The impact of immigrant settlements on Italian firms

Ivan Etzo, Carla Massidda* and Romano Piras**

* *Department of Economics and Business, University of Cagliari*

July 2015

Abstract

An increase in foreign labour supply might represent an opportunity for firms to both cut their costs and increase productivity. Accordingly, new establishments might be opened or relocated where there is abundance of foreign workforce. This study investigates the impact of immigration on both the number of local units and employees at Italian provincial level during the 2004-2010 time span. The results show positive effects on both response variables at aggregate and sectoral level. Once focused on natives' employment, the results exclude any displacement effect for the low-skilled natives, whilst for the high-skilled native workers the estimated impact is positive and statistically significant.

Keywords*: employment, firms, immigrants.*
JEL Classification*: R1, J61*

1. Introduction

Migration is a complex and controversial phenomenon that, due also to the burgeoning increase in the number of movers during the last decades, draws the attention of economists as well as policy makers. Many facets of this phenomenon have been investigated, but only recently have researchers started to think about migrants as an opportunity for firms. An increase of foreign labour force might generate a reallocation of resources across sectors, across firms of the same sector and, inside firms, across different production lines. The channel through which the link between immigrants and firms operates hinges mainly upon skills differentiation between immigrants and natives. Low-skilled immigrants mostly concentrate in manual jobs and/or low-skill intensive vacancies in Manufacturing, Constructions and Services, possibly because of their lower abilities in terms of communicative and language skills. At the same time, firms hiring foreign workers are likely to increase the demand for coordination and interaction jobs, which require higher language skill. Because of that, these jobs are usually managed by natives (Peri, 2012). Conversely, high educated immigrants might positively affect both productivity and wages through other channels such as innovation and entrepreneurship (Lewis and Peri, 2014). More in general, migrants and natives are heterogeneous and can complement each other, giving to firms the opportunity to diversify skills, tasks and products, cut production costs and, in some cases, expand their capital stock (Ottaviano and Peri, 2013).

In this regard, the responses given by the firms to the abundance of immigrant workers might have important consequences not only on the local labour markets, but also on the economic system as a whole. In particular, if firms respond to the positive shock of foreign labour supply either by creating new local units or relocating existing ones where foreign labour is increased, the labour demand would shift rightward leaving local wages unaffected and, possibly, increasing the employment opportunities for both immigrants and natives. This could be the reason why the great part of the existing empirical literature has not been able to find on wages the type of negative impact that a shock on the supply side alone is supposed to generate (Cf. Lewis and Peri, 2014 for an updated review).

The labour supply shock is not the only aspect to consider when analyzing the link between immigrants and firms' decisions. A further mechanism might be related to the consumption side. An increase in the number of immigrants could also positively affect the aggregate demand through a rise in domestic consumption and the new opportunities offered by foreign markets. Substantial empirical evidence of the impact that immigrants have on the trade of goods and services already exists, and in particularly on tourism consumption.[1] As a consequence, new firms might be created or existing firms might expand.

An important contribution to this emerging literature on immigration and firms has recently been provided by Olney (2013). He argues that, in the U.S., the firms' response to increasing immigration flows is mainly given in terms of new

[1] For a discussion on the relationship between immigration and tourism cf. *inter al*. Seetaram (2012). As for the relationship between immigration and trade cf., *inter al*., Genç *et al*. (2012).

establishments opened or moved where there is abundance of low-skilled immigrant workers (production hypothesis). Conversely, the relationship between establishments and immigration driven by immigrant-induced increase in consumption is almost insignificant (consumption hypothesis). In order to disentangle these two mechanisms, Olney proposes an industry level analysis. Accordingly, only industries producing low-skill intensive tradable goods that are easy to relocate are likely to open new establishments in response to an increase in the low-skilled labour supply. Conversely, mobile industries dealing with non-tradable goods and services are more likely to expand in response to an immigration-induced increase in the consumer base. Finally, a third group of firms includes those that are unlikely to respond to an increase of low-skilled workers either because not mobile, or because they belong to skill intensive industries. His results confirm the production channel as being the only one at work.

The work of Olney (2013) is a noteworthy advancement within the migration literature and deserves to be considered as a point of departure for studies focusing on countries, other than the U.S., where immigrants communities have grown rapidly. This is the case of Italy that, during the last decades, has become the destination of an increasing number of low-skilled foreign workers. During the noughties, annual average growth rates of immigrants rose above 10%, with the highest picks registered in the less developed Southern part of the country (the so-called *Mezzogiorno*). Interestingly, both the number of establishments and employees have increased together with immigration. In this context, the empirical literature has not found strong negative effects on wages and employment of native workers (cf., *inter al*., Staffolani and Valentini, 2010). Indeed, complementarity between immigrants and natives seems to prevail. The positive effects appear to be particularly strong for the high-skilled natives.

Given the ongoing debate on whether or not immigrants displace natives in the local labour markets, these results are extremely interesting, but still further research is needed. In particular, Italy lacks of studies that, putting firms at the forefront of the analysis, try to explain how the large influxes of immigrants can be absorbed into local labour markets without negative effects on wages and employment. To the best of our knowledge, the only papers investigating the impact of immigration on Italian firms are Accetturo *et al*. (2012), Bettin *et al*. (2012) and De Arcangelis *et al*. (2015). Among them, only Accetturo *et al.* (2012) focus on investment decisions, but their analysis is restricted to the manufacturing firms and in particular to their decision to expand the investments in machinery. Therefore, none investigation exists on the impact of migration on the decision of firms to expand their capital and, as a consequence, the labour demand.

The present paper aims to give a contribution to the literature on the impact of immigration on Italian firms. The analysis focuses on a panel of 103 provinces (NUTS 3) during the 2004-2010 time span and considers data on local units of firms and their employees. The object is twofold. On the one hand, the study aims at testing whether the upward trend of immigrants determines an increase in capital in the form of new establishments. On the other hand, it also aims at estimating the

direct impact of the increasing number of immigrants on the local labour markets. Such an analysis is performed at two different geographical disaggregation levels. The first level is consistent with the provincial local-units dataset that only allows us to study the impact on total employment. Therefore, these estimates nothing can say about the effect of an increasing low-skilled immigration on natives' employment. To be able to say something on this regard, the empirical investigation turns to the regional perspective (NUTS 2) in order to exploit data from the Italian labour force survey for the period 2005-2010 (ISTAT) which separates workers by skill level and citizenship.

The empirical model is alternatively specified with the number of establishments and employees as response variables and the share of immigrants among the covariates. The study is conducted at national level and, separately, for Centre-Northern and Southern provinces. Furthermore, an industry level analysis is also performed. In this respect, however, it will not follow the same classification proposed by Olney for the U.S. metropolitan areas. For the case of Italian provinces, Olney's criteria are not easily applicable for both technical and conceptual reasons. From a technical point of view, we have a problem of data availability that forces us, on the one hand, to exclude Agriculture and Public Administration from the analysis and, on the other, to give up the division of industries into the three categories proposed by Olney.[2] From a conceptual point of view, the following arguments should be considered. First of all, the feature of tradability used by Olney in order to differentiate industries that are mobile, but tied to the local demand (consumption hypothesis) loses its efficacy when applied to a sub-national case like Italy where distances between provinces are relatively very short. The second regards the dimension of Italian local units, which have an average of 3.6 employees per local units in 2010, thus the vast majority of Italian local units are very small and in this sense quite mobile. Last, but not least, using the same argument proposed by Olney for the U.S., the magnitude in the share of immigrants, which in Italy is increasing but much lower than in the U.S., makes it difficult to postulate that an increase in the share of immigrants is able to rise significantly the demand for goods and services. Therefore, it is easy to argue that the main reason why it might be profitable for firms operating in Italy to open new local units or to relocate existing ones derives from the production hypothesis. At most, it could be possible to identify some industries for which the two mechanisms might cohabit and where the consumption hypothesis is likely to play a noticeable role. One example is given by Hotel&Restaurants (H&R) since for this industry, which represents an important share of the tourism sector that employs a high percentage of low-skilled immigrants workers, a strong link between migration and tourism demand has recently been found (Massidda *et al.*, 2014).

