs consist of about 10 municipalities and have a population of about 70,000. Importantly, being defined on the basis of economic rather than administrative criteria, local labor markets refer to economically integrated areas that, by construction, are meant to minimize economic spillovers and therefore represent the most suitable geographical units to identify the effects of trade shocks. It is also important to note that in 1991, neither international migration nor trade competition from China and Eastern Europe were economically relevant phenomena, and hence, it can be plausibly argued that the use of 1991 LMAs as analytical units does not raise endogeneity issues.

Our panel combines three main sources of data: census information on local economic structures, administrative records on immigrant populations, and data on national imports. Specifically, we draw on the 1991 and 2001 Istat Censuses of Industry and Services (CIS), which report the number of workers employed in each three-digit Nace sector for every municipality. Information on the local presence of immigrants comes from the Istat GeoDemo database, which crucially provides details on migrants' nationality and sex. Finally, for trade flows, we use bilateral trade data at the six-digit HS level, extracted from the United Nations Comtrade database. We then map six-digit HS products to three-digit Nace sectors through the Eurostat RAMON metadatabase.

Figure 1 illustrates the broad trajectories of immigration and import competition from LWCs during the period covered by our analysis. Over the course of a decade, the share of immigrants in the total population at the national level increased threefold. With the exception of 2009, positive growth was observed each year, although the pace slowed following the financial crisis. Imports from China and EECs also rose steadily until the onset of the crisis, after which they faltered. Notably, despite an initial rebound, imports declined again during the European debt crisis, which impacted Italy and other highly indebted countries particularly severely. The dynamics of immigration and import competition, measured as import per worker, at the LMA level, are reported in Table 1.

Finally, it is useful to briefly situate these data within the Italian institutional framework. During the period of analysis, the admission of non-EU workers was strictly centralized and regulated by the central government, with no legal discretion left to local administrative units. Consequently, institutional factors governing migration flows were spatially invariant across LMAs. As detailed in Sect. 3.3, our empirical

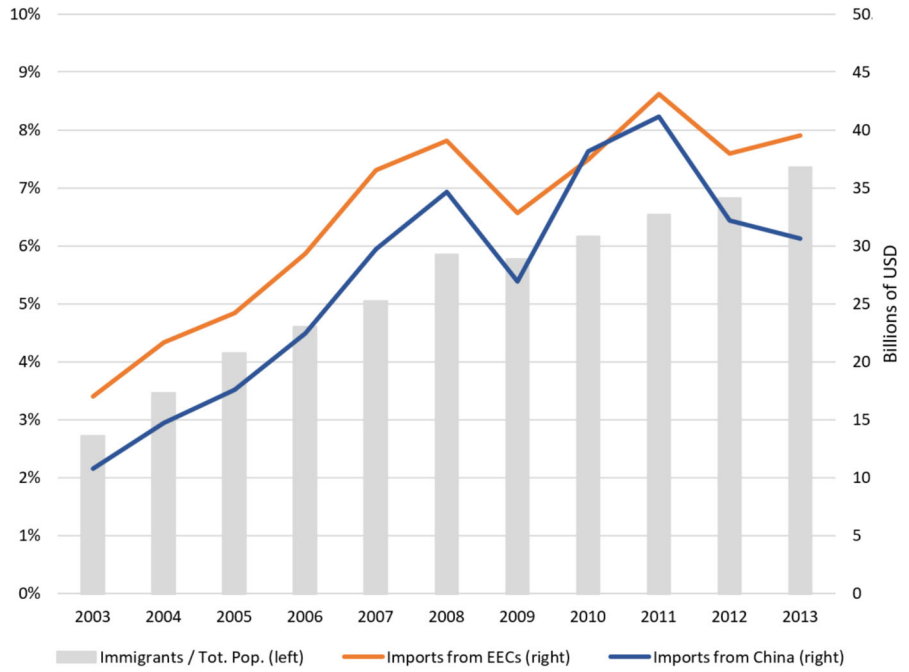

Fig. 1 Immigration and import competition, Italy. *Notes*. This reports the percentage of immigrants in Italy (left-hand scale) and the volumes of imports from China and EECs to Italy (right-hand scale). Source: Own elaboration based on data from Istat GeoDemo and UN Comtrade

strategy accounts for these national-level policy shifts through the inclusion of country-of-origin×time fixed effects.

3.2 Measuring the local exposure of import competition from LWCs

We proxy the local exposure to the trade shock from LWCs by means of a shift-share measure of the local change in imports per worker. We design this measure by interacting the local level of sectoral employment with national-level data on sectoral imports from a set of countries that, during the 2000s, were characterized by a relatively low cost of labor. In this way, the local exposure to trade competition is jointly driven by the cross-sectional specialization of LMAs (calculated on the basis of CIS 2001) and the longitudinal changes in country-level sectoral imports from LWCs. In other words, LMAs specialized in those manufacturing sectors that produce the same class of goods whose imports from China and Eastern Europe are on the rise will be more exposed to the trade shock. In the context of international trade, this approach gained momentum after the seminal work of Autor et al. (2013) and rapidly became the standard in the applied literature on the effects of trade shocks.

Table 1 Migration and trade competition: descriptive statistics

	2003	Δ 2003–2008	Δ 2008–2013
IMM_i^{pct}	2.852	2.725	1.293
	(2.224)	(1.910)	(0.910)
$IMM_{i,c}^{pct}$	0.014	0.014	0.007
	(0.098)	(0.113)	(0.066)
IPW_i^{China}	0.535	0.875	−0.241
	(0.465)	(0.715)	(0.313)
IPW_i^{EECs}	0.854	0.559	0.086
	(0.689)	(0.563)	(0.347)

Notes. This reports descriptive statistics for the variables, showing the initial level (2003) and subsequent 5-year changes. Standard deviations are in parentheses. IMM_i^{pct} and $IMM_{i,c}^{pct}$ represent the average percentage of immigrants in LMAs, aggregated and by nationality c, respectively. IPW_i^{China} and IPW_i^{EECs} denote the average value of imports per worker (constant 2010 US dollars) from China and EECs, respectively

Formally, we define the exposure of labor market i at time t to import competition from the group of low-wage countries lwc as follows:

$$\Delta IPW_{i,t}^{lwc} = \sum_s \eta_{i,s}^{01} \frac{\Delta IMP_{s,t}^{lwc}}{L_s^{01}}, \tag{1}$$

where $\Delta IMP_{s,t}^{lwc} = IMP_{s,t}^{lwc} - IMP_{s,t-1}^{lwc}$ represents the change between $t-1$ and t in the value of goods imported from low-wage countries lwc that are domestically produced by sector s. Meanwhile, $\eta_{i,s}^{01}$ denotes the 2001 employment share of sector s in LMA i, defined as $\eta_{i,s}^{01} = L_{i,s}^{01}/L_i^{01}$. Finally, L_s^{01} stands for national employment in sector s in 2001. As low-wage countries, we separately consider China and a group of eleven Eastern European countries (EECs) that includes Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. All trade values are expressed in constant 2010 US dollars.

Finally, because the shift–share approach is prone to generate extreme outliers, we trimmed the top and bottom 1% of the ΔIPW^{lwc} distribution to mitigate their impact. This procedure removes a few implausible observations without affecting the robustness of our main results.

It is worth noting that this measure relies on changes in realized import volumes rather than direct policy instruments like tariff rates, as it better captures the full extent of supply-side shocks from low-wage countries—such as productivity gains, capital accumulation, or quality upgrades—that may occur independently of tariff changes. While tariff reductions are a key policy lever, they do not always translate into heightened competition if foreign capacity is limited; conversely, import surges can arise from exogenous foreign developments even with stable tariffs. By focusing on volumes and addressing endogeneity through instrumentation (detailed below),

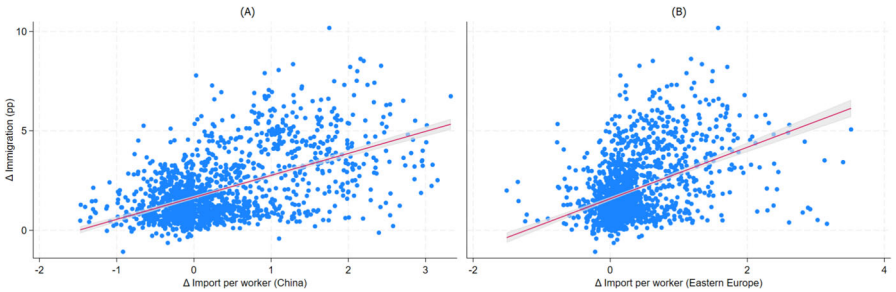

Fig. 2 Changes in immigration and import competition (2003–2008, 2008–2013). *Notes*. This reports the relationship between the changes in import per worker and in the presence of migrants over two 5-year periods (2003–2008, 2008–2013) across Italian local labor markets. Panel (**A**) refers to import from China, and Panel (**B**) refers to import from Eastern Europe. Import per worker is measured in thousands of 2010 USD, and immigrants in percentage points with respect to the 2003 population. In order to remove outliers, data on the variation in import per worker have been trimmed at the top and bottom 1%

we isolate the causal, supply-driven component of the trade shock, aligning with the established approach of Autor et al. (2013) and subsequent literature.

3.3 Empirical model

As shown by the scatter plots in Fig. 2, changes in the local percentage of immigrants are positively correlated with changes in local exposure to trade competition from China (panel A) and Eastern European countries (panel B). Both correlations are statistically significant and exhibit comparable slopes. However, relying solely on the aggregate local share of immigrants as the dependent variable may conceal important heterogeneity when assessing the impact of trade competition on migration flows.

A central concern is that immigrants are not a homogeneous group but differ along multiple dimensions, among which country of origin arguably plays a pivotal role. First, origin correlates with human capital and with less easily observable traits—such as the reserve wage—that can influence labor market outcomes. Second, it correlates with location choices: since migrant networks reduce the costs of relocating, newcomers often cluster in areas where fellow-countrymen already reside (Munshi 2003). Consequently, due to these well-known dynamics, the distribution of immigrant communities is highly uneven across regions (e.g., Bangladeshis in metropolitan Rome and Milan, Ecuadorians in Genoa and Milan, and Tunisians in Sicily).

In the case of Italy, in 2013, the top ten nationalities accounted for only three-fifths of the total number of officially registered immigrants, and 31 ethnic communities of at least 25,000 resident members were present in the country. Overall, about 50% of immigrants came from other European countries, 20% from Africa, 20% from Asia, and 8% from Latin America and the Caribbean, with Romanians, Albanians, and Moroccans representing the three most common nationalities.

Against this backdrop, a more refined estimation strategy must recognize the heterogeneity tied to migrants' nationality. Hence, we focus on disaggregating the local presence of immigrants by their country of origin. In practical terms, we estimate

a mixed first-difference model, where the dependent variable is the change in the percentage of immigrants of each nationality residing in a given local labor market (LMA). This share is defined with respect to the LMA's population in 2003, and its 5-year change is computed between 2003 and 2008 and between 2008 and 2013. Formally, our baseline specification is as follows:

$$\Delta IMM^{pct}_{c,i,t} = \beta \Delta IPW^{lwc}_{i,t} + \boldsymbol{x}'_{c,i,t\text{-}1}\boldsymbol{\vartheta} + \boldsymbol{\omega}'_{c,t}\boldsymbol{\delta} + \varepsilon_{c,i,t}\ , \tag{2}$$

where $\Delta IMM^{pct}_{c,i,t} = \frac{Immigrants_{c,i,t} - Immigrants_{c,i,t-1}}{Population^{03}_{i}}$ denotes the 5-year change in the percentage of immigrants from country c over LMA i's 2003 population, and $\Delta IPW^{lwc}_{i,t} = IPW^{lwc}_{i,t} - IPW^{lwc}_{i,t-1}$ is the corresponding 5-year change in import per worker. The term $\boldsymbol{\omega}_{c,t}$ is a set of country-of-origin×time fixed effects, and $\boldsymbol{x}_{c,i,t-1}$ is a vector of lagged controls (measured at the beginning of the 5-year period, i.e., in 2003 and 2008) that vary at the LMA and LMA×country-of-origin level. Specifically, these controls include *(a)* the local percentage of immigrants from country c in LMA i,[2] *(b)* the adjusted female-to-male ratio for migrants of each nationality,[3] and *(c)* the logarithm of the native population in the LMA. These controls capture initial LMA conditions that affect migration dynamics and help to account for path-dependency. In particular, the lagged local share of immigrants serves as a proxy not only for network effects but also for the local receptiveness toward foreign communities observed at the beginning of each period. This implicitly accounts for unobservable local institutional or social factors that may facilitate or hinder the settlement of migrants.

