

Does historic diaspora contribute to FDI? Evidence from Italian regions

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Abstract

This paper investigates the link between historical emigration (between the end of the 19th and the beginning of the 20th century) and inward and outward FDI of Italian regions. We study whether the findings of a sizeable literature on contemporary migration-trade link can be extended to a longer-run perspective. We employ a set of hybrid panel models, that allow us to study the effects of past migration while controlling for dyadic heterogeneity. Preliminary results indicate that, at an aggregate level, the effects of historical migration do not seem to affect FDI. However, behind this result lies significant heterogeneity. Indeed, historical migration pre-dating world war I appears to positively and significantly affect FDI, especially outward FDI. Instead, migration in later, post-war years negatively and significantly correlates with FDI, suggesting that brain drain effects are at play.

Keywords: Foreign Direct Investment; Diaspora; Age of mass migration; Migration

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Extended Abstract

Introduction and Motivation

In this paper, we study whether mass emigration from Italy bears lasting effects on the realization of FDI flows between Italian regions and countries worldwide.

A sizeable international economics literature pioneered by Gould (1994), Head and Ries (1998) and Rauch and Trinidad (2002) has highlighted the complementarity between trade and migration. Thanks to their knowledge of the home country institutions and language, migrants effectively decrease bilateral trade barriers and facilitating the flow of information between the origin and the destination country regarding procedures and business opportunities—the “information effect”. Furthermore, migrants’ embeddedness within co-ethnic networks generates reputational bounds that ensure the enforcement of transnational contracts and can be especially valuable in countries where the rule of law is weakly enforced—the “enforcement effect” (Rauch and Trinidad, 2002; Dunlevy, 2006).

A third channel through which migrants may play a role for trade is the similarity in preferences. Indeed, firms and consumers may have a consumption bias in favour of goods and services offered by firms from their countries of origin, a mechanism that the trade literature has labelled the “preference effect” or the “transplanted-home bias effect” (Gould, 1994; White, 2007).

Similar mechanisms can explain the increasingly compelling evidence about the positive effects of migration identified beyond trade, i.e., on FDI (e.g. Burchardi et al., 2018; Javorcik et al., 2011; Jayet and Marchal, 2016; Buch et al., 2006; De Simone and Manchin, 2012; Kugler and Rapoport, 2007; Docquier and Lodigiani, 2010; Gao, 2003; Etzo and Takaoka, 2018). For what concerns FDI, migrants’ brokering role is potentially even more salient, as FDI are subject to substantially higher capital investment, information asymmetries and cognitive barriers than foreign sales, and depend critically on the knowledge of foreign institutions, business opportunities and labour market pools of specific skills (Head et al., 1995; Jayet and Marchal, 2016; Javorcik et al., 2011; Daude and Fratzscher, 2008). FDI require comparatively greater fixed costs and lower variable costs than trade (Buckley and Casson, 1981; Helpman et al., 2004), and migrants’ effect has been found to operate precisely at the level of fixed, rather than variable costs (Peri and Requena-Silvente, 2010).

Furthermore, an additional channel, i.e. the labour cost channel, may be at place as a driver of FDI that is potentially less relevant for trade. Indeed, migrants could affect the

location choice of FDI as providers of labour for the new establishments. This link has been proposed by a branch of the literature attempting to accommodate the observed complementarity between migration and FDI through extensions of the Heckscher-Ohlin model, often distinguishing between skilled and unskilled migrants (Jayet and Marchal, 2016; Markusen, 2006). This literature has mainly shown that the complementarity operates between FDI and skilled migration: FDI respond to the availability of (foreign) skilled labour and, in turn, attract skilled labour from the source country of FDI. Instead, there is evidence of substitution between unskilled migration and (outward) FDI. Most studies highlight different effects according to the direction of FDI that is considered (outward vs. inward) which ultimately implies recognizing heterogeneity in the kind of investment, in their motives and in the determinants of their location choice.

The literature on the effects of migration on trade and FDI (Rapoport, 2018) has so far maintained a remarkable short-run focus. Indeed, most studies employed contemporaneous (either recent or historical) time series of both migration and trade flows. While this focus can be explained by the policy relevance of contemporaneous migration, Burchardi et al. (2018) have shown that historical migration is an excellent predictor of current migration, and Petraglia and Vecchione (2021) demonstrated lasting pro-trade effects of historical emigration.

In the present study, we draw on these contributions and set to investigate possible long-run effects of historical mass migration on current flows of inward and outward FDI between the origin and destination communities of migrants. Petraglia and Vecchione (2021) showed that mass migration outflows experienced by Italian regions around the turn of the 20th century led to the formation of persistent migrants' networks abroad that are still relevant for nowadays trade flows. Drawing on their findings, we investigate whether such ties are also relevant for the establishment of more complex, capital-intensive and information-sensitive ventures like FDI.