Building upon these ideas, an empirical investigation that distinguishes firms belonging to Manufacturing (with Construction), Services and, within Services, to H&R is performed. While in both sectors the production hypothesis is expected to hold, firms belonging to H&R are explicitly considered to test whether a significant relationship between immigration and firms can be found also where the

[2] For instance, our data do not allow to differentiate between wholesale trade and retail trade.

consumption channel is likely to be important. As for the estimation technique, in order to deal with the potential endogeneity of immigrants, estimates are carried out with an instrumental variable technique in which the instrument is built exploiting the pulling forces that the long-settled immigrant communities exerts on immigrants flows.

The results show that an increase in the share of immigrants leads to an increase in both the number of establishments and employees. As for natives' employment, displacement effects are excluded. In particular, while the low-skilled natives seem not to be affected by an increase in the immigrant workforce, for the high-skilled native workers the estimated impact is positive and statistically significant.

The paper is structured as follows: Section 2 reviews the relevant empirical literature on the impact of immigration on local economies and in particular on firms' investments. Section 3 describes the main patterns and trends of both local units and immigration in Italy during the period 2004-2010. The econometric model, the variables and the data are described in Section 4. Sections 5 and 6 present and discuss the results of the empirical analysis. Finally, a summary of key findings and policy implications are provided in Section 6.

2. Review of the literature

During the last decades Italy has become the destination country for an increasing number of international migrants, the great majority of which is low-skilled. This situation has contributed to increase the fear that the pressure of these additional workers on the local labour markets might negatively affect natives' wages and job opportunities. Contrarily to this common feeling, even though empirical studies fail to find a general consensus on this issue[3], until now complementarity between migrants and natives seems to be dominant. This picture emerges thanks to the support offered by a small, but growing number of studies which address the debated issue from different points of view.

The paper of Gavosto *et al*. (1999) can be considered one of the pioneering works dealing with this topic. According to their results, wages of native manual workers are positively influenced by the inflow of immigrants, especially in small firms. They argue that this happens because firms suffer a labour constraint due to the unwillingness of native workers to undertake certain jobs. Following Gavosto *et al*. (1999), Venturini and Villosio (2006) try to give a new contribution to the emerging debate by focusing on the potential displacement of natives due to the immigrants' flow. They analyse both the displacement risk (transition from employment to unemployment) and job search effectiveness (transition from unemployment to employment). Their findings give proof of a predominantly complementary effect

[3] The same emerges at international level (Ottaviano and Peri, 2012).

between migrants and native workers in the Italian labour market.[4] Subsequent to Venturini and Villosio (2006), Staffolani and Valentini (2010) return to the wage perspective and provide new evidence in favour of complementarity between migrant and native workers. In particular, the authors show that native workers' wages (skilled and unskilled) always rise with immigration.

The perspective of analysis considerably changes with the paper of Mocetti and Porello (2010). Their study focuses on the role that foreign migrants play on the natives mobility from the South to the Northern macro-area of the Country. They find that immigration is positively associated with inflows of highly-educated natives, suggesting complementarities. However, they detect displacement of low-educated natives. The impact of international immigrants on native workers mobility is also analyzed in Brucker *et al.* (2011). They find evidence in favour of complementarity, but argue that when complementarity between foreign and native workers is detected at local level, nothing prevents that international migrants compete with potential domestic migrants from other areas of the country. If this were the case, international migration, hindering the reallocation of the labour input, could exacerbate internal imbalances.

Moving from these last findings, Romiti (2011) proposes a study of the impact of immigration on the Italian labour market based on a structural model that allows for imperfect substitution between immigrants and natives within the same "area-skill cell". The author finds a small degree of imperfect substitution between immigrants and natives, but strong complementarity between high- and low-skilled workers. In general terms, therefore, the findings of Venturini and Villosio (2006) that immigrants do not displace natives, are confirmed. Interestingly, the simulation of the model, obtained by using the estimated parameters, suggests that the most affected by immigration are the immigrants themselves.

A new change in the perspective of analysis occurs with Falzoni *et al*. (2011). They focus on international integration, in terms of both goods and workers, and show that immigration affects only the wages of unskilled. Moreover, they argue that individual characteristics of workers mainly affect skilled and unskilled wage dynamics than wage differentials.

Focusing on the effect of immigration on the female labour supply, the works of Barone and Mocetti (2011) and Romiti and Rossi (2011) can be considered as two further contributions suggesting that complementarity between native and migrant workers tends to prevail. Barone and Mocetti (2011) study the effect of low-skilled immigration on the female labour supply and find that, native Italian women, especially highly skilled, tend to increase their working time if the number of immigrants supplying household services increase. Similarly, Romiti and Rossi (2011) find that immigrants contribute to the postponement of retirement for women. An increase in immigration rate which occurred over the 2000-2008 time period

[4] The economic literature considering the displacement of natives by immigrants in the U.S. concludes that there is no "one-to-one" offsetting outflow of natives caused by the inflow of immigrants (Kalantaryan, 2013).

raised the retirement age for Italian women by almost one year. Conversely, they find that the impact on man does not exist.

A contribution to the debate can be considered also the work developed by Bratti and Conti (2014) who investigate the causal effect of foreign immigration on innovation at provincial level during the 2003-2008 time span. They find that an increase in the share of low-skilled migrants over population reduces patent applications, whereas the impact of high-skilled immigrants on innovation is positive.

Summing up, the works dealing with wages and labour market in Italy in general fail to find a significant negative impact of immigration on employment and wages of native workers. Precisely, it seems that wages and employment remain substantially unaffected, or even positively influenced. Thus, it is possible to say that the main contributions on these issues report the prevalence of the complementary nature in the relationship between foreign and native workers. The positive effects seem to be particularly strong for the high-skilled segments of the local population. At the same time, the employment displacement effect, when detected, appears to be very weak and limited to the less qualified jobs or irregular economy. What still remains to be investigated is how large influxes of immigrants can be absorbed into local labour markets without changes in wages and without reducing natives' employment.
As recently discussed by Ottaviano and Peri (2013) and Olney (2013), an in deep knowledge of the relationship between immigration on the economic system as a whole can be grasped by studying the reactions of the production system. For the case of Italy only recently have researchers began to consider how firms respond to the huge increase of foreign labour supply, to the best of our knowledge, there are only three works related to the present contribution.

The first contribution that focuses on the impact of immigration at Italian firm-level is delivered by Accetturo *et al*. (2012). They investigate how a sample of Italian manufacturing firms responds to an increase in the relative abundance of low-skilled migrant workers. They find that firms' investment rate in machinery is positively affected and that the relationship is stronger for small firms and less technologically intensive industries.

A production-theory approach is adopted by Bettin *et al.* (2012) to investigate how immigrant workers directly contribute to the production process of Italian firms. At the same time, this paper is able to shed light on the relationship existing between immigrant and native labour force. From their results it appears that in high-skill intensive sectors foreign workers are complementary with respect to both blue collar and high-skilled natives. Nevertheless, the authors warn that a sharp increase in the availability of immigrant workers "might foster production in less skill intensive sectors and push firms towards the use of less skill intensive techniques".

The third contribution that takes a firm's perspective is the one proposed by De Arcangelis *et al.* (2015) who focus on the performances of the production system and test the effect of an increase in migration flows on manufacturing firms' performance at local level. The model is estimated for the Italian economy during the recent years

of rapid and varied migration. Their results show that migrants positively affects firm's performance, especially in low-skill sectors like Food and Beverages and Furniture.

To conclude, up to the existing firm-level evidence, the presence of immigrants positively affects the performance of the manufacturing sector, firms are inclined to make new investments in machinery and, basically, immigrants and natives are confirmed to complement each other. Overall thus, the positive effects that immigrants exert on the production system seem to be confirmed. Accordingly, firms might find profitable to expand their productive capacity and build new local units in areas where there is abundance of foreign labour force. The immigration literature has only recently begun to study the response of firms to the availability of immigrants, which can stimulate investments with positive impact on the local economies, thus further research is needed.

3. Immigration and local units in Italy

The present section provides a descriptive analysis regarding migration, local units of firms and their employees in Italy during the 2004-2010 time span. The period coincides with the sample of the empirical analysis that has been restricted to these years because of data availability.[5]

The overview is given at both aggregate and sectoral level by focusing on a standard classification of the economic activities. Accordingly, the descriptive analysis provides a more detailed disaggregation than that used in the subsequent empirical analysis. This was done in order to provide a full picture of the Italian case with respect to migration, local units and employment.

Two are the main stylized facts that emerge from the following analysis. On the one hand, the provinces with the highest average growth rates of both immigrants and local units concentrate in the Centre and the South. On the other hand, the Services sector shows the highest growth in the number of foreign workers and local units for all macro-areas.

3.1 Immigration

In the last decades, starting from the middle of 1990s, immigration has become an important aspect of Italian society. Foreign citizens, reported to be 1.3 million in the 2001 census, more than tripled in the subsequent ten years reaching 4.1 million in 2010. In terms of percentage over Italian population, they represented the 2.2% in 2001 while in 2010 this percentage rose to 7%. As regards their origin country, Romanians, Albanians and Moroccans are the three largest communities followed by Chinese, Ukrainians and Filipinos. The great majority of immigrants comes from the less developed or emerging economies. Overall, the sixteen highest nationalities account for about three quarters of all immigrants (Table 1). Migrants have settled principally in the Centre-North, where they find more favourable conditions in terms

[5] Cf. sub section 4.2 for details.

of employment opportunities, availability of public services and a vast range of other amenities.

[Table 1]

Data on employment, which are taken from the Italian Labour Force Survey conducted by ISTAT, are reported in Table 2. Immigrants workers are grouped by sector of occupation and geographical area of residence[6]. It emerges that in 2010, at the end of our empirical investigation, more than 2 millions of immigrants are employed in Italy: 59.5% are employed in the Services sector, followed by 36.5% in the Industrial sector and, finally, about 4% in the Agriculture sector. At sub-national level, almost 61% are employed in the North, followed by the Centre (27%) and the South (12%). After disaggregating by macro-area and sector, other peculiarities do emerge. For example, in the North (and particularly in the North-East) the percentage of immigrants in Manufacturing is higher than nationwide average. Conversely, in the South the percentage of immigrants in the Agriculture sector is three times higher than the national one. Notice also that inside the Industrial sector, Constructions sum up to 46% of employment.

[Table 2]

The maps reported in Figure 1 represent the share of working-age foreigners on total population by province, thus highlight the weight of immigrants with respect to local labour markets. It is confirmed that, except in a few cases, the provinces with the highest shares are concentrated in the Centre-North. Conversely, in terms of growth rates, the provinces of the Centre and South areas of the Country are those experiencing the highest increases.

[Figure 1]

To conclude, it is interesting to report the contribution of immigrants on the value-added creation. According to Unioncamere estimates, in 2010 the percentage of the national value added due to the foreign employees is about 12.0%, and it almost doubled in about five years (Rapporto Unioncamere, 2013). When considering the role of immigrants at sectoral level, Constructions register the highest weight with a 23.9% (it was 13.4% in 2005), followed by Agriculture with 15.1% (it was 8.5% in 2005), Industry with 11% (it was 7.3% in 2005) and Services 11.2% (it was 6.4% in 2005). Finally, taken the total value added due to foreign workers, the highest share is registered in the Services sector (68.5%), followed by Industry (17.3%) and Constructions (11.4) and, finally, Agriculture (2.8%).

3.2 Local units

The present section provides a descriptive analysis regarding local units of firms and their employees in Italy. These data, made available by ISTAT, derive from the

[6] The disaggregation is constrained by data availability which, for example, does not allow to separate Commerce from H&R.

Statistical Register of Active Enterprises (ASIA)[7] and cover the industrial and service activities. The overall number of firms involved in the Industrial and Services sectors in Italy rose from about 4 million in 2004 to 4.5 million in 2010. To these firms, on average, belong about 4.8 million of local units which employ roughly 17 million workers. The number of establishments and their employees by sector of activity are reported in Table 3. Accordingly, Industry is split into Manufacturing and Constructions, whereas Services is split into Commerce, H&R and Other Services[8]. On average, local units and employees have increased by approximately 3% and 5%, respectively (Table 4, last Column).

[Table 3]

In greater detail, from the composition of establishments by sector of economic activity represented in Figure 2a, it emerges that Other Services has the highest share (43%), followed by Commerce (slightly less than 30%, excluding H&R), Manufacturing (just over 10%), and finally Constructions (about 13%) and H&R (about 7%).

[Figure 2]

In terms of growth rates, Manufacturing and Commerce are the only ones reporting a negative sign for all years of the period, while in Constructions and H&R negative rates are only recorded in the years just after the crisis (2009 and 2010). Other Services is the only sector which reports always positive growth rates (Table 4).

[Table 4]

As for the number of employees, Other Services is again the sector with the highest share (about 37%), while Commerce (20%) loses the second place because Manufacturing collects over the 25% of total employees (Figure 2b). The situation is almost unchanged for Constructions (about 11%) and H&R (approximately 7%). Looking at the growth rates, again Manufacturing shows the worst dynamics for the entire period, while Other Services keeps being the only sector reporting positive growth rates for all the years considered (Table 4).

Matching together the information on establishments and employees, a useful indicator that can be calculated to evaluate the Italian production structure is the average size of local units measured in terms of number of employees. According to data reported in Table 3, at aggregate level the average number of employees per establishment equals to 3.6. This indicator tells if establishments tend to increase their dimension in terms of employees or not. Only the Retail and Trade sector increases in size, for which, excluding the years during the crisis, a reduction in the number of local units (-0.9 in 2004 and -6.6 in 2010) is associated to an employment growth (+1.8 in 2004 and +5.42 in 2010).

[7] Cf. sub-section 4.2 for details.
[8] The data available for local units allows to separate Commerce and H&R.

Turning the attention to the provincial distribution of local units, the highest concentration of establishments is registered in the Northern area of the Country. Conversely, the central-southern provinces are those experiencing the fastest growth rates. This picture is highlighted in Figure 3, where average data for the period 2004-2010 is reported at both aggregate and sectoral levels. More in detail, on average, 51% of local units is located in the Northern provinces, 21% in the Centre and 28% in the South. With slightly different percentages, the same framework emerges by disaggregating the economic system by sectors: all sectors report higher concentration degrees in the Nothern area of the Country.

In terms of employees, the geographical distribution of Italian establishments give rise to a scenario where 56% of employees are hired in the North (corresponding to 9.7 million), 21% in the Centre (corresponding to 3.6 million) and 23% in the South (corresponding to 4 million). In this regard, it is interesting to note that the average size of local units measured in terms of number of employees, which, as said above, equals to 3.6 at the national level, reaches the value of 4 in two Northern macro-area, decreases to 3.5 in the Centre and further reduces to 3 in the South. Finally, it is worth to be noted that local units in Commerce, Transportation and Hotels employ the largest share of workers in both Northern and Southern macro-areas (31% in North-West, 33% in North-East, 38% in South and 42% in the Islands), while the Centre is characterized by a higher proportion of employees in Services (35 per cent).

[Figure 3]

4. Estimating the impact of immigration on Italian local units

4.1 Econometric model

As previously anticipated, the aim of this study is twofold. On the one hand, it intends to test whether the upward trend of immigrants positively affects the number of Italian local units. On the other hand, it also aims at testing the direct impact of an increasing number of immigrants on local employment.

As far as the relationship between immigration and the number of local units is concerned, a panel of 103 Italian provinces (NUTS 3) during the 2004-2010 time span is considered. The empirical investigation is carried out for the whole Country and, separately, for Centre-Northern and Southern provinces. Furthermore, total establishments are disaggregated into Manufacturing (with Constructions) and Services. Like in Olney (2012), we argue that a positive relationship between the share of immigrants and the dependent variable would be the result of firms increasing capital (i.e. local units) in order to take advantage of the abundant low-skilled immigrants, that is the production hypothesis. As regards the consumption hypothesis, for the reasons discussed in the Introduction, we argue that in Italy there are very few sectors where this channel might have a chance to prevail on the alternative mechanism. One example is given by H&R, on which the impact of migration has been explicitly analysed. Recent empirical evidence, in fact, indicates

the existence of a strong relationship between immigrants and the Italian tourism demand (Massidda *et al.*, 2014).