Following the standard approach Autor et al. (2013) and related literature, this specification exploits cross-sectional variation in trade shocks across LMAs rather than within-LMA variation in shock acceleration over time. Therefore, we do not include time-invariant LMA fixed effects, as they would absorb the primary cross-sectional differences in exposure, leaving within-LMA changes to identify the coefficients. Instead, we control for initial LMA characteristics to address path-dependency and potential time-invariant heterogeneity. Note also that the country-of-origin×time fixed effects implicitly incorporate an intercept, ensuring the model accounts for common trends across nationalities and periods.

The coefficient of interest, β, measures the average impact of a change in trade exposure on the share of immigrants for a single nationality. Since the number of nationalities in the analysis is $C = 197$, the effect of trade shocks on the overall local prevalence of immigrants is therefore given by $\beta \times C$. To implement this model, the dataset is arranged in long format across the two time intervals (2003–2008 and 2008–2013) for 784 LMAs (as defined in 1991). Thus, the maximum sample size is $C \times L \times \Delta T = 308,986$ observations.

Conducting the analysis at the LMA×country-of-origin level offers substantial advantages for causal inference. First, the lagged nationality-specific share and gender

[2] The local percentage of immigrants from country c is defined with respect to the total population of the LMA in 2003, namely $Immigrants_{c,i,t-1}/Population^{03}_{i}$.

[3] The adjusted female-to-male ratio for migrants is defined as $(Immigrants^{female}_{c,i,t-1} + 1)/(Immigrants^{male}_{c,i,t-1} + 1)$.

ratio help capture pull factors tied to the initial distribution of migrant communities. Second, the country-of-origin×time fixed effects, $\boldsymbol{\omega}_{c,t}$, absorb all time-varying bilateral and multilateral factors that might alter Italy's relative attractiveness as a destination (see Bertoli and Moraga 2013)—from macroeconomic cycles (Beine et al. 2019; Arif 2020) and visa policy changes (Duncan et al. 2020; Beverelli 2022) to more dramatic shocks such as eruptions of violence in migrants' countries of origin (McKenzie et al. 2014; Bertoli et al. 2017; Foubert and Ruyssen 2024; Wiśniewski et al. 2024). Finally, differencing over 5-year periods automatically eliminates time-invariant LMA-specific heterogeneity, reducing potential biases linked to stable local characteristics.

3.4 Endogeneity issues and IV approach

Our identification of the effect of trade competition on the local presence of immigrants faces two primary threats linked to the potential endogeneity of both the 2001 employment shares and the aggregate sectoral imports.

On the one hand, the industry mix observed in 2001—used here to gauge local exposure to trade competition—may already have been influenced by earlier trade and migration shocks. For example, early migration waves may have altered the employment structure of local labor markets, reversing the causality nexus between immigration and our measures of import competition. In a similar way, Italy's 2001 economic structure might have already been influenced by the gradual rise in trade competition from China and several Eastern European countries observed during the 1990s.

On the other hand, changes in sectoral imports may reflect unobserved domestic demand shocks rather than the exogenous increase in the competitiveness of Chinese and Eastern European exporting firms. For example, a rise in the demand for a given product category will lead to a simultaneous increase in domestic production and in imports. In this case, however, rather than suffering from an adverse trade shock, the LMAs specialized in the production of those goods will experience a period of bonanza. Assuming that local firms resort to a cheaper migrant workforce in order to cope with negative shocks, the endogeneity of Italian sectoral imports will introduce a negative bias in the OLS estimate of β.

To address these endogeneity concerns, we follow Autor et al. (2013) and construct an instrumental variable for $\Delta IPW_{i,t}^{lwc}$ that combines two elements designed to isolate exogenous supply-driven trade shocks.

First, we replace the 2001 local employment shares with those observed in 1991 (along with the 1991 LMA boundaries). In 1991, immigration accounted for only about 0.6% of the Italian population, and imports from China and Eastern Europe were negligible, so earlier trade or migration dynamics could not have materially affected the sectoral composition of local labor markets.

Second, instead of using changes in Italian sectoral imports, we instrument these with import growth from the same low-wage countries (LWCs) into a group of other high-income economies that share a similar economic structure with Italy but have business cycles that are poorly correlated with its own. The underlying logic is that

supply-driven shocks—such as productivity gains, capital accumulation, or quality improvements in China and Eastern Europe—affect all destination markets simultaneously, whereas demand-driven fluctuations remain largely idiosyncratic to Italy. By exploiting the common component of import growth across these third countries, the instrument purges domestic demand shocks and isolates the exogenous, supply-side variation in trade exposure. This approach also ensures that our measure of import competition captures shocks that tariff changes alone would miss, as foreign productivity or capacity shifts can generate large import surges even when tariffs remain unchanged.

Formally, the instrument is as follows:

$$\Delta \widetilde{IPW}_{i,t}^{lwc} = \sum_{s} \eta_{i,s}^{91} \frac{\Delta \widetilde{IMP}_{s,t}^{lwc}}{L_{s}^{91}}, \tag{3}$$

where $\Delta \widetilde{IMP}_{st}^{lwc}$ stands for the change in average sectoral import, either from China or from EECs, of a set of countries that are not members of the European Union. The terms $\eta i, s^{91}$ and L_s^{91} follow the same definitions as in Eq. 1 but are based on 1991 census data. For Chinese imports, the IV countries are Australia, Canada, Chile, Japan, New Zealand, South Korea, and the United States; for EEC imports, we use Israel, Norway, Switzerland, and Turkey.

3.5 Robustness of the shift-share instrument

Given the shift-share nature of our instrument, we test its robustness following the framework proposed by Goldsmith-Pinkham et al. (2020), which relies on the exogeneity of initial local industry shares. This choice is motivated by our setting, which features a large number of locations but a finite number of industries exposed to correlated, state-driven trade shocks (Caselli et al. 2021, 2025), a context in which the assumption of independent sectoral shocks required by alternative frameworks is unlikely to hold (Adão et al. 2018; Borusyak et al. 2022).

Therefore, before showing the results of the analysis, we assess the validity of our instruments performing the Rotemberg decomposition diagnostics, which allow us to inspect whether the aggregate IV estimate is driven by a small subset of outlier sectors. For computational reasons, we perform this analysis using the top ten immigrant nationalities, which account for most of the variation in immigrant shares. Indeed, as we will discuss in Sect. 4.2, the results based on this subsample are consistent with those obtained using the full sample.

The diagnostics confirm the robustness of our identification strategy. For the China shock (Table A1 in the Appendix), the Rotemberg weights reveal that identification comes primarily from manufacturing sectors where Chinese competition is economically relevant (e.g., Office Machinery, Toys), with no single sector dominating the estimate. Furthermore, the correlation between the industry weights and the industry-specific coefficients is negligible (−0.061), indicating no systematic bias. Regarding the EECs' instrument (Table A2 in the Appendix), while we observe greater sectoral

heterogeneity, the diagnostics suggest that this variation does not translate into systematic bias. Specifically, also in this case, the correlation between industry weights and coefficients is close to zero (0.021), suggesting that our results are not driven by some specific outlier sectors but largely reflect an average effect.

4 The impact of trade competition from LWCs on the local presence of immigrants

4.1 Baseline results

The two-stage least squares (2SLS) estimates of the model described by Eq. 2 are reported in Table 2 and constitute our baseline results. Columns 1 and 2 separately show the estimated effect of the Chinese and Eastern European trade shocks on the local presence of immigrants, while column 3 reports them jointly. Before discussing the results, it is worth noting that the first-stage regressions (Table A3 in the Appendix) indicate that the instruments are relevant, as they are positively and significantly correlated with the endogenous regressors. In particular, the average t-statistic for the correlation between the endogenous regressor and its instrument is 4.02, and even in the least favorable case, the instrument remains highly significant ($p = 0.004$). Similarly, the Kleibergen-Paap F statistics suggest that the instruments are reasonably informative. While the value for Chinese imports in column (1) falls below Stock and Yogo's 10% maximal IV size threshold, it remains well above the 15% threshold, suggesting that weak instrument issues are unlikely to meaningfully affect inference.

Table 2 Effect of LWCs import competition on local presence of immigrants (2SLS)

Dep. var.: $\Delta IMM^{pct}_{c,i,t}$	(1)	(2)	(3)
$\Delta IPW^{China}_{i,t}$	0.0037***		0.0023***
	(0.0007)		(0.0008)
$\Delta IPW^{EECs}_{i,t}$		0.0051***	0.0031***
		(0.0009)	(0.0012)
$IMM^{pct}_{c,i,t\text{-}1}$	0.2423***	0.2422***	0.2422***
	(0.0094)	(0.0094)	(0.0094)
$IMM^{ratio}_{c,i,t\text{-}1}$	−0.0007***	−0.0007***	−0.0007***
	(0.0002)	(0.0002)	(0.0002)
$Ln(NPOP)_{i,t\text{-}1}$	0.0007***	0.0007***	0.0006***
	(0.0001)	(0.0001)	(0.0001)
Country-of-origin × Time FE	Yes	Yes	Yes
Observations	293,530	293,530	293,530
Kleibergen-Paap F	11.58	42.30	23.50

Notes. LMA-clustered standard errors are reported in parentheses: $*p < 0.1$; $**p < 0.05$; $***p < 0.01$

Overall, the empirical results indicate that migration patterns observed in Italy between 2003 and 2013 were influenced by the international trade dynamics associated with rising import competition from LWCs. In particular, we find that increasing trade competition from China and Eastern Europe led to a significant rise in the percentage of immigrants in Italian local labor markets. These effects are not only statistically significant but, given their overall magnitude, are also economically meaningful. Indeed, according to the estimates in column (1), a one-standard-deviation increase in Chinese imports per worker led, on average, to a 0.46-percentage-point rise in the local prevalence of immigrants.[4] Similarly, a one-standard-deviation increase in imports from EECs resulted in a 0.39-percentage-point increase in the local presence of immigrants.

The coefficients associated with the lagged controls, which are highly significant in explaining changes in the local presence of migrants, also warrant discussion. First, we observe that larger local labor markets (in terms of native population) tend to attract relatively more immigrants. This result is somewhat expected, as smaller LMAs often correspond to provincial or rural areas. While the availability of employment opportunities for immigrants in rural or provincial regions versus metropolitan centers may vary depending on the context, larger LMAs typically offer better accessibility (e.g., higher connectivity and overall better transportation infrastructure). Additionally, evidence suggests that large metropolitan areas are generally associated with more favorable attitudes toward immigrants, which can, in turn, influence migrants' location choices (Maxwell 2019).

Second, we find that the initial presence of migrants of the same nationality is a strong predictor of future inflows, while the correlation is negative for the adjusted female-to-male ratio. The first pattern aligns with standard theories of migration networks, wherein established ethnic communities lower settlement costs for new arrivals. Furthermore, migrants of a given nationality may, on average, hold a comparative advantage in specific local labor markets, possibly due to accumulated experience or sector-specific skills that, for different reasons, can be more common among migrants from certain backgrounds. Hence, aside from lower migration costs stemming from migrant networks, the presence of ethnic communities per se could reflect certain peculiarities of the local labor demand. By contrast, the negative coefficient on the female-to-male ratio may reflect several underlying factors. One plausible explanation is tied to marital status: even after controlling for age, education, and region, female immigrants are notably less likely to be married than their male counterparts, which decreases the likelihood of new arrivals via family reunification. Moreover, a higher share of female immigrants may also be associated with unobservable local labor market characteristics that, in turn, differentially affect demand for immigrant workers.

Finally, the comparison between 2SLS and OLS estimates provides additional insight into the robustness of our results. The instrumental variable estimates are broadly similar to those obtained through ordinary least squares (Table A4 in the Appendix), reinforcing the credibility of our baseline specification. While the direction

[4] Since the coefficient indicates the effect of ΔIPW^{lwc} on each nationality c, the overall effect of a one-standard-deviation increase in exposure can be calculated as $\widehat{\beta} \times C(= 197) \times SD(\Delta IPW^{lwc})$.

and magnitude of the estimated effects remain highly consistent across methods, small but systematic differences emerge: the OLS estimates for Chinese trade shocks are slightly larger than their IV counterparts, suggesting a potential upward bias, whereas those for Eastern European trade shocks tend to be smaller, indicating a downward bias. These patterns could be due to unobserved factors that influence local immigration responses differently across trade shocks. Crucially, these biases remain stable across specifications, rather than reversing direction, further reinforcing the validity of our estimates and suggesting they reflect underlying economic relationships rather than modeling artifacts.

4.2 Robustness and sensitivity checks

In order to assess the robustness of the relationship between import competition and migration, and to better understand its underlying dynamics, we have run a number of checks. First, we address the trade-off between the exogeneity of local labor markets (LMAs) and the minimization of local spillovers by repeating our analysis using Istat's 2001 LMAs as observational units rather than those from 1991. Due to the growing integration of the Italian economy, the number of LMAs declined from 784 in 1991 to 686 in 2001. The results, reported in Table A5 in the Appendix, show no substantial differences from our baseline findings.

Second, we consider the possibility that the endowment of human capital of migrants is somehow correlated with the comparative advantages of their home country. If this is the case, immigrants are more likely to settle in LMAs that are relatively specialized in producing the same goods exported by their country of origin, thus potentially introducing a spurious positive correlation between local exposure to trade competition and the presence of immigrants from the same LWC. While our IV approach should control for this possibility, as it is meant to capture only supply-side characteristics of the increase in imports, it remains possible that some LWCs experience simultaneous increases in worldwide exports and outward migration. Therefore, in the first two columns of Table 3, we report the estimates obtained by excluding Chinese immigrants (column 1) and immigrants from EECs (column 2). The results remain very close to those of Table 2, even though the estimated coefficients are smaller. Smaller coefficients are consistent with the mechanism described above but were also expected because Chinese and Eastern Europeans are among the largest immigrant communities, and thus, their exclusion reduces $\widehat{\beta}$ by construction.

Third, given that we consider 197 migrant nationalities, the dependent variable, $\Delta IMM^{pct}_{c,i,t}$, is often zero in many LMA×country-of-origin×time cells. In fact, only a few LMAs record at least one new immigrant for each nationality over the 5-year reference period. To address this, we re-estimated our model using only the top ten nationalities, reducing the prevalence of zero observations to below 1%.[5] The results, shown in the last two columns of Table 3, show no meaningful deviation from our baseline estimates. As expected, restricting the analysis to major ethnic groups leads to larger estimated coefficients, since the sample is now concentrated on nationalities with significant inflows.

[5] In the full dataset, zeros account for approximately 70% of observations.

Table 3 Exclusion of trade partners' immigrants and analysis of top ten nationalities

Dep. var.: $\Delta IMM^{pct}_{c,i,t}$	No migrants from partners (1)	(2)	Top 10 nationalities (3)	(4)
$\Delta IPW^{China}_{i,t}$	0.0034***		0.0511***	
	(0.0007)		(0.0102)	
$\Delta IPW^{EECs}_{i,t}$		0.0039***		0.0697***
		(0.0007)		(0.0145)
$IMM^{pct}_{c,i,t\text{-}1}$	0.2356***	0.2217***	0.2538***	0.2534***
	(0.0087)	(0.0105)	(0.0108)	(0.0107)
$IMM^{ratio}_{c,i,t\text{-}1}$	−0.0007***	−0.0002	−0.0022***	−0.0021***
	(0.0002)	(0.0001)	(0.0007)	(0.0007)
$Ln(NPOP)_{i,t\text{-}1}$	0.0007***	0.0009***	0.0085***	0.0078***
	(0.0001)	(0.0001)	(0.0019)	(0.0020)
Country-of-origin×Time FE	Yes	Yes	Yes	Yes
Observations	292,040	277,140	14,900	14,900
Kleibergen-Paap F	11.58	42.29	11.44	41.72

Notes. LMA-clustered standard errors are reported in parentheses: $*p < 0.1$; $**p < 0.05$; $***p < 0.01$

Fourth, we assess the robustness of our results across migrant groups based on their region of origin. More precisely, we considered four regions: Europe, Asia, Africa, and America.[6] The results, reported in Table 4, confirm a positive and significant effect of trade competition from China and EECs on local immigrant presence, indicating that our baseline results are not driven solely by immigration from a few geographically proximate countries.

Fifth, we also test for the longitudinal stability of the results. More precisely, we assess whether the estimates are stable across the two 5-year intervals as well as for the 10-year long difference. The results, presented in Table 5, show that the effect is positive and significant only in the first period (2003–2008), while in the second (2008–2013), the estimated coefficients are not statistically different from zero. Finally, when using 10-year differences (columns 5–6), the impact of Chinese trade competition disappears, while that of EECs competition persists but loses significance.

These results do not necessarily indicate a lack of robustness, but reflect the specific economic conditions under which the proposed mechanism operates. The two sub-periods are fundamentally different for at least two reasons. First, the 2008–2013 period was dominated by the macroeconomic turmoil of the global financial crisis and the subsequent Eurozone sovereign debt crisis. These events introduced extreme volatility into international trade (cf. Fig. 1) and became the overwhelming drivers of local economic distress. As documented by Cingano et al. (2016) and Barone et al. (2018), Italian firms faced a severe credit crunch, a massive demand-side shock.

[6] "Africa" includes both North and Sub-Saharan Africa. "America" includes North America, South America, and the Caribbean. Due to their small numbers, migrants from Oceania were excluded from this analysis.

Table 4 Results by continent of origin

Depvar: $IMM^{pct}_{c,i,t}$	Europe		Asia		Africa		America	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\Delta IPW^{China}_{i,t}$	0.0064***		0.0064***		0.0064***		0.0007***	
	(0.0017)		(0.0017)		(0.0017)		(0.0002)	
$\Delta IPW^{EECs}_{i,t}$		0.0136***		0.0029***		0.0040***		0.0015***
		(0.0029)		(0.0011)		(0.0009)		(0.0004)
$IMM^{pct}_{c,i,t-1}$	0.2428***	0.2424***	0.2428***	0.3338***	0.2428***	0.1704***	0.2375***	0.2376***
	(0.0105)	(0.0104)	(0.0105)	(0.0401)	(0.0105)	(0.0139)	(0.0267)	(0.0267)
$IMM^{ratio}_{c,i,t-1}$	−0.0003	−0.0002	−0.0003	−0.0018***	−0.0003	−0.0017***	−0.0003**	−0.0003**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0001)	(0.0001)
$Ln(NPOP)_{i,t-1}$	0.0011***	0.0008*	0.0011***	0.0011***	0.0011***	0.0006***	0.0003***	0.0003***
	(0.0004)	(0.0004)	(0.0004)	(0.0002)	(0.0004)	(0.0001)	(0.0001)	(0.0001)
Cou-origin×Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	67,050	67,050	67,050	67,050	67,050	67,050	74,500	74,500
Kleibergen-Paap F	11.58	42.28	11.58	42.35	11.58	42.23	11.58	42.30

Notes. LMA-clustered standard errors are reported in parentheses: $*p < 0.1$; $**p < 0.05$; $***p < 0.01$

Table 5 Longitudinal robustness checks

	2003–2008		2008–2013		2003–2013	
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta IPW_{i,t}^{China}$	0.0013***		−0.0017		0.0008	
	(0.0004)		(0.0017)		(0.0006)	
$\Delta IPW_{i,t}^{EECs}$		0.0030***		−0.0897		0.0019**
		(0.0007)		(0.6843)		(0.0008)
$IMM_{c,i,t-1}^{pct}$	0.6395***	0.6393***	0.1216***	0.1200***	0.7649***	0.7648***
	(0.0268)	(0.0268)	(0.0116)	(0.0176)	(0.0369)	(0.0368)
$IMM_{c,i,t-1}^{ratio}$	−0.0012***	−0.0012***	−0.0005***	−0.0007	−0.0011**	−0.0011**
	(0.0003)	(0.0003)	(0.0001)	(0.0013)	(0.0004)	(0.0004)
$Ln(NPOP)_{i,t-1}$	0.0009***	0.0006***	0.0006***	−0.0028	0.0018***	0.0016***
	(0.0002)	(0.0002)	(0.0001)	(0.0263)	(0.0003)	(0.0003)
Cou-origin FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	146,765	146,765	146,765	146,765	146,765	146,765
Kleibergen-Paap F	15.78	60.47	2.401	0.0172	18.20	33.38

Notes. LMA-clustered standard errors are reported in parentheses: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

In an environment where firm survival was dictated by these crisis-related factors, the specific, supply-side pressure from LWCs import competition naturally had a less discernible independent effect, which also explains why our instrument loses its predictive power.

Second, by 2008–2013, the trade competition from LWCs—which had surged earlier in the decade—had transitioned from being a new shock to an established feature of the economic environment. Our measure of exposure is based on the 2001 employment mix, and our instrument relies on the 1991 mix. Over time, as intense competition and successive crises triggered structural changes in Italian local labor markets, local specialization patterns shifted (Federico 2014). As a consequence, our initial measure of trade exposure may have lost some of its relevance by the second period, precisely because the sectors most vulnerable to competition had already contracted, disappeared, or adapted.

Therefore, our interpretation is that the effect of trade competition on the demand for immigrant labor is most clearly identifiable when it is a primary, sustained shock acting on a pre-existing industrial structure, as was the case from 2003 to 2008. The results for the post-2008 period underscore the contextual nature of our findings and highlight the conditions under which these dynamics are most likely to occur.

Finally, we investigate the sensitivity of our estimates to the level of aggregation, testing for potential bias arising from the loss of micro-level information. To do this, we collapsed our dependent variable and controls to the LMA level (averaging across nationalities) and re-estimated the model with time fixed effects. While these estimates should theoretically coincide with our baseline in a perfectly linear setting, Table A6 reveals modest-to-mild systematic divergences: the aggregated coefficients are consistently lower for Chinese import shocks (-0.8 to -4%) and higher for Eastern European shocks (+2 to +7%). Crucially, since without the inclusion of the nationality-specific controls the estimates coincide, the observed divergence is driven entirely by the aggregation smoothing out the granular variation in lagged settlement patterns ($IMM^{pct}_{c,i,t-1}$ and $IMM^{ratio}_{c,i,t-1}$). These findings support the use of the disaggregated specification as a more robust alternative, capable of mitigating the aggregation bias that arises in the presence of misspecification or unobserved heterogeneity (Blundell and Stoker 2005).

4.3 Indirect evidence of a cost channel

While our main results establish a robust causal link between trade pressure and the local allocation of immigrants, disentangling the specific mechanism requires further investigation. As outlined in the conceptual framework, we discuss two potential channels: a selection channel (firm exit) operating on the extensive margin and a cost channel (labor substitution) operating on the intensive margin.

Ideally, one would disentangle these mechanisms by observing firm-level exit rates and detailed workforce composition changes simultaneously. However, data limitations prevent us from directly testing the selection channel (on this topic, see Pager 2016). Consequently, this section focuses on providing evidence for the second mechanism: the cost channel. We argue that if the trade-induced demand for immigrants

is indeed driven by cost-minimization motives, this effect should be heterogeneous across immigrant groups based on their potential to generate cost savings.

We begin with the premise that in Italy (such as in many other Western European economies), immigrants, particularly those from lower- and middle-income countries, tend to earn significantly lower wages than natives with comparable observables. This is evident from Fig. 3, which illustrates the wage gap between natives and immigrants with similar characteristics across the entire income distribution in Italy in 2008.

This wage gap arises from well-documented labor market frictions. Migrants from low- and middle-income countries often have lower reservation wages and fewer outside options, particularly when their residence status is tied to employment (Salis 2012; Kesici 2022). Furthermore, discrimination can suppress their bargaining power (Busetta et al. 2018; Caselli and Falco 2020). Under the pressure of import competition, these frictions render specific immigrant groups attractive to firms seeking to recover competitiveness through cost compression. In this sense, our argument parallels Venturini and Villosio (2018), who discuss how the availability of immigrant labor supports firm survival during economic downturns.

To indirectly test this hypothesis, we leverage the heterogeneity in the origins of the immigrant population. If the mechanism is purely about cost reduction, the effect of trade shocks should be concentrated among immigrants from low-wage countries

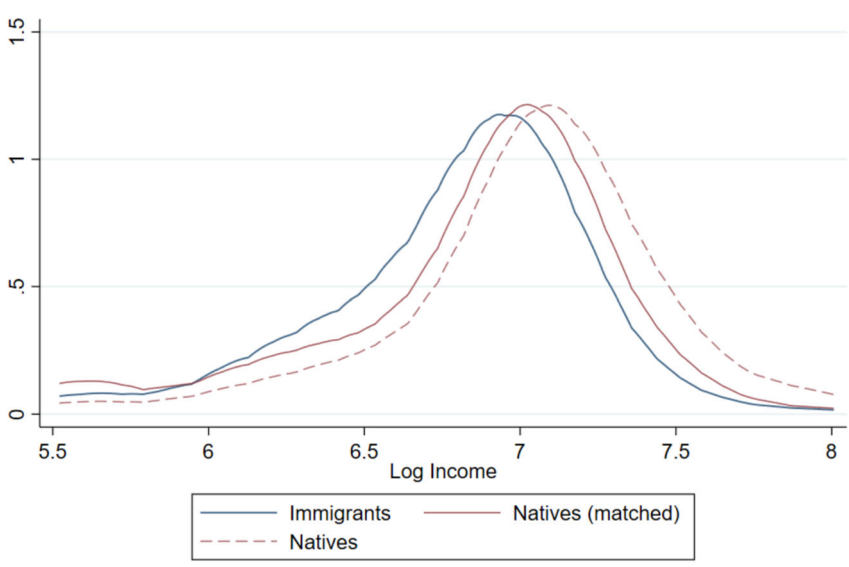

Fig. 3 Income distribution, natives vs. immigrants. *Notes*. This reports the distribution of (log) monthly income for natives, for immigrants, and for natives with characteristics similar to those observed among immigrants. In this case, income is measured in current Euros. Matching has been performed on the basis of the following observables: two-digit profession, broad sector of employment (agriculture/industry/services), job seniority, age group, educational attainment, sex, region of residence (NUTS2 level), full-time/part-time employment, quarter in which the interview took place. Source: Own elaboration based on Istat Labor Force Survey 2008

(who offer the largest cost advantage) and absent for those from advanced economies (who are typically complements to, or substitutes for, high-skilled natives).

We perform separate analyses on two subsamples defined by the GDP per capita of migrants' home countries.[7] The results, presented in Table 6, align with the hypothesized mechanism: trade shocks positively affect the presence of immigrants from low- and middle-income countries (columns 1–2) but do not influence migration dynamics from high-income countries (columns 3–4).

Finally, we model an interaction between the GDP per capita of migrants' countries of origin and local exposure to trade shocks (columns 5–6). This specification allows us to test the gradient of the effect. The interaction term is negative and highly significant, indicating that the positive impact of trade shocks on immigrant demand diminishes as the income level of the sending country rises. This result provides compelling indirect evidence that the observed reallocation of labor is fundamentally driven by the cost-minimization incentives described in our framework.

5 Discussion

In previous sections, we document how, in Italy during the first decade of the 2000s, rising import competition from LWCs significantly shaped local migration patterns. Specifically, our results show that, in a context where the immigrant share of the resident population climbed from under 3 to over 7%, a one-standard-deviation increase in local exposure to either Chinese or Eastern European competition led to an increase in the local prevalence of immigrants by about 0.4 percentage points. As demonstrated in earlier sections, these estimates are robust across a variety of model specifications and robustness checks, strengthening confidence that the observed relationship is not merely coincidental.

An important feature of our identification strategy is that we do not restrict the analysis to aggregate immigrant shares but instead model the phenomenon at the disaggregated nationality level. This distinction allows us to incorporate detailed information about the pre-existing distribution of migrant networks, which operate primarily within specific national groups (Fagiolo and Santoni 2016; Piras 2020). For instance, the local presence of an established Romanian community strongly influences future arrivals from Romania but has little bearing on inflows from Egypt. Coupled with the IV framework, which isolates the supply-side component of trade shocks, this granular specification lends strong credibility to our conclusions about the impact of trade shocks from LWCs on local immigration dynamics.

Shifting from internal to external validity, it is important to clarify the specific conditions under which our findings—and the two underlying mechanisms—are likely to generalize to other advanced economies. First, both mechanisms rely heavily on immigrants originating predominantly from lower-income countries, though for com-

[7] We classify as "high income" those countries with a GDP per capita of at least 25,000 constant 2010 US dollars at the beginning of each period (i.e., 2003 and 2008). Results remain qualitatively similar when the threshold is lowered to 20,000 dollars.

Table 6 A cost channel?

Dep. var.: $\Delta IMM^{pct}_{c,i,t}$	Low and middle income		High income		Interaction	
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta IPW^{China}_{i,t}$	0.0043***		0.0006*		0.0057***	
	(0.0009)		(0.0003)		(0.0009)	
$\Delta IPW^{EECs}_{i,t}$		0.0061***		0.0004		0.0074***
		(0.0011)		(0.0004)		(0.0011)
$\Delta IPW^{China}_{i,t} \times Ln(GDPpc^{orig}_{t-1})$					−0.0015***	
					(0.0002)	
$\Delta IPW^{EEC}_{i,t} \times Ln(GDPpc^{orig}_{t-1})$						−0.0018***
						(0.0003)
$IMM^{pct}_{c,i,t-1}$	0.2494***	0.2494***	0.0243	0.0243	0.2421***	0.2422***
	(0.0097)	(0.0097)	(0.0309)	(0.0309)	(0.0094)	(0.0094)
$IMM^{ratio}_{c,i,t-1}$	−0.0008***	−0.0008***	−0.0000	−0.0000	−0.0007***	−0.0007***
	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0002)	(0.0002)
$Ln(NPOP)_{i,t-1}$	0.0009***	0.0008***	−0.0002***	−0.0002***	0.0007***	0.0007***
	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Cou-origin×Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	236,165	236,165	52,895	52,895	286,825	286,825
Kleibergen-Paap F stat	11.58	42.45	11.55	41.56	5.872	19.09

Notes. Migrants' countries of origin are "high income" if the GDP per capita is above 25,000 constant 2010 USD. LMA-clustered standard errors are reported in parentheses: $*p < 0.1$; $**p < 0.05$; $***p < 0.01$

plementary reasons. Regarding the cost channel, the gap in development levels explains why these immigrants have lower reservation wages and are more willing to accept flexible working conditions than similarly qualified natives (Gautié and Schmitt 2010). Regarding the selection channel, the origin plays a different but equally critical role: migrants would be unlikely to enter a host market characterized by a "taste for discrimination" unless the expected income gains were substantial enough to compensate for the psychological or social costs of such hostility. In short, without significant per capita income gaps between sending and host countries (the classical Harris-Todaro perspective), the supply of immigrant labor required for either channel to operate would likely diminish. Second, pervasive market imperfections are a prerequisite for both channels; neither mechanism can function in a perfectly competitive, frictionless environment. For the cost channel to drive substitution, the labor market must exhibit rigidities—such as strong collective bargaining or employment protection—that prevent native wages from adjusting downward, or that allow gaps in non-wage expenditures to persist (e.g., lower workplace safety investments, as discussed by D'Ambrosio et al. 2022). Simultaneously, for the selection channel to operate, the product market must initially tolerate inefficiencies, specifically allowing discriminatory firms to survive until trade pressure forces a market cleansing. Thus, our results are most applicable to economies where labor markets are dualistic and where market structures allow non-profit-maximizing behaviors to persist until exposed to external shocks.

An important caveat when interpreting the changes in local immigrant shares concerns the nature of the observed "pull" from trade competition. Rather than through a direct effect, we view the shock primarily as a mechanism that reallocates migrants who would have entered the Italian labor market regardless. In this framework, migrants arrive in Italy driven by broader economic opportunities; once within the national market, local trade shocks function as a sorting device, directing this supply of labor toward specific local labor markets where the pressure to cut costs creates the strongest relative demand for their characteristics.

Our empirical analysis establishes that firms facing trade pressure increase their reliance on immigrant labor primarily to compress production costs and survive market competition. While we do not directly test the long-term downstream effects of this specific adjustment mechanism, the finding that trade shocks trigger a "low-cost" survival strategy has implications that extend beyond the immediate scope of our study. Understanding how firms, labor markets, and societies adjust to these specific migration flows is crucial for interpreting the consequences of trade-induced immigration.

From both economic and social perspectives, the literature highlights a mix of potential benefits and challenges associated with this type of cost-driven adjustment. In the short term, the downward adjustment of labor costs can help firms facing intense foreign competition remain operational, thereby preventing economic disruption and further job losses for natives. Moreover, the integration of immigrants into the Italian economy can arguably be seen as a first step toward their broader cultural integration, although it remains unclear how their lower pay relative to natives might affect this process, especially given the viscosity of longitudinal wage assimilation (Strøm et al. 2018; Barbiano di Belgiojoso 2019). Additionally, there is evidence that a mixed immigrants-natives workforce could enhance firm productivity and export compet-

itiveness, particularly in sectors that serve international markets (Mitaritonna et al. 2017; Ottaviano et al. 2018; Hatzigeorgiou and Lodefalk 2019; Sabbadini 2024), though this effect remains contingent on specific contexts. On this point, economic theory and empirical evidence suggest that immigration should, on average, have a positive impact on natives' salaries in the short term. However, this impact is inversely related to the degree of substitutability between immigrants and natives, and while the average effect may be positive, it could be negative for natives at the lower end of the income distribution (Amuedo-Dorantes and de la Rica 2013; Dustmann et al. 2013).

Short-term benefits, however, may be counterbalanced by longer-term risks. First, the choice of firms to compress labor costs by relying on the availability of an immigrant workforce willing to accept lower wages represents, in the words of Venturini and Villosio (2018), a "status-quo oriented strategy" that may disincentivize shock-coping responses based on technological upgrading and innovation. Consequently, the very mechanism identified in our results—the substitution of natives with cheaper immigrant labor—risks creating a lock-in effect, where firms remain entrenched in low-value-added production strategies, making it difficult to transition toward higher-productivity, innovation-driven growth. Such dynamics foster further labor market segmentation and wage stagnation. Although these dynamics are not predetermined and depend significantly on the role of labor market institutions (Andersson et al. 2019), a similar pattern seems to have characterized the Italian context. Indeed, the simultaneous rise in low-wage occupations and stagnation in high-skilled, high-wage positions has been a defining feature of the Italian labor market throughout the 2010s. While this trend likely stems from multiple, overlapping factors, it is difficult to rule out trade-induced low-skilled migration as a potential contributing cause (Basso 2020; Cuccu and Pontarollo 2024).

Beyond these strictly economic reasons, a vast empirical literature shows that migration shocks can exacerbate social tensions, trigger political backlashes, and increase support for anti-immigration and identitarian parties (for Italy, see Barone et al. 2016; Caselli et al. 2020; Russo 2021). Interestingly, as discussed by Caselli et al. (2020), labor market competition may not be the primary driver of this phenomenon. While they point to competition for welfare services and benefits—where the presence of immigrants might lead to perceived or actual rationing for natives—Russo (2021) highlights the role of cultural distance, implicitly suggesting the influence of homophilic preferences.

6 Conclusions

In this paper, we explore the nexus between import competition from low-wage countries (LWCs) and immigration. Specifically, focusing on Italian local labor markets during the first decade of the 2000s, we investigate whether increases in import competition from China and Eastern Europe led to a rise in the local presence of immigrants. To the best of our knowledge, this is the first study to establish a causal relationship between trade competition and immigration, contributing to the literature on both the determinants of migration and the effects of trade shocks.

A key feature of our approach is the disaggregation of immigrant shares by nationality, which allows us to account for the impact of pre-existing migrant networks that primarily operate within national communities and to control for time-varying push and pull factors that influence bilateral migration flows between Italy and other countries. Combining this with an IV strategy that addresses the endogeneity of trade flows, we find robust evidence that exposure to trade shocks from LWCs has acted as a pull factor for migration. We hypothesize that this effect stems from local firms' responses to shock-induced downturns, particularly their efforts to reduce labor costs. Indeed, in the presence of frictional labor markets, firms can rely on a pool of immigrant workers who, compared to natives with similar qualifications, are, on average, willing to accept lower wages and greater job flexibility.

Although we cannot directly test this mechanism, we provide indirect supporting evidence. Specifically, we find that the pull effect diminishes (and, in some cases, vanishes) as the income level of migrants' country of origin increases. This observation aligns with the notion that migrants from higher-income countries possess stronger "outside" and "voice" options, making them less likely to accept lower wages and precarious working conditions.

The results highlight a seemingly overlooked link between trade globalization and the spatial distribution of immigrants, underscoring how trade competition can reshape local labor demand in ways that disproportionately attract migrant workers, especially in the context of frictional labor markets. Future research could examine how these dynamics vary across different labor market institutional settings, levels of technological adoption, and firm strategies. Investigating whether cost-oriented hiring practices inhibit productivity-enhancing upgrades also represents a critical avenue for further research.

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Declarations

Conflict of interest The authors declare no competing interests.

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