The 19th- and early 20th-century Italian case represents a textbook example of mass emigration (Gould, 1980), with about 17 million people having left Italy between 1875 and 1928, almost twice the number of emigrants having left the country in the subsequent six decades (Del Boca and Venturini, 2003). Despite the empirical relevance of the phenomenon, data availability issues have long prevented the use of historical emigration data to test the effects of this massive movement of people on economic outcomes.

The regional dimension is a relevant advantage in the operationalization of this research question. First, in the age of mass migration, the intensity of emigration

varied greatly between Italian regions, and regional variance was also significant in emigrants’ destinations. Second, Italy is now the national economy with the deepest and most persistent regional disparities among advanced European countries, heterogeneous export and investment capacity at the regional level being one of the main indicators of the Italian regional divide. Third, D’Ambrosio and Montresor (2021) have shown the substantial implications of accounting for heterogeneous exporting capacities of sub-national units when analyzing the pro-trade effects of migration.

Previous studies have adopted a similar regional perspective in the analysis of the effects of migration on FDI (Benfratello et al., 2019). Their results indicate that, for what concerns contemporaneous migration, the effects of immigration prevail over those of emigration in attracting FDI inflows to Italian regions. However, it is unclear whether these effects may be confounded by longer-term dynamics, and whether there is a directionality in the effects of migration that would lead us to expect an effect of emigration on outward, rather than on inward, FDI.

To address this issue, we build a unique dataset that combines detailed inward and outward investment-level data —from the *fDi markets* database— with information on historical immigration at the level of Italian NUTS2 regions, besides standard gravity variables employed in the literature (e.g. De Simone and Manchin, 2012). Investment-level data allow us to distinguish the function/activity in which the investment is taking place (Defever, 2006). We focus in particular on manufacturing, R&D, market-access and business services FDI ¹.

The remarkable level of detail on the direction of investment flows — i.e., whether the investment is outgoing or incoming — and on the activity of the subsidiary is expected to provide some insights on the underlying mechanism. Indeed, as argued by Petraglia and Vecchione (2021), it is hard to formulate expectations on the sign of diaspora externalities, but some hints about the underlying mechanisms can be obtained from either function-specific information about the investments and from country-specific estimates.

Empirical Approach

Migration statistics come from the *Annuario Statistico della Emigrazione Italiana dal 1876 al 1925* published by the Italian Migration Department in 1926 (Commissariato Generale dell’Emigrazione, 1926). Gross migration outflows are based on the authoriza-

¹We use the terms “function” or “activity” interchangeably to “refer to a stage or an activity which is part of the firm’s value chain, and where the production stage itself only accounts for one stage” (Defever, 2006, p. 658–659)

tion or issue of passports collected from 1876 to 1925, widely accepted in the literature as the best available estimates of gross emigration (Hatton and Williamson, 1998). As anticipated, statistics are broken down by region of origin and country of destination. Such a territorial disaggregation accounts for two relevant peculiarities of the Italian mass emigration: the variation in emigration rates across Italian regions and the regional variance in emigrant destinations (Hatton and Williamson, 1998).

FDI flows data are drawn from the *fDI markets* database, a comprehensive and regularly updated online database of crossborder greenfield investments constructed by the Financial Times Intelligence Unit. It covers all countries and sectors worldwide. We extracted from this repository the data relating to inward and outward FDI from/into Italian regions for which the origin/destination region was available, over the 2003-2019 period, and which referred to countries with which Italy had relevant migration ties at the turn of the 20th century.

We employ these data, along with standard determinants of FDI flows employed in gravity models of international trade and FDI, in a set of gravity equations of FDI flows that we augment with migration variables.

The time heterogeneity of mass migration flows before World War I, during war times, and between WWI and WWII, suggests running separate regressions for three sub-periods. Furthermore, we find it convenient, in line with previous studies, to use a time-invariant regressor to proxy the volume of migration in order to reduce the volatility of time series characterized by ups and downs within sub-periods. In particular, we use the arithmetic average of migration outflows observed in each sub-period.

The natural candidate for the assessment of the link between migration and trade would be a panel gravity model with fixed effects (FE) (Wagner et al., 2002; Bratti et al., 2014). However, the non-contemporaneous nature of the relationship under investigation makes it technically impracticable to estimate a panel model with adequate time lags. Furthermore, the use of FE is prevented by the inclusion in the estimated model of our time-invariant proxy of migration outflows. Thus, we estimate a panel hybrid model (HM), that is, a random-effects (RE) model allowing for time-invariant variables (Allison and Liao, 2009; Schunck, 2013). The estimated HM takes a panel RE model form, separately modelling the time-varying and the time-constant parts of each covariate. This produces the same coefficients as FE models with the inclusion of time-constant variables (Vaisey and Miles, 2017). The estimated HM is derived from the following