The baseline equation to be estimated is the following:

$$(1) \quad ln\, y_{i,t} = \beta_0 + \beta_1 ln\, Sh\_Imm_{i,t} + \beta_2 g\_vapc_{i,t} + \beta_3 lnDens_{i,t} + \beta_4 lnUnemp_{i,t} + \beta_5 South_i + \beta_6 (ln\, Unemp \times South)_{i,t} + \mu_i + \gamma_t + \varepsilon_{i,t}.$$

where the dependent variable $ln\ y_{i,t}$ is the log of the number of establishments in province i at year t. The variable of interest ($ln\ Sh\_Imm_{i,t}$) is the log of the share of working age foreign born population resident in province i at year t. As regards the other covariates, $g\_vapc_{i,t}$ indicates the growth rate of value added per capita, which should capture global productivity shocks at provincial level; its effect is expected to be positive. The variable $ln\ Dens_{i,t}$ which stands for the log of population density, is often significant in models analyzing the determinants of new firms creation and serves to capture the positive agglomeration (spill-over) effects (Armington and Zoltan, 2002). Finally, the log of the unemployment rate ($ln\ Unemp_{i,t}$) is included in order to control for provincial-specific, time variant, labour demand shocks and its expected sign is not defined a priori. On the one hand, in fact, an increase in unemployment levels might increase the probability that the unemployed decide to start their own business. On the other hand, high unemployment rates can be the result of an economic downturn, which increases the risk of starting new businesses and discourage workers to start their own business. Considering the well-known Italian economic dualism between the Southern and the Centre-Northern regions, it is possible that these two counterbalancing effects might work differently at provincial level according to their geographical location. Accordingly, in order to capture differences in slope coefficient, equation (1) includes an interaction term between the provincial unemployment rate, $ln\ Unemp_{i,t}$, and the dummy variable $South_i$. The latter equals one if the province is located in the South and zero otherwise. Differences in some characteristics which are time invariant during the period considered, such as the average endowment of infrastructures, are captured by the fixed effects μ_i. Similarly, the effects of common shocks which affect all the provinces are captured by including the temporal dummies γ_t. Finally, $\varepsilon_{i,t}$ is the error term uncorrelated with the covariates.

Turning to the relationship between immigration and employment, as mentioned in the Introduction, the investigation is performed at both provincial and regional level. This is because the aim is to estimate the effect of immigration not only on total employment, but above all, on native employees divided by skill levels. Since the provincial data set cannot differentiate between natives and foreign born workers, it turns useful for our purposes to consider the regional level data taken from the Italian labour force survey (ISTAT) which separates workers by skill level and country of origin. The regional-level analysis is performed for the period 2005-2010.[9]

[9] The information regarding the employees citizenship is only available starting from the 2005.

The econometric model proposed for this analysis is specified as follows: [10]

$$(2) \qquad ln\, y_{i,t} = \beta_0 + \beta_1 ln\, Sh\_Imm_{i,t} + \beta_2 g\_vapc_{i,t} + \mu_i + \gamma_t + \varepsilon_{i,t}$$

where now the dependent variable $ln\ y_{i,t}$ is the log of the number of employees and it is regressed on the share of immigrants, controlling for global productivity shocks, fixed effects and temporal effects.

4.2 Data sources and description

This study utilizes data on establishments, foreign immigrants and other control variables for 103 Italian provinces (NUTS 3). Data on establishments are taken from the Statistical Archive of Active Enterprises (ASIA) managed by the Italian National Institute of Statistics (ISTAT). Information on local units, that is the number of establishments at provincial level, are available since 2004. However, given that in 2010 there was a change in the methodology of data collection, the present paper restricts the empirical investigation to the 2004-2010 time span. The ASIA data base covers all local units in the Industrial and Services sectors which are active for at least six month in that specific year and provides information regarding the total number of employees. Self employed are included in the database as they are considered as a local unit of production. Furthermore, all the data are also available at sectoral level, which allows to focus the empirical analysis to one specific sector.

Data on natives' employment by skill level are taken from the Italian Labor Force Survey (ISTAT). These data are available only at regional level, and the information regarding the nationality, is available starting from 2005.

Data on immigrants are taken from ISTAT archives and refers to the foreign born population resident in Italy and not holding the Italian citizenship. Unfortunately, information on the educational attainment is not available, hence we cannot differentiate immigrants by skill level. Conversely, having the information on immigrants age, we can consider only the working age population (16-64 years old), which is a better proxy for the immigrant labour supply. Finally, both data on unemployment and population density are taken from ISTAT data-warehouse.

4.3 Estimation method

One of the main concern when studying the economic impact of migration is that OLS estimates of equations (1) and (2) could be potentially not consistent due to the possible endogeneity of the migration variable. The source of the endogeneity could be some excluded variables which might affect both the increase in the number of establishments in one province and the immigrants' decision to move in that province. For example, provinces that are experiencing an economic expansion could both attract new investments (i.e., the creation of new establishments) and pull foreign workers immigrants. In this case OLS results could be seriously biased. In order to overcome this problem and obtain reliable estimates this study applies the

[10] Compared with equation (1) the right hand side of equation (2) does not include the population density and the unemployment, which represent specific controls for the number of local units. In fact, the first controls for the agglomeration effects, whilst the second one controls for labor demand shocks.

two stages least square (2SLS) estimator. Following both Altonji and Card (1991) and Card (2001) the instrument has been constructed by exploiting the correlation between the new immigrants inflow from a source country and the historical persistence of communities from the same country in the destination area (i.e., city, province or region). Thus, the resulting variable predicting the yearly number of immigrants in each Italian province has been built as follows:

$$(3) \qquad p\_sh\_imm_{i,t} = \frac{\sum_i (sh\_imm_{j,i,2002} * imm_{j,t})}{pop_{i,t}}$$

where, $sh\_imm_{j,i,2002}$ is the share of immigrants from country *j* residing in province *i* in 2002 over the total number of immigrants from country *j* residing in Italy in 2002[11] and $imm_{j,t}$ is the total number of immigrants from country *j* residing in Italy in year *t*. In order to obtain the predicted exogenous component of the share of immigrants the numerator has been divided by the total population resident in each province (i.e., $pop_{i,t}$). The first stage regression results reported in Table 5 show that the log of the predicted share of immigrants has a positive and statistically significant coefficient. The negative and statistically significant impact of both unemployment and the growth rate of value added per capita might suggest that immigrants tend to prefer more affordable provinces and consequently that the following OLS estimates might be biased down if immigrants are moving to provinces with weak economic and local units growth.

[Table 5]

5 Results for local units

5.1 General overview

The first step of the empirical analysis is to estimate equation (1) for both the country as a whole and for the two macro areas. Results are reported in Table 6. It clearly emerges a positive relationship between the number of local units and the provincial share of immigrants with an estimated elasticity of 0.120. At macro-area level, as shown in Columns 2 and 3, such a relation seems slightly higher in the South (0.174) rather than in the Centre-North (0.092). This result is consistent with the fact that the immigrants shares have grown faster in the Southern provinces than in the rest of the Country.

[Table 6]

As for the other covariates, at aggregate level (Column 1), only population density and the dummy for Southern regions report statistically significant coefficients. According to the premises, these results suggest, on the one hand, that agglomeration effects are relevant for the country as a whole and, on the other hand, that provinces located in the *Mezzogiorno* have structural differences that makes them different (worse off in terms of creation of local units) from all the others along the boot (as the Italian peninsula is commonly known).

[11] The 2002 is the first year for which data of immigrants by country of origin are available at provincial level.

5.2 Estimates by sectors

Having shown that local units are positively affected by the share of immigrants, the enquiry goes into more details in order to analyse if such a link differs between the two main sectors, that is, Manufacturing and Services. The results for Manufacturing are reported in Table 7. It is worth noticing that in all regressions the estimated coefficient of the share of immigrants is always highly significant. A 10 per cent increase in such a share induces a 1.77 per cent increase in the number of local units at national level, a 1.19 per cent variation in the Centre-North and a 3.02 per cent in the South.

[Table 7]

When looking at the Services sector in Table 8, the estimated coefficients for the share of immigrants decrease at both aggregate and macro-area levels. Moreover, when looking at H&R, the positive impact of the share of immigrants on local units is confirmed and reinforced in magnitude for both Centre-Northern and Southern provinces. In addition and differently from the estimates in Table 7, all the covariates are statistically significant for the whole country (Column 1).

[Table 8]

6. The impact of immigrants on the number of employees

According to the results discussed in the previous section, it seems plausible that in Italy new firms are created or existing local units are relocated in order to take advantage of the relatively abundant supply of low-skilled foreign workers. Therefore, it is interesting to investigate whether this rightward shift of the labour supply curve due to an increased number of immigrants workers is followed by a rightward shift in the labour demand curve caused by an increase in the number of establishments. If this were the case, the new equilibrium would be characterized by an increase in employment without a significant impact on wages. In order to provide empirical support to this possible dynamic adjustments, the present section starts investigating, at provincial level, the relationship between immigration and the number of total employees in the Italian local units. Estimations are based on the model proposed in equation (2) and on the same disaggregated perspective proposed for the analysis on local units.

The results reported in Table 9 show that an increase in the share of immigrants exerts a positive effect on total employment, both at national and macro area level. In particular, a 10 per cent increase in the share of immigrants leads to a 1.76 percent increase in total employment at national level, a 1.77 per cent for Centre-Northern and 1.81 per cent for South.

[Table 9]

Estimates by sector confirm the positive influence of immigrants on the number of employees (Tables 10 and 11). It is worth emphasising that in Manufacturing the

impact of the share of immigrants is lower than in Services and that, compared to Services, the H&R industry reports an higher elasticity.

[Table 10]
[Table 11]

According to these results, the general picture that emerges is definitely in favour of a positive significant impact of the immigrants share on the number of employees for all sectors, at both national and macro-area level. However, focusing on total employment does not allow to say anything about whether immigrants displace native's employment or not. This is a very critical point in the ongoing public debate not just in Italy, but in all the main receiving countries.

In order to give an empirical contribution to the aforementioned debate, equation (2) is re-estimated with the regional level data. Estimations are run for total employment and for native workers, both aggregated and divided by skill level.

The results are reported in Table 12. Interestingly, these estimates, while confirming the outcomes obtained at provincial level for total employment (Column 1), show no negative impact of immigration on native employees (Column 2). More specifically, no statistically significant effect is detected for low-skilled native employees (meaning no displacement), whilst the impact on high-skilled native employees is positive and significantly different from zero (Columns 3 and 4). This last result can be interpreted in favour of some sort of complementarities existing between low-skilled immigrants and high-skilled natives which have been already highlighted by previous literature focusing on Italy (Romiti, 2011).

[Table 12]

Conclusions

The present study has investigated the impact of immigrants on the number of establishments and employees in Italy. The hypothesis being tested is that an increase in the relative size of foreign workforce can have a positive impact on the local economy by attracting new local units, which might be the results of either a relocation or the creation of new firms. On the one hand, in fact, firms might exploit the increase in the low-skilled labour supply. On the other hand, an increased number of foreign population might have a positive impact on consumptions. The latter, in particular, might be a very weak channel in Italy, only noticeable for some specific industries which are positively affected by the presence of immigration communities (e.g., tourism). The empirical investigation is performed at both aggregate and sectoral level. Moreover, in order to take into account possible differences arising from the Italian economic dualism, different estimations have been run for the country as a whole and, separately, for Centre-Northern and Southern provinces.

At nationwide level, an increase in the share of foreign born people has a positive impact in the number of establishments. Turning to the macro-areas perspective, the impact of the share of immigrants on the number of establishments is positive and

significant for both the Centre-North and the South, thought it appears to be slightly stronger for Southern provinces than for the rest of Italy. This result might be the effect of the different labour supply shocks' intensities. In fact, the Southern provinces are those that experienced the highest growth rates of the immigrants share. The analysis carried out for the two main sectors, that is Manufacture and Service, has confirmed the positive impact of migration on the number of establishments. In addition, the positive outcome found for H&R can be explained by the well known tourism-migration nexus. It is worth to be noted that the analysis at sectoral level confirms, again, a higher impact of immigration on Southern provinces than on the rest of the Country.

As far as the employment level is concerned, the effect of migration on the number of total employees is again positive and significant at nationwide level and for both macro-areas. Moreover, as regard the effect of immigrants on natives' employment, it seems that in Italy no sign of displacement exists between immigrants and low-skilled native workers, whereas the impact on high-skilled natives is estimated to be positive. Thus, while low-skilled native workers appear to be unaffected by immigration, high-skilled natives seem to have benefited from immigration. As also highlighted by previous empirical works focusing on Italy (Romiti, 2011), we interpret this result in terms of complementarity between low-skilled immigrants and high-skilled natives.

To sum up, an increase of the foreign workers in Italy is likely to have a positive impact on local economies. This conclusion is built upon the estimated positive impact of immigration on both the number of establishments and total employees, as well as upon the absence of any displacement effect on native workers. In the light of the widespread fear for the negative impact that increasing immigration flows might have on receiving countries, policy makers should take into account the evidence provided by the present paper when designing the future migration policies.

References

Accetturo A., Bugamelli M. and Lamorgese A. (2012). Welcome to the machine: firms' reaction to low-skilled immigration. Banca d'Italia, Temi di discussione N. 846.

Altonji, J. G. and Card, D. (1991). The effects of immigration on labour market outcomes of less-skilled natives. In Abowd, J. and Freeman, R., editors, Immigration,Trade, and Labour Markets, pages 201–234. Elsevier.

Card, David (2001). Immigrant Inflows, Native Outflows, and the Local Market Impacts of Higher Immigration, Journal of Labour Economics, 19: 22–64.

Catherine A. and Zoltan J. A. (2002). The Determinants of Regional Variation in New Firm Formation. Regional Studies, 36: 33-45.

De Arcangelis G., Di Porto E. and Santoni G. (2015). Immigration and Manufacturing In Italy. Evidence from the 2000s. Economia e Politica Industriale, 42: 163-187.

Barone G. and Mocetti S. (2011). With a little help from abroad: The effect of low-skilled immigration on the female labour supply. Labour Economics, 18: 664-675.

Bettin G., Lo Turco A. and Maggioni D. (2012). A Firm-Level Perspective on Migration. Centro Studi Luca D'Agliano, Development Studies Working Papers N. 328.

Bratti M. and Conti M. (2014). The Effect of (Mostly Unskilled) Immigration on the Innovation of Italian Regions. IZA DP No. 7922.

Brucker H., Fachin S. and Venturini A. (2011). Do foreigners replace native immigrants? A panel cointegration analysis of internal migration in Italy. Economic Modelling, 28: 1078–1089.

Falzoni A.M., Venturini A. and Villosio C. (2011). Skilled and unskilled wage dynamics in Italy in the 1990s: changes in individual characteristics, institutions, trade and technology. International Review of Applied Economics, 25: 441-463.

Gavosto A, Venturini A. and Villosio C. (1999). Do immigrants compete with natives? Labour, 13: 603-622.

Genç M., Gheasi M., Nijkamp P. and Poot J. (2012). The Impact of Immigration on International Trade: A Meta-Analysis, In Nijkamp, P., Poot J. and Sahin, M., editors, Migration Impact Assessment. New Horizons, pages 301–337. Edward Elgar Publishing Limited, Cheltenham, UK.

Kalantaryan S. (2013). Housing market responses to immigration; Evidence from Italy. EUI Working Papers, RSCAS n. 2013/83

Lewis E. and Peri G. (2014). Immigration and the economy of cities and regions. NBER, Working Paper N. 20428.

ISTAT. Struttura e dimensione delle unità locali. (http://www.istat.it/it/archivio/archivio+asia, accessed 27th November 2013).

Massidda C. Etzo I. and Piras R. (2014). Migration and Inbound Tourism: An Italian Perspective. Current Issues in Tourism, **DOI**: 10.1080/13683500.2014.912206.

Mocetti S. and Porello C. (2010). How does immigration affect native internal mobility? New evidence from Italy. Regional Science and Urban Economics, 40: 427-439.

Olney W. (2013). Immigration and firms expansion. Journal of Regional Science, 53: 142–157.

Ottaviano G. I. P. and Peri G. (2012). Rethinking the effect of immigration on wages. Journal of the European Economic Association, 10: 152-197.

Ottaviano G. I. P. and Peri G. (2013). New frontiers of immigration research: Cities and Firms. Journal of Regional Science, 53: 1–7.

Peri G., (2012). Immigration, labour markets, and productivity, Cato Journal, 32: 35-53.

Romiti A. (2011). Immigrants-natives complementarities in production: evidence from Italy. CERP, Working Paper 105.

Romiti A. and Rossi M. (2011). Should we retire earlier in order to look after our parents? The role of immigrants. CERP, Working Paper 124.

Seetaram, N. (2012), Immigration and international inbound tourism: Empirical evidence from Australia. Tourism Management, 33, 1535-1543.

Staffolani S. and Valentini E. (2010). Does Immigration Raise Blue and White Collar Wages of Natives? The Case of Italy. Labour, 24: 295–310.

Venturini A. and Villosio C. (2006). Labour market effects of immigration into Italy: An empirical analysis. International Labour Review, 145: 91–118.

Figure 1. Geographical distribution of working-age foreign born population in levels and growth rates.

(a) (b)

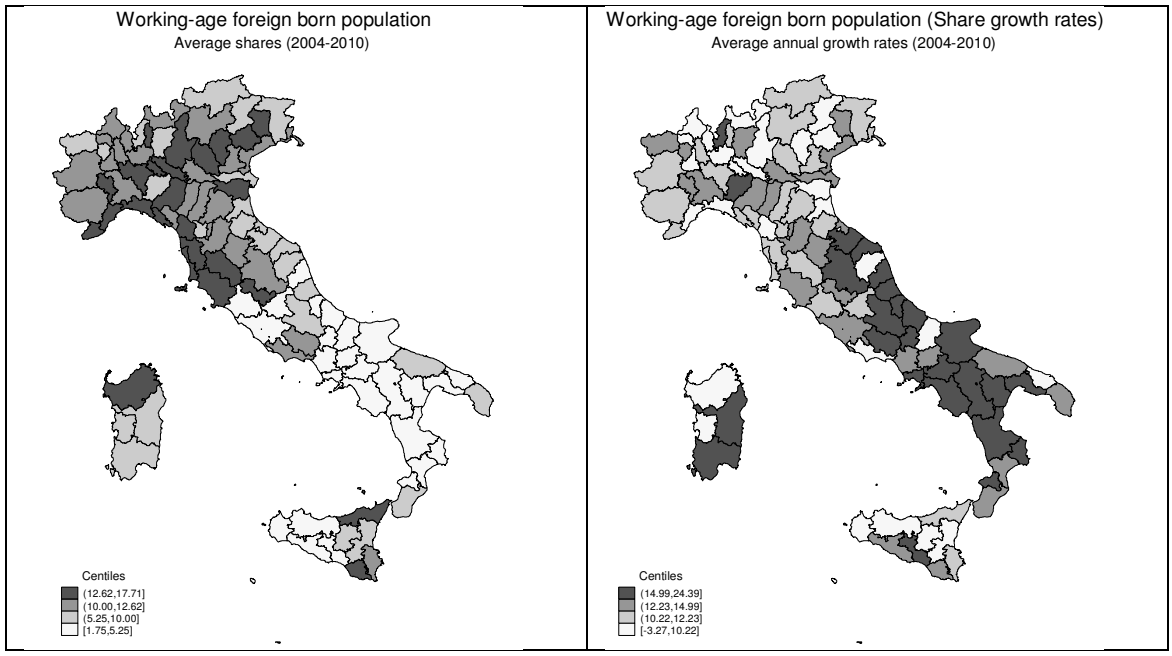
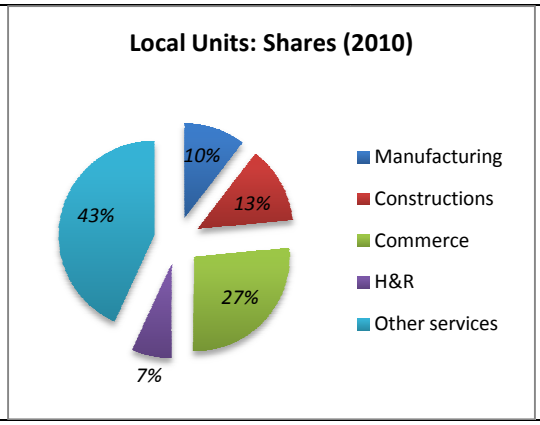


Figure 2. Local Units and employees (shares).

2a



2b

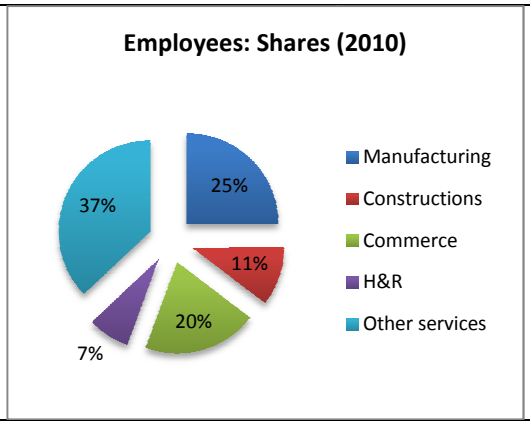
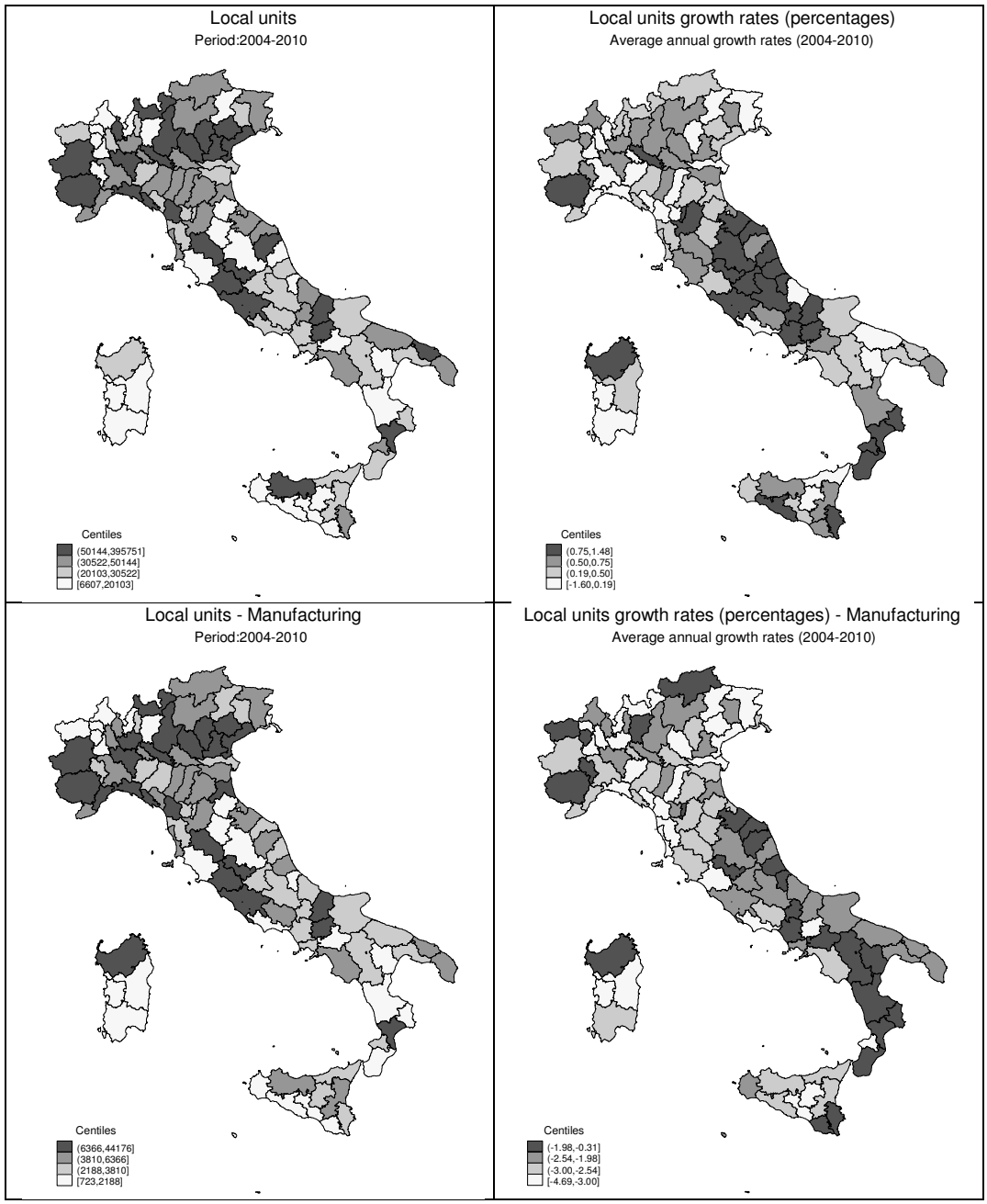
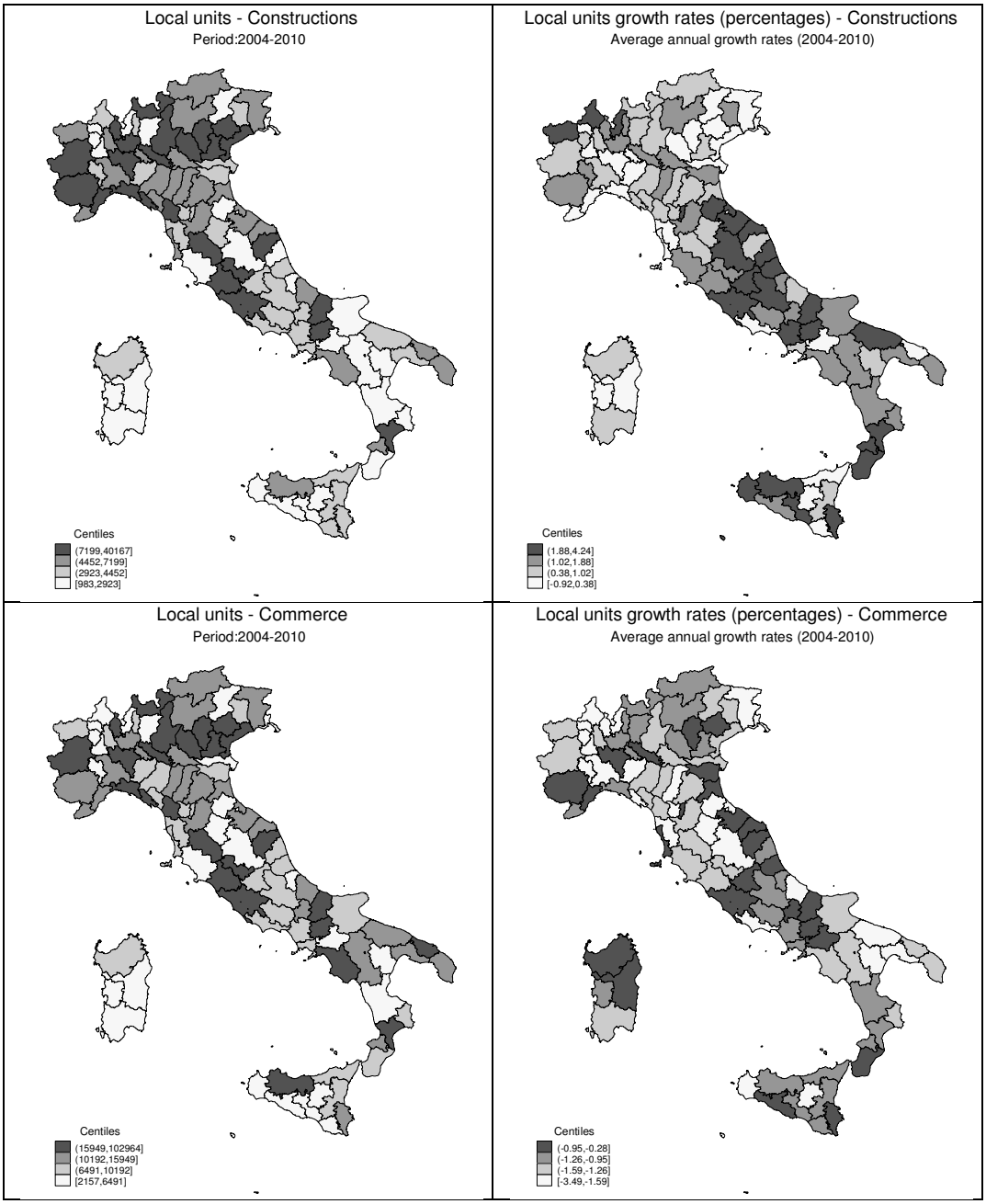


Figure 3. Geographical distribution of Italian local units in levels and growth rates by sector.




Local units - Constructions
Period:2004-2010
Centiles
(7199,40167]
(4452,7199]
(2923,4452]
[983,2923]
Local units growth rates (percentages) - Constructions
Average annual growth rates (2004-2010)
Centiles
(1.88,4.24]
(1.02,1.88]
(0.38,1.02]
[-0.92,0.38]
Local units - Commerce
Period:2004-2010
Centiles
(15949,102964]
(10192,15949]
(6491,10192]
[2157,6491]
Local units growth rates (percentages) - Commerce
Average annual growth rates (2004-2010)
Centiles
(-0.95,-0.28]
(-1.26,-0.95]
(-1.59,-1.26]
[-3.49,-1.59]

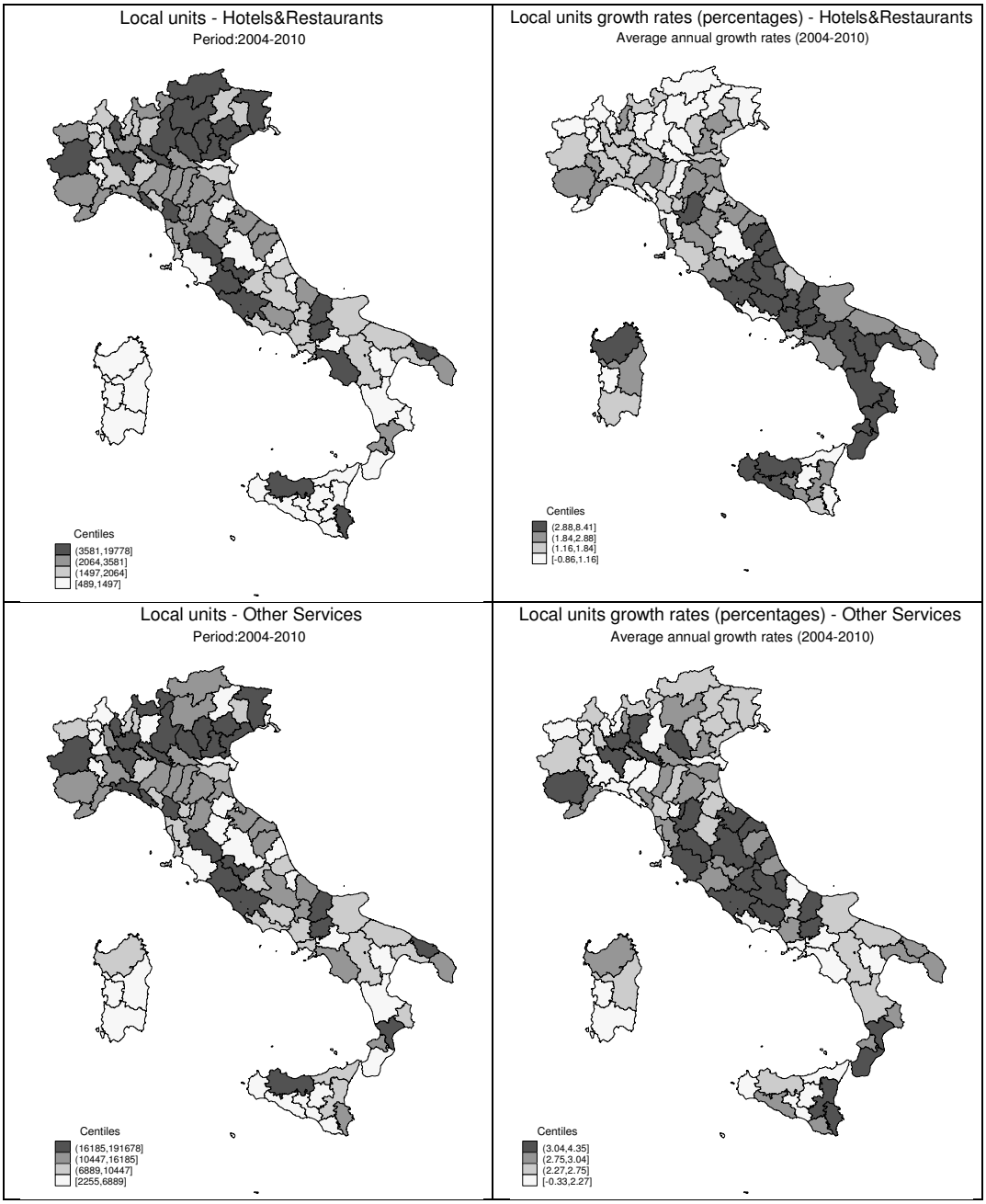

Local units - Hotels&Restaurants
Period:2004-2010
Centiles
(3581,19778]
(2064,3581]
(1497,2064]
[489,1497]
Local units growth rates (percentages) - Hotels&Restaurants
Average annual growth rates (2004-2010)
Centiles
(2.88,8.41]
(1.84,2.88]
(1.16,1.84]
[-0.86,1.16]
Local units - Other Services
Period:2004-2010
Centiles
(16185,191678]
(10447,16185]
(6889,10447]
[2255,6889]
Local units growth rates (percentages) - Other Services
Average annual growth rates (2004-2010)
Centiles
(3.04,4.35]
(2.75,3.04]
(2.27,2.75]
[-0.33,2.27]

Table 1 - Immigrants residing in Italy. First 16 nationalities (31 December 2010).

Nationality	Units	Share	Cumulative Share	Nationality	Units	Share	Cumulative Share
Romania	968.576	21,19	21,19	Tunisia	106.291	2,33	63,80
Albania	482.627	10,56	31,75	Peru	98.603	2,16	65,95
Morocco	452.424	9,90	41,65	Ecuador	91.625	2,00	67,96
Chinese, Pop. Rep.	209.934	4,59	46,25	Egypt	90.365	1,98	69,94
Ukraine	200.734	4,39	50,64	Macedonia, Republic of	89.9	1,97	71,90
Philippines	134.154	2,94	53,57	Bangladesh	82.451	1,80	73,71
Moldova	130.948	2,87	56,44	Sri Lanka	81.094	1,77	75,48
India	121.036	2,65	59,09	Total 16 countries	3.449.715	75,48	
Poland	109.018	2,39	61,47	TOTAL	4.570.317		

Source: own computation based on Istat (Data warehouse: http://stra-dati.istat.it/).

Table 2 – Immigrants (age >15) employed by sectors and geographical area (2010)

	Agriculture		**Industry**				**Services**					
	Tot	**%**	**Manuf.**	**%**	**Constr.**	**%**	**Commerce., H&R**	**%**	**Other Services**	**%**	**Total**	**%**
Italy	84,187	4,0	409,353	19.7	348,705	16.8	356,183	17.1	882,853	42.4	2,081,282	100
North	29,555	2.4	316,505	25.1	198,293	15.8	190,02	15.1	524,428	41.7	1,258,801	100
North-west	14,812	2.1	158,904	22.1	118,351	16.4	100,41	13.9	327,657	45.5	720,133	100
North-east	14,744	2.7	157,601	29.3	79,941	14.8	89,61	16.6	196,771	36.5	538,668	100
Centre	19,358	3.5	71,672	12.8	114,882	20.6	95,965	17.2	256,746	46.0	558,623	100
South	35,274	13.4	21,176	8.0	35,531	13.5	70,199	26.6	101,679	38.5	263,858	100

Source: Istat (Data warehouse: http://dati.istat.it/)

Table 3. Numbers of local units and employees: absolute values (millions)

	Industry				**Services**						**Total**	
	Manufacturing		**Constructions**		**Commerce**		**H&R**		**Other Services**			
	L. U.	**Empl.**	**L. U.**	**Empl.**	**L. U.**	**Empl.**	**L. U.**	**Empl.**	**L. U.**	**Empl.**	**L. U.**	**Empl.**
2004	0.60	4.81	0.60	1.73	1.38	3.32	0.29	1.03	1.82	5.57	4.69	16.46
2005	0.59	4.75	0.62	1.79	1.37	3.38	0.30	1.08	1.88	5.82	4.77	16.81
2006	0.59	4.72	0.64	1.84	1.36	3.44	0.30	1.11	1.93	6.00	4.85	17.11
2007	0.55	4.74	0.67	1.99	1.35	3.53	0.31	1.19	2.00	6.15	4.88	17.59
2008	0.53	4.68	0.68	2.00	1.33	3.56	0.32	1.26	2.05	6.37	4.91	17.88
2009	0.51	4.46	0.66	1.90	1.30	3.52	0.32	1.25	2.06	6.38	4.85	17.51
2010	0.50	4.31	0.63	1.82	1.29	3.50	0.32	1.27	2.08	6.41	4.83	17.31

Table 4. Local units and employees: growth rates

	Industry				Services						Total	
	Manuf.		Constructions		Commerce		H&R		Other Services			
	L.U.	Empl.	L.U.	Empl.	L.U.	Empl.	L.U.	Empl.	L.U.	Empl.	L.U.	Empl.
2004												
2005	-1.33	-1.24	3.83	3.74	-0.86	1.80	3.39	4.31	3.80	4.36	1.74	2.14
2006	-1.05	-0.46	2.62	2.48	-0.25	1.78	1.24	3.17	2.38	3.18	1.16	1.80
2007	-6.26	0.27	5.50	8.11	-1.35	2.47	3.05	7.05	3.65	2.44	1.23	2.75
2008	-2.65	-1.10	0.06	0.96	-1.26	1.03	2.59	5.86	2.35	3.51	0.49	1.64
2009	-5.00	-4.86	-2.63	-5.05	-2.41	-1.26	-0.45	-0.59	0.74	0.27	-1.29	-2.04
2010	-2.01	-3.32	-3.67	-4.57	-0.64	-0.47	1.05	1.26	1.11	0.47	-0.34	-1.17
'04-'10	-17.06	-10.33	5.50	5.13	-6.60	5.42	11.32	22.76	14.83	15.02	3.00	5.13

Table 5. First stage results

	Ln (share of immigrants)
Ln (predicted share of immigrants)	0.054**
	[0.013]
ln (Population density)	0.064
	[0.428]
Growth rate of VA per capita	-0.256*
	[0.152]
ln (Unemployment rate)	-0.132***
	[0.029]
South	-0.672*
	[0.379]
ln (Unemployment rate) × South	0.081*
	[0.045]
Observations	721
Partial R^2 of excluded instrument	0.02
F-test of excluded Instrument, F (1, 609)	15.23

Robust standard errors in brackets. $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. Provincial and year fixed effects included.

Table 6. Number of local units (UL)

	Italy	Centre-North	South
ln (Immigrant share)	0.120***	0.092***	0.174***
	[0.035]	[0.018]	[0.035]
ln (Population density)	0.384***	0.326***	1.044***
	[0.056]	[0.118]	[0.188]
Growth rate of VA per capita	0.023	0.009	0.035
	[0.024]	[0.019]	[0.054]
ln (Unemployment rate)	0.006	-0.002	-0.004
	[0.006]	[0.004]	[0.007]
South	-2.516***		
	[0.054]		
ln (Unemployment rate) × South	-0.012*		
	[0.007]		
Observations	721	469	252
R^2_adj	0.99	0.99	0.99

Robust standard errors in brackets. $***p < 0.01$, $** p < 0.05$, $* p < 0.1$. Constant, provincial and year fixed effects, not shown, are included in all regressions.

Table 7. Number of local units (UL): Manufacturing.

	Italy	Centre-North	South
ln (Immigrant share)	0.177***	0.119***	0.302***
	[0.031]	[0.038]	[0.066]
ln (Population density)	-0.053	-0.177	1.040***
	[0.107]	[0.240]	[0.334]
Growth rate of VA per capita	-0.029	-0.031	-0.068
	[0.034]	[0.043]	[0.069]
ln (Unemployment rate)	0.000	-0.016**	0.005
	[0.009]	[0.008]	[0.011]
South	-2.913***		
	[0.076]		
ln (Unemployment rate) × South	-0.001		
	[0.010]		
Observations	721	469	252
R^2_adj	0.99	0.99	0.99

Robust standard errors in brackets. