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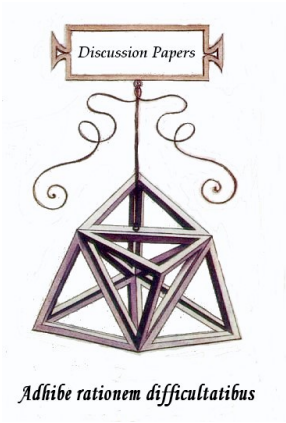

Davide Fiaschi and Cristina Tealdi

Some Stylized Facts on Italian Inter-regional Migration

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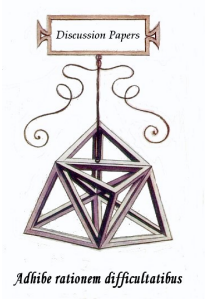

Davide Fiaschi and Cristina Tealdi

Some Stylized Facts on Italian Inter-regional Migration

Abstract

In this chapter we provide a descriptive analysis of inter-regional mobility in Italy for the period between 1992 and 2005. We use ISTAT data on the change of residence for groups of individuals according to age and education. We find evidence of two different types of migration. The first is the migration of working age individuals who respond to changes in economic conditions. The second is the return migration, which involves older cohorts of individuals, it is mainly driven by factors non-economic in nature and it is roughly constant over time. We also find that migration intensity generally increases over the period, but only for the first type of migration, while return migration, after a phase of stability, decreases in 2004 and 2005. Overall, the use of disaggregated data by age and education appears crucial for the correct identification of the determinants of migration.

Keywords: migration types, change of residence, age and education groups.

JEL:

1. Introduction[1]

For quite some time, researchers have focused mostly on international migration, while having dedicated relatively little attention to internal migration (Gallo, 2012). This is because internal migration has a much lower impact and visibility in national societies and is considered much easier to manage compared to international migration (Bonifazi and Heins, 2000). However, in Italy internal migration is a rather important phenomenon, given the presence of important and persistent regional disparities (Zamagni, 2008; Bank of Italy, 2010). In particular, the existence of a large and persistent regional economic divide in Italy, with the poor South legging behind the wealthy North is a well-known and extensively studied phenomenon (Checchi and Peragine, 2010; Gagliardi and Percoco, 2011; Larcinese, 2008, Faini, *et al*. 1997).

In the period between the end of the 19th century and the beginning of the 20th century the migration intensity from Italy towards other countries, particularly towards America, reached extraordinary levels. Between 1876-1880 approximately 544,000 left the Italian peninsula, while in the years 1896-1900 this number was up to 1.5 million. Remarkably, in 1913 more than 800,000 people left Italy, which is more than the number of inhabitants in the city of Milan in the same year (Bonifazi and Heins, 2000). However, parallel to what was defined as 'The Great Exodus', the internal migration rate was also significantly high (Figure 1). Data from the 1861 Italian census show that three forth of the migration flows remained within the national borders, while only one fourth was towards a foreign country. In the period between the two wars, while internal mobility remained rather high, the flows of migrants towards foreign countries declined significantly.

INSERT FIGURE 1 ABOUT HERE

It was after the WWII that both internal and international mobility picked up again, with internal migration growing faster than international migration. Italy considerably suffered from severe damage to its industry and infrastructure and was dealing with the heavy inheritance of 20 years of dictatorship largely based on isolation and autarchy. Since 1945 Italy went through the most in-depth social transformation in its history: from an agricultural and rural country to a modern industrial economy. Between 1948 and 1963, the GDP at constant prices grew at a rate of 6% per year, with huge effects on population flows. The migration flows peaked in 1961-63, reaching 4.3% per thousand in 1962, equivalent to 2.2 million reallocations (Figure 1). Even though the 1961-63 peak was somehow inflated, as it reflected the effects of post-census adjustments and the retraction

[1] We acknowledge funding from the European Commission [Marie Curie] and Jean Monnet Action.
[2] These data are available on Sauro Mocetti's website (https://sites.google.com/site/sauromocetti/open-data).

of the fascist law, which had placed severe limitations on changes of residence, the numbers were impressive (Bonifazi and Heins, 2000; Gallo, 2012). The major industrial cities in North-West of Italy (Milan, Turin and Genoa) absorbed immigrants from neighbouring provinces and regions, as well as from other Italian regions. "Italy was [..] crossed [..] by a variety of short-, medium- and long-distance transfer flows with different main directions: from the South to the central and north-western areas; from East to West; from small- and medium-sized towns to medium-, large- and very large-sized cities; from the mountains to the hills and the plain, from agriculture to industry, crafts and services" (Sonnino, 1995).

This intense phase ended in the early 1970s; after the migration flows changed and lost their link to the economic disparities (Bonifazi and Heins, 2000). The migration rate decreased in the 1970s, although there was a slight revival between 1979 and 1982. Subsequently, the rate continued to fall until 1995. Specifically, in 1970 the internal rate was approximately 2.6%, which corresponded to 1.4 million individuals changing residency, while in 1991 the migration rate was down to 1.8% corresponding to 1 million individuals moving within the country. After 1995, internal migration increased again reaching in 2008 a rate of approximately 2.4%, which corresponds to 1.4 million individuals relocating internally (Gallo, 2012).

Italy in the last thirty years, relates to the model stages of a Late Transitional Society and an Advanced Society, as defined by Zelinsky (1971), which conforms to a decline in movements from countryside to city, a decline in emigration, and the increasing importance of residential mobility. Over the past 20 years, however, the character of migration has changed. The function of internal migration in regional labour market readjustment has declined, there have been more moves to suburban areas, and consumption-oriented (family and amenity-related) flows have increased with respect to production-oriented (job and employment-related) ones (Terra *et al*., 1993 and 1996). In addition, an increase in low-skilled and medium-skilled immigration can be observed. In particular, statistics about the migration flows in the period 1992-2005 show that approximately 2% of the Italian population each year changes residency. Inter-regional migration accounts for 24% of total migration, which corresponds to approximately 320.000 people moving from one region to another. Northern regions, such as Lombardy, Piedmont and Veneto, are still the most chosen destination regions, while Southern regions such as Campania, Puglia, Basilicata, Calabria e Sicilia have more outflows than inflows (Figures 2 and 3).

INSERT FIGURES 2 AND 3 ABOUT HERE

Large disparities among regions are persistent, particularly between the North and the South of the country, and they contribute to explain part of the long-distance migration flows. However, the heterogeneity in the migration flows and the new patterns of migration lead to think that new approaches are needed to analyse in depth the phenomenon. Hence, in this chapter we use a new methodology, which takes into account bi-directional migration flows: the Markov matrix.
The objective of this chapter is therefore to provide new evidence over the period 1991-2005 of the way labour mobility, specifically in terms of inter-regional migration, has changed over time, taking into account different types of migration and distinctive categories of migrants, classified according to age and education.

2. Literature

The literature on Italian internal migration is not very large and it mainly addresses the issue of South-North migration, disregarding the multiple and heterogeneous regional migration routes. The paper by Faini *et al*. (1997) indicates the presence of an empirical puzzle related to the coexistence of increasing employment differentials between the North and the South of Italy and lower migration rates in the period 1970-1990. This evidence seems to contradict the standard economic theory, according to which the larger the economic disparities between regions, the higher the migration rate (Hicks, 1932; Greenwood and Hunt, 1984; Greenwood, 1975). The authors argue that high mobility costs and inefficiencies in the job-matching process might rationalise the puzzle of falling migration and growing unemployment differentials in Italy. Attanasio and Padoa-Schioppa (1991) explain the decline in the propensity to migrate using as an argument the role of family and government support. Cannari *et al*. (2000) emphasize how the housing price differentials between the North and the South of Italy could have played a big role in explaining interregional migration flows until the mid-1990s. Fachin (2007) finds that the most important factor behind the fall in migrations is the income in the region of origin.

The new wave of internal migration which began after 1995 was characterized by a higher probability to migrate for high-skilled workers compared to low-skilled and medium-skilled workers. As pointed out in a report from Bank of Italy (2005), “while only 7% of the total working-age population in the South has a degree, 25% of migrants from the South to the Centre–North have one”. Basile and Causi (2007) and Etzo (2008, 2011) claim that the increased migration rates since the mid 90s go in parallel with the increased unemployment differentials between North and South and identify per capita GDP as the main pull factor. Daveri and Faini (1999) pinpoint income risk as a significant determinant of the decision to migrate either abroad or inside the country as it

represents a way of escaping uncertain income prospects. Cannari *et al*. (2010) and Mocetti e Porello (2010) find that other variables such as house prices, but also employment rate, temporary contracts, employment in public administration and immigration rate are important determinants of migration. Biagi *et al*. (2011) find that the determinants of long-distance migration are mostly economic, while the determinants of short-distance migration mainly include variables related to the quality of life and amenities. Fratesi and Percoco (2014) focus on the impact of internal migration and show that selective migration from the South to the North increased the disparities between regions. On the contrary, Bartolucci *et al*. (2017) find that returns to ability are lower in the North than in the South and therefore those who decided to migrate to the North are mainly lower ability workers.

3. Migration Indexes based on Markov Matrices

In this section we develop a new index to measure the migration intensity inspired by the Shorrocks' index of mobility (Shorrocks, 1978) as well as a new long-distance migration index inspired by the Bartolomew's index (Bartolomew, 1973).

In the literature the two most common migration indexes are the migration rate and the net migration rate. We instead propose to analyse the Italian interregional migration phenomenon using Markov matrices. In a *Markov matrix* each element (*i,j*) reports how many individuals have migrated from region *i* to region *j* in a specific year. Each element of the *Markov transition matrix* instead provides information on the *probability* that an individual migrates from region *i* to region *j* in a specific period. This is estimated by the ratio of the individuals who moved from region *i* to region *j* and the population of region *i* in a specific period. We argue that our approach has two main advantages with respect to the use of (net) migration rates. First, using the Markov transition matrices we are able to measure both the migration *intensity* and the migration *distance*. Second, we are able to identify different migration patterns, for instance capturing return migration from the North to the South of the country. In particular, building on a well-established methodology developed in the literature on mobility by Shorrocks (1978), we propose as index to measure the inter-regional migration intensity:

$$I_{MI} = \frac{n}{n-1}(1 - \sum_{i=1}^{n} f_i p_{ii}),$$

where n is the number of regions, and p_{ii} is the element (i,i) of the inter-regional transition matrix, f_i is the weight of region i (the observed frequency of observations or the ergodic mass of region i), with $\sum_{i=1}^{n} f_i = 1$. This index assigns higher weight to more populated regions, and varies in the range [0, 1], with $I_{MI} = 1$ measuring the maximum migration intensity.

In addition, inspired by Bartholomew (1967), we propose an index to measure the long-distance migration between regions as:

$$I_{LDM} = \sum_{i=1}^{n} \frac{f_i}{1-p_{ii}} \sum_{j=1}^{n} d_{ij} p_{ij},$$

where p_{ij} the element (i,j) of transition matrix P, and d_{ij} is an index of the (normalized) distance between region i and region j, i.e. $\sum_{i=1}^{n} d_{ii} = 1$. The latter index is increasing with a higher prevalence of long-distance migration and lays in the range [0, 1], with $I_{LDM} = 1$ measuring the maximum long-distance migration. The main difference with respect to the index proposed by Bartolomew is the normalization of the out-of-diagonal element p_{ij} with the mass $(1 - p_{ii})$ to insulate the index from the change in the migration intensity. To understand the reason why this latter index is substantially different from the migration intensity index I_{MI}, express $a_{ii} = p_{ii}/(1 - p_{ii})$ with $\sum_{i=1\ i\neq i}^{n} a_{ii} = 1$, with a_{ii} being the transition probabilities normalized with respect to the mass of migrants. Then:

$$I_{LDM} = \sum_{i=1}^{n} f_i \sum_{j=1}^{n} d_{ij} a_{ij},$$

while

$$I_{MI} = n/(n-1)(1 - \sum_{i=1}^{n} f_i p_{ii}).$$

We observe that the migration intensity index I_{MI} is increasing in p_{ii}, while the long-distance migration index I_{LDM} is independent of p_{ii}.

4. Stylized Facts on Italian Interregional Migration

We use Italian National Institute of Statistics (*ISTAT*) data[2] on the change of residence at regional level for the period 1992-2005 to study the evolution of migration in Italy. Specifically, we observe migration flows from the region of origin to the region of destination for different categories of individuals, aggregated by age and education level.[3]

Migration is a complex phenomenon. People may decide to migrate for different reasons, which not always are economic in nature. Individuals may choose to go back home after many years they have been living abroad (return migration), or because they appreciate the amenities and the better quality of life that another place can offer, or for family reasons, e.g., to follow the spouse (Biagi et al. 2010). If we look at migration only at aggregate level, we run the risk of losing all this complexity and miss out in understanding the real nature of the phenomenon. Below, we carry out our analysis using disaggregated data by age and education, as those are the two main

[2] These data are available on Sauro Mocetti's website (https://sites.google.com/site/sauromocetti/open-data).
[3] The education level is divided in 3 categories: high (tertiary level of education), medium (secondary level of education) and low (primary level of education). In this chapter we refer to individuals with high education levels and high-skilled individuals interchangeably (ILO, 2012).

characteristics that help classify categories of individuals who respond to well-defined pull factors (Borjas, 2014; Borjas *et al*., 2017).

Looking at the migration intensity index (Figure 4) we find that the average value of the migration intensity index for people between the age of 15 and 64 in the period 1992-2005 is approximately 0.009.[4] In line with the literature on migration, we find that individuals with a high level of education migrate the most, followed by individuals with low and medium levels of education. Specifically, for high skilled workers the migration intensity index is approximately 0.01, while for medium skilled workers is approximately 0.006. One possible explanation is that high-skill migration increases as a reaction to immigration (Mocetti and Porrello, 2010): for the case of Italy, this hypothesis may be plausible as data show that since the end of the 90s immigration picked up. An alternative explanation is that labour market opportunities for high skill individuals are more spatially dispersed (Romani *et al*., 2003), and highly educated individuals are more efficient at gathering information and have greater knowledge of alternative opportunities (van Ham *et al*., 2001).

Second, in line with the literature (Romani et al., 2003), we find that younger individuals in the age cohorts 15-24, 25-34 and 35-44 are more likely to migrate than older individuals. Possible explanations refer to the fact that older workers are less likely to change jobs as they have accumulated firm-specific or sector-specific human capital which is not transferable across employers. Moreover, older workers are more likely to be home-owners and have family obligations, which are factors that increase significantly the cost of migration (Van Ommeren et al., 1997, van Ham *et al*., 2001).

INSERT FIGURE 4 ABOUT HERE

Looking at trends over time, we observe that starting from the end of the 90s younger people in the 25-34 and 35-44 years old age cohorts migrate more (Figure 4). The increasing trend is common across all levels of education, but particularly strong among individuals who hold a tertiary education level. We argue that these individuals are active on the labour market and hence their migration decision is mainly motivated by economic factors. In addition to having lower migration intensity, individuals in the 45-54 and 55-64 age cohorts also show flat trends, no matter what the level of education. The absence of fluctuations suggests that this type of migration is mainly driven by time-invariant pull factors, such as local amenities. The migrants' age and the flat trends lead to

[4] Figure 6 in the Appendix shows that the migration index and the crude migration rate are highly correlated.

believe that these movements are ascribable to return migration. However, even for these two age groups, the level of education matters as highly educated individuals migrate more.

INSERT FIGURE 5 ABOUT HERE

When we looked instead at the long-distance migration index (Figure 5), the picture that we get is rather different. When we think about long-distance migration in Italy, we often refer to the North-South migration, even though there are several other long-distance routes that individuals may follow. Individuals with a low level of education are the ones who migrate the most long-distance across all age groups, compared to individuals with a higher level of education. This might be due to the fact that moving costs are rather high and independent of distance and low-skill workers need to experience a high increase in wage in order for the benefits of moving to be higher than the costs. In a country like Italy which is characterized by a strong segmentation between the North and the South, this is only achievable with long-distance migration. Over time, starting from the early 90s less educated individuals (with either a low or medium level of education) across all age cohorts migrate more long-distance. We also observe an increasing long-distance migration rate among low educated people in the 55-64 age cohort starting from the early 00s. We argue that these individuals may be identified as those workers who migrated from the South to the North for work in the 60s and having reached the retirement age in the 00s, decide to go back to their birthplace (return migration), pulled by non-economic incentives, such as local and social amenities. Finally, we observe a declining trend across all age groups and education levels in the years 2004 and 2005, which is likely to be ascribable to the geographical asymmetries of the business cycle.

5. Summary and Future Research

In this chapter we have analysed inter-regional migration in Italy in the period between 1992 and 2005. We have shown that when data are aggregated, many important features of migration disappear, as different migration movements may respond to different types of incentives. Particularly two important and different types of migration might be cluttered: migration driven by economic factors, such as differences in wages and unemployment (Greenwood, 1975; Greenwood and Hunt, 1984) and return migration driven by non-economic factors, such as location-specific natural, social, cultural and skill-dependent amenities (Graves, 1980, Glaeser *et al*., 2001; Florida, 2002). Hence, we emphasize the importance of analyzing migration flows at regional level by disaggregating the data by age and education. This distinction between two migration types has been already assessed for the USA by Faggian and Royuela (2010) and Shapiro (2006). However, it

seems the case that in the USA, people decide whether and where to migrate by comparing utility differentials across different alternative locations, which depend on the combination of both economic and non-economic factors. For the case of Italy, our stylized facts seem to suggest that there is a clear split between two types of migration (working-age versus return migration), which respond to different pull factors (economic versus non-economic).

The evidence just described delineates a possible research agenda for Italian inter-regional migration. First, we wonder if the evolution of institutional settings during the observed period affected migration flows. For instance, several labour market reforms were approved in the late 90s-early 00s to increase the flexibility of the labour market. Even though the reforms were effective at national level, the implementation differed across regions, and this might have triggered internal migration flows. Second, as suggested by the work of Mocetti and Porrello (2010), it should be investigated if (foreign) immigration has significantly affected internal migration. Specifically, if immigration is mostly high-skilled, this may lead to increased internal mobility due to agglomeration effects. On the other hand, if immigration is mostly low-skilled, this may result in a decline of internal migration, the latter being crowded out by foreign migrants. Third, it deserves an analysis if the 1992 crisis together with its regional asymmetric effects may have had a role in explaining the increasing trend of migration in the following years (Di Caro, 2015). Fourth, the difference in migration rates by education level supports the idea that returns to education vary significantly across Italian regions, making migrants' self-selection in inter-regional migration a key issue, which deserves further investigation (Fiaschi *et al*., 2018). Finally, the interpretation of the stylized facts discussed so far requires the development of a novel theoretical model of migration and this is definitely the priority in our agenda (Fiaschi *et al*., 2018).

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Figure 1 - Flows of emigrates, immigrates, and changes of residence (1902-1970). Source: Gallo (2012).

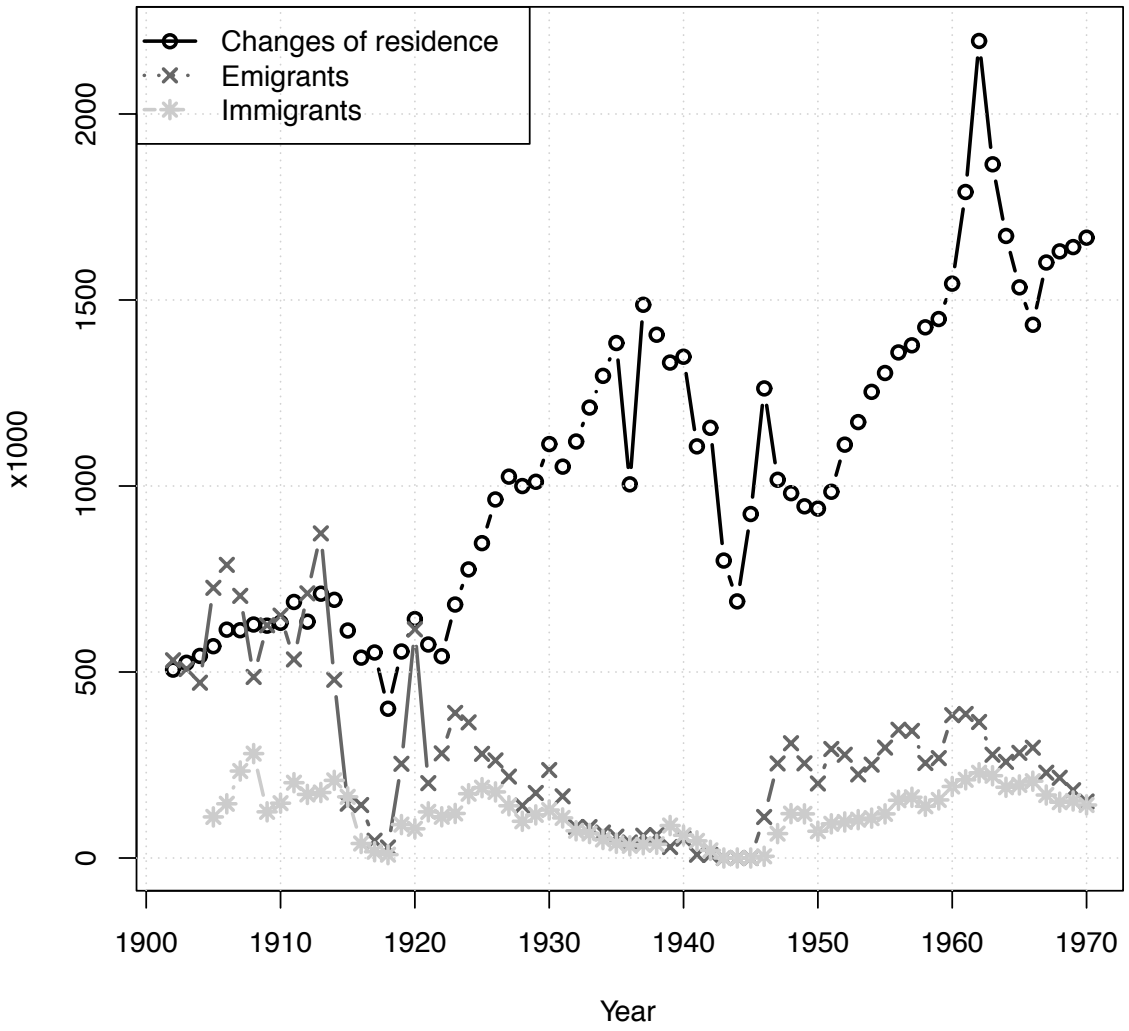


Figure 2 – Regional immigration rate for individuals coming from other Italian regions in 2005. Sources: our calculations based on Mocetti and Porello (2010) and European Labour Survey.

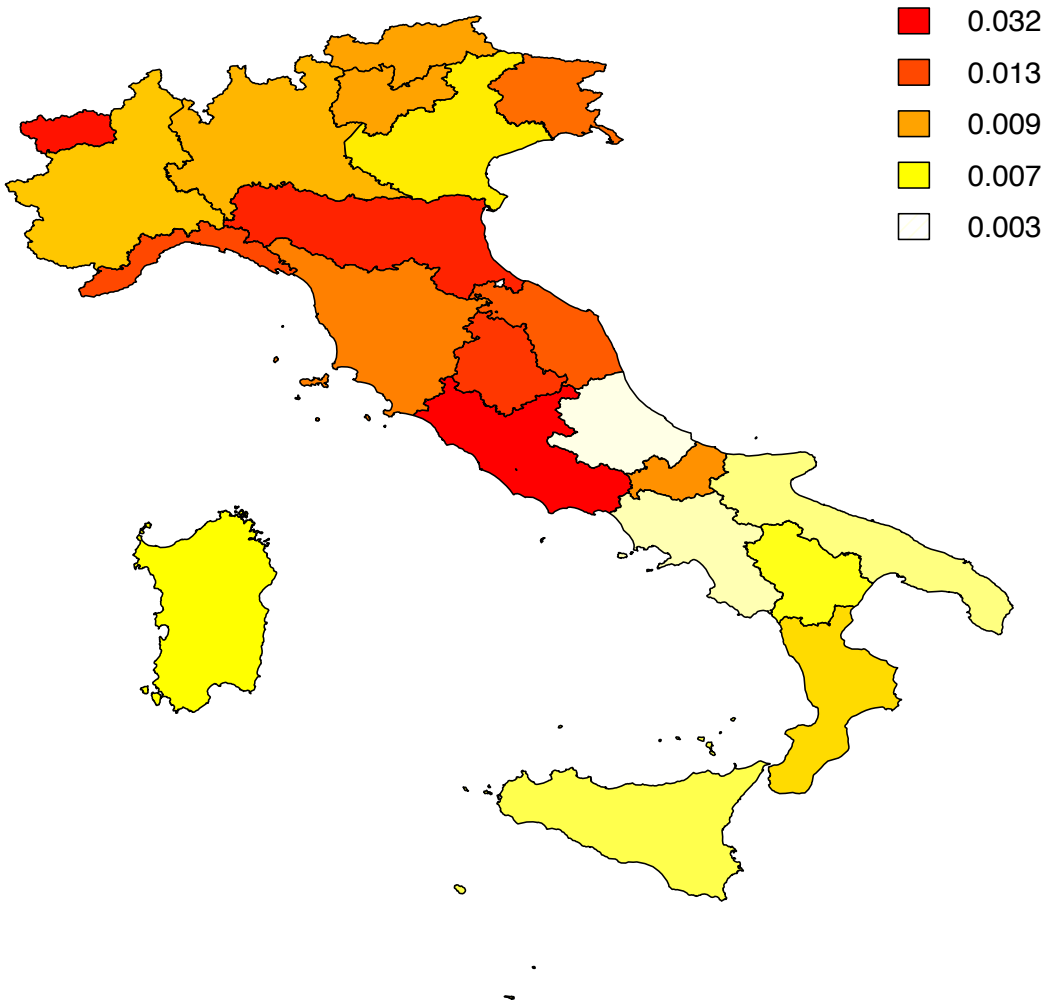


Figure 3 – Regional emigration rate for individuals going to other Italian regions in 2005. Sources: our calculations based on Mocetti and Porello (2010) and European Labour Survey.

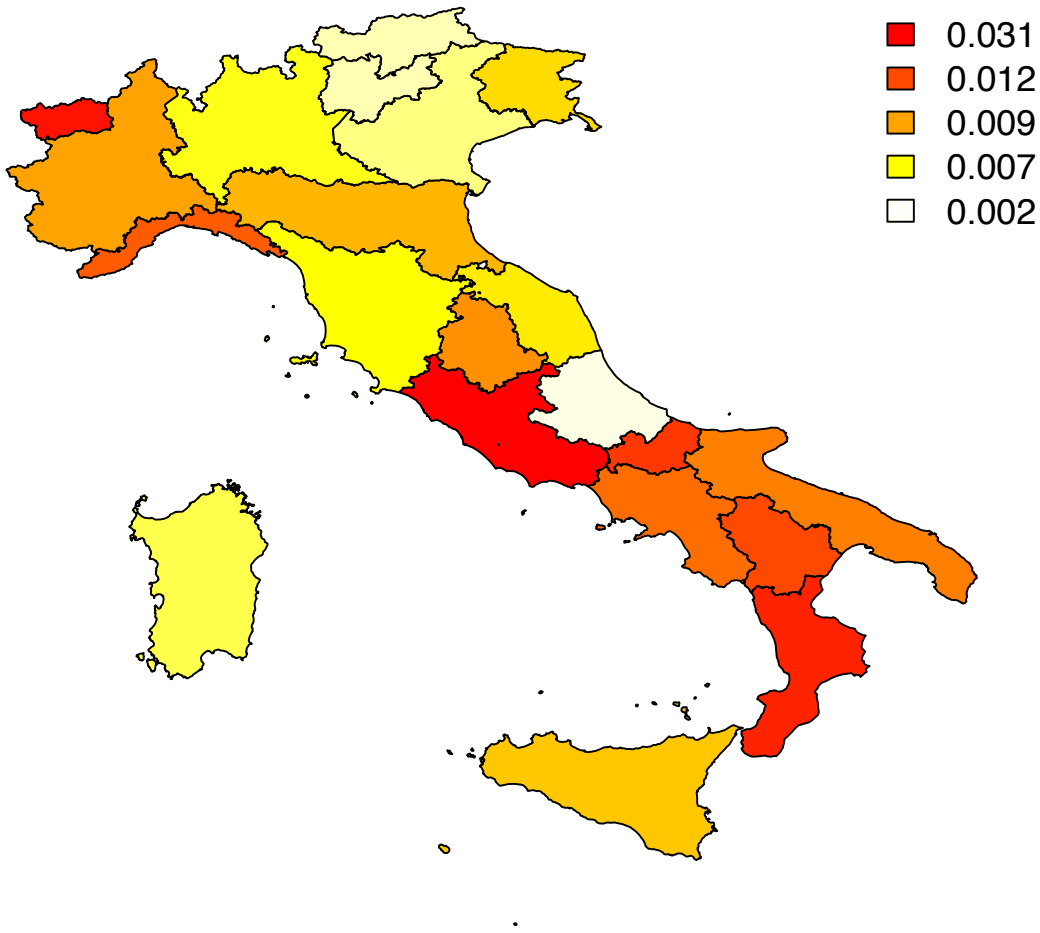


Figure 4 – Migration intensity index by age and education (1992-2005). Sources: our calculations based on Mocetti and Porello (2010) and European Labour Survey.

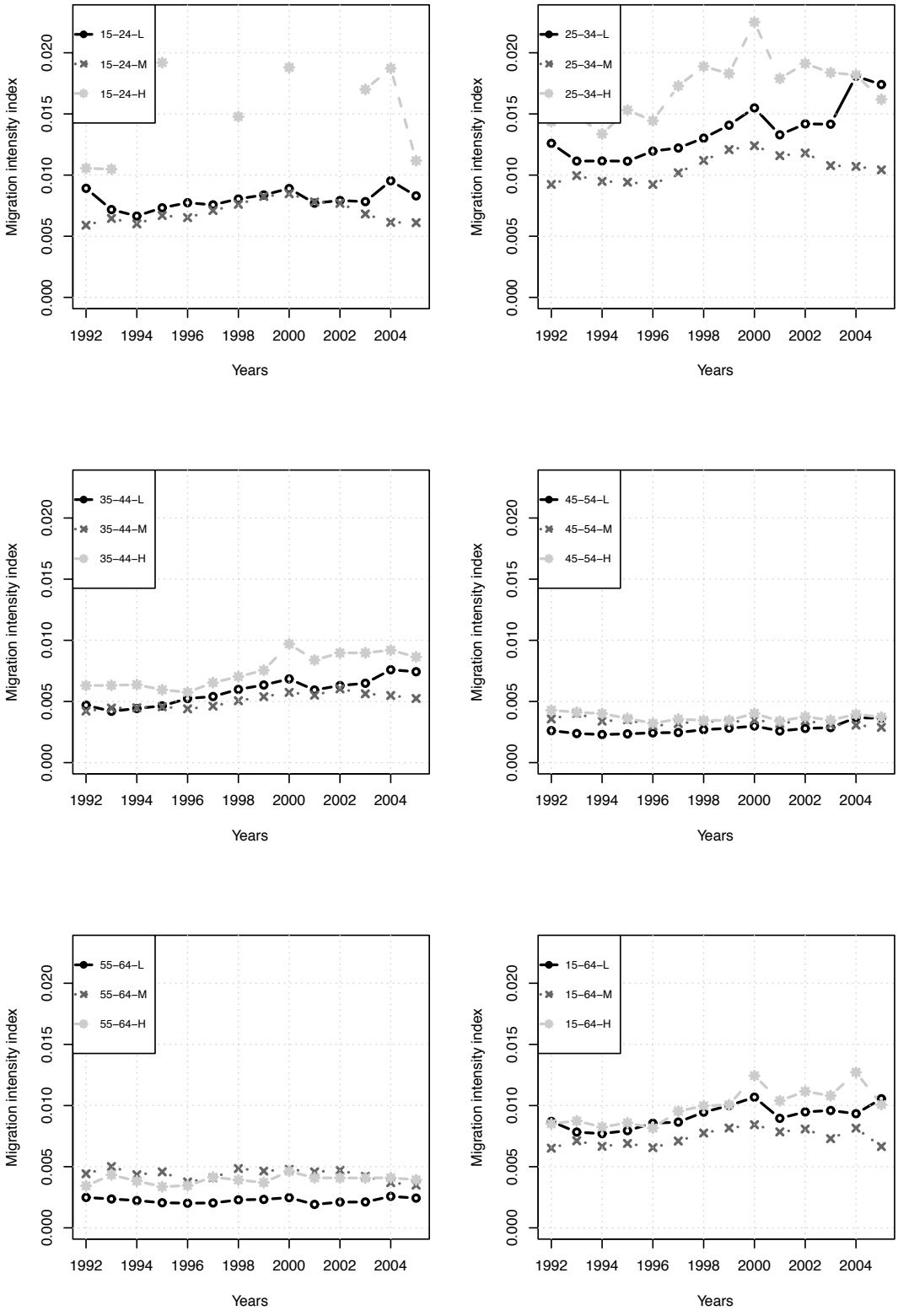
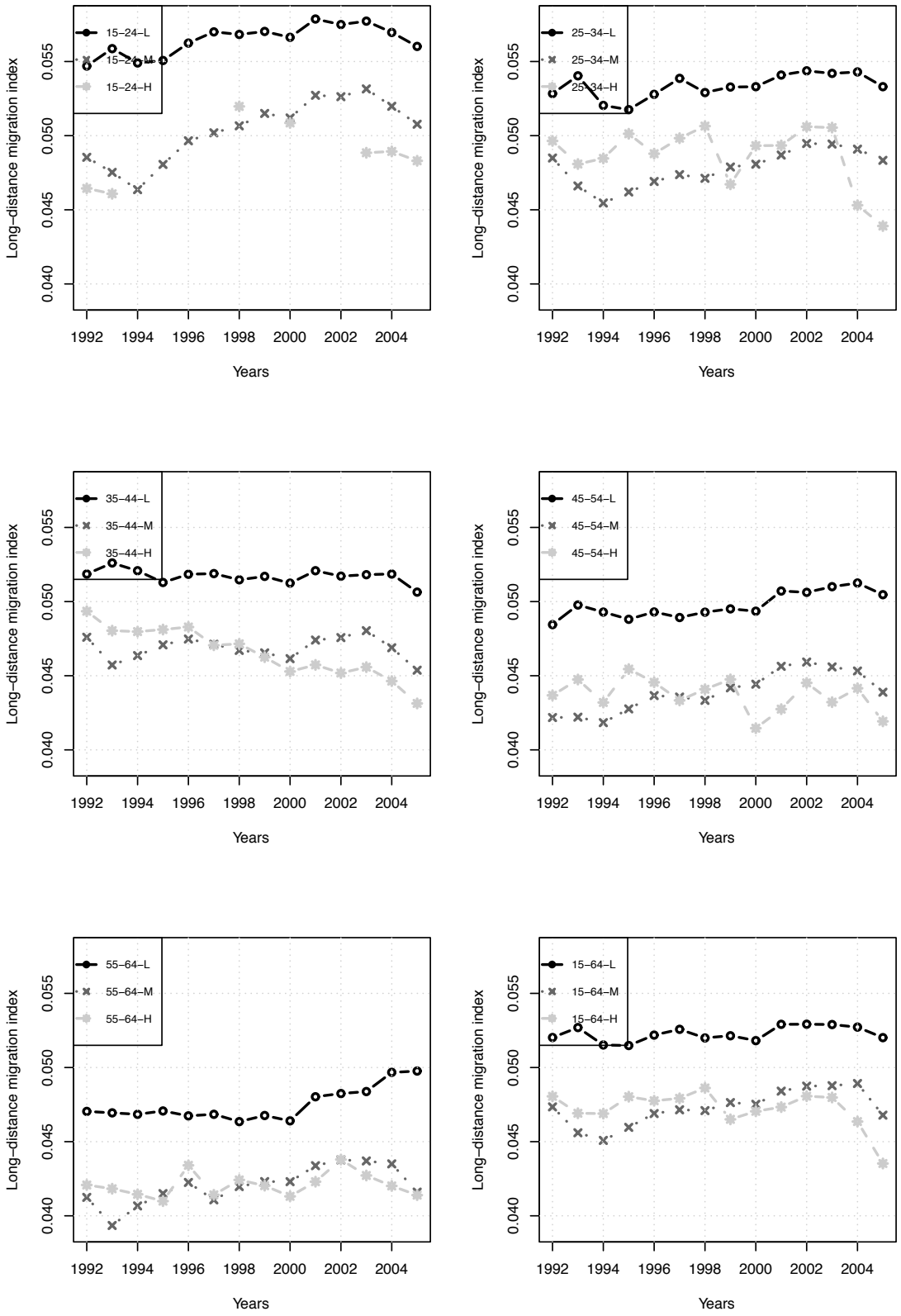


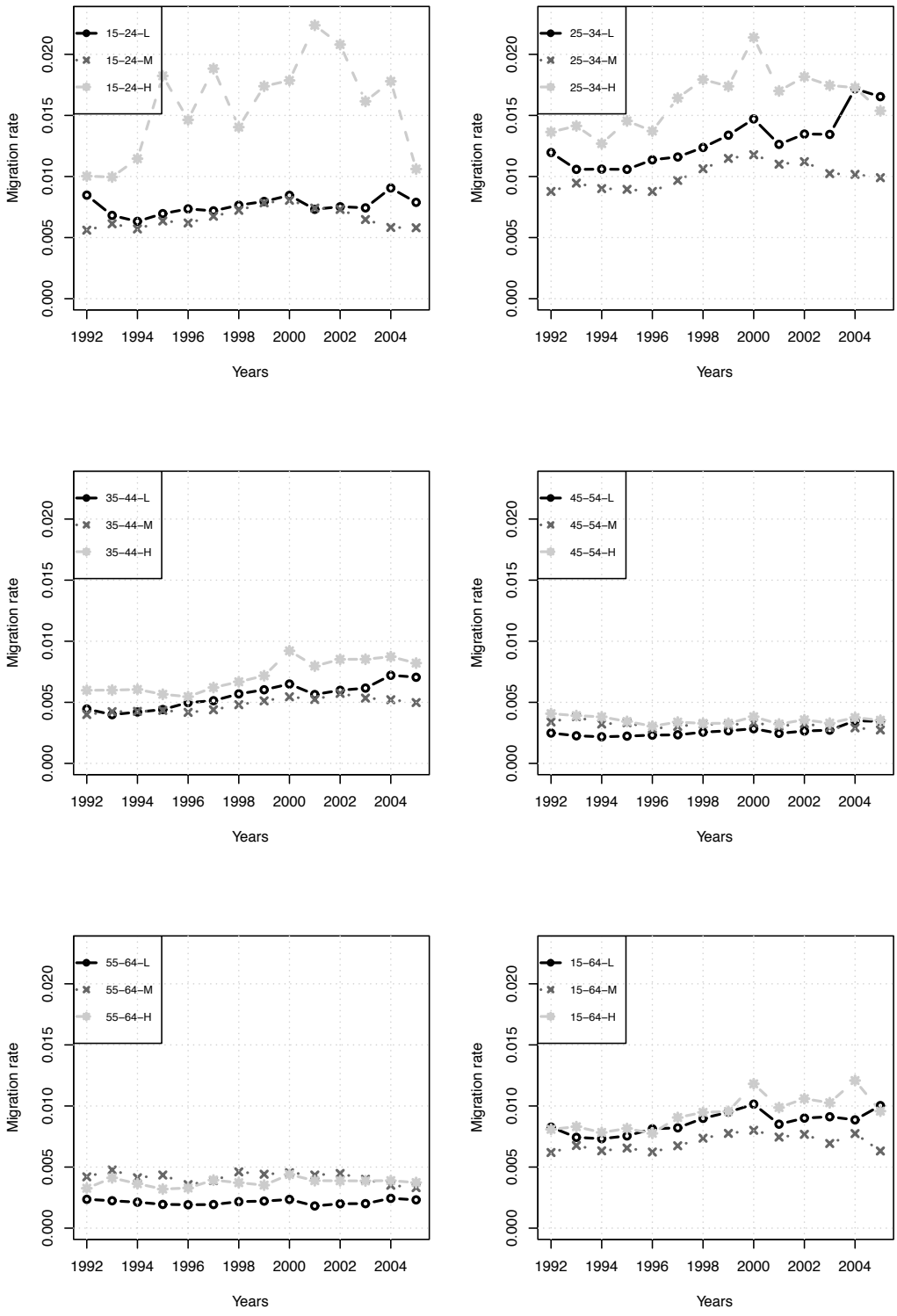
Figure 5 – Long-distance migration index by age and education (1992-2005). Sources: our calculations based on Mocetti and Porello (2010) and European Labour Survey.



Source: Istat.

Appendix

Figure 6 – Migration rate in Italy by age and education (1992-2005). Sources: our calculations based on Mocetti and Porello (2010) and European Labour Survey.



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Collana del Dipartimento di Economia e Management, Università di Pisa

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