panel RE model applied to a given dyad of region i and country c :

$$y_{ict} = \alpha + \beta_1 m_{ic} + \beta_2 dist_{ic} + x_{it}\gamma + w_{ct}\delta + z_{ict}\theta + \mu_{ic} + \tau_t + \varepsilon_{ict}$$

where i is the subscript for Italian regions ($i = 1, 2, \dots, 20$); t is for time ($t = 2003, 2001, \dots, 2019$); y_{ict} is the measure of FDI flows. Depending on the specification, this is estimated as the log of the number of outward FDI, of inward FDI, of the amount invested in inward/outward FDI, or of the probability that at least an inward (outward) investment is observed between region i and country c at time t). m_{ic} is the time-invariant variable of interest measuring historical migration outflows from region i to destination country c ; $dist_{ic}$ is the distance between region i to destination country c , measured as the distance (km) between the capital cities of the region and the foreign country; x_{it} is a vector of control variables at the regional level: per-capita gross domestic product (GDP) and population; w_{ct} denotes two control variables at the level of the partner country: GDP per capita and population in destination country c ; z_{ict} represents a vector of bilateral contemporaneous control variables, i.e., migration flows from region i to the country c at time t , and exports from region i to country c ; μ_{ic} is the random intercept at the dyadic level, τ_t the time-specific effect, and ε_{ict} is the error term. All variables are expressed in logarithms so that the estimated coefficients for all covariates can be interpreted as elasticities.

Following Schunck (2013), we decompose each x_{it} , w_{ct} and z_{ict} control variable into a between and a within component, thus obtaining the following hybrid model:

$$y_{ict} = \alpha + \beta_1 m_{ic} + \beta_2 dist_{ic} + (x_{it} - \bar{x}_{it})\gamma_1 + \bar{x}_{it}\gamma_2 + (w_{ct} - \bar{w}_{ct})\delta_1 + \bar{w}_{ct}\delta_2 + (z_{ict} - \bar{z}_{ic})\theta_1 + \bar{z}_{ic}\theta_2 + \mu_{ic} + \tau_t + \varepsilon_{ict}$$

where γ_1 , δ_1 , and θ_1 are within-effect estimators; and γ_2 , δ_2 , and θ_2 are between estimators. Our measure of the long-run impact of historical migration on nowadays trade is provided by the estimate of β_1 , that is, the impact on y_{ict} of a 1% change in m_{ic} . Such model turns out to be very useful to our purposes allowing for the presence of the time-invariant historical migration variable in a panel model with FE. Furthermore, HM provides unbiased estimates even when $E(m_{ic}|x_{ict}) \neq 0$, which is very consistent with the nature of our data (Italian regions).

Estimating equation (2), we explore the elasticity of y_{ict} to m_{ic} controlling for factors that the literature commonly uses to explain trade flows in gravity models (e.g. Wagner et al., 2002; Bratti et al., 2014). In order to be consistent with previous work, we main-

tain that trade flows between Italian regions i and countries c are positively correlated to economic attractors, such as GDP per capita and population of both, and negatively associated with geographical distance.

Further empirical issues in panel analysis arise with potential implications for estimation and inference when the territorial units are spatially interdependent. These problems are particularly serious in regional and spatial studies where potential spatial correlation in the error term may lead to biased estimation. Thus, in line with Bratti et al. (2014), we use standard errors robust to spatial dependence in the data (Driscoll and Kraay, 1998).

Preliminary results

Preliminary results indicate that, on aggregate, the effects of emigration on FDI inflows and outflows are insignificant. However, behind this result appears to lie significant heterogeneity.

Indeed, when looking more specifically on FDI in manufacturing activities, a significant pro-trade effect of historical migration emerges for both inward and outward FDI.

Specifically, precise estimates emerge for mass emigration over the 1876-1899 period on outward FDI, irrespective of whether FDI flows are measured as the probability that at least one FDI is observed, as the log of the number of FDI, or as the amount invested.

A less precise effect is also measured over the 1901-1913 emigration period on inward FDI in manufacturing, again irrespective of the measurement used.

These preliminary findings are suggestive of the establishment of long-run ties that persist and that facilitate the creation of manufacturing ventures both abroad and at home, somewhat in line with the findings by Burchardi et al. (2018).

A less obvious result is instead observed for the 1900-1925 and 1919-1925 periods on FDI in downstream activities. For FDI in Marketing, Sales, and Support and Business Services, the effect of emigration in these periods appears negative and significant. This suggests that the mass emigration caused by World War I has led to a significant “brain drain” that persisted until today.

We plan to further explore and consolidate these preliminary results with further country-analyses, checks based on the heterogeneity of emigrants’ skills and to explore an instrumental variables approach along the lines of (Burchardi et al., 2018).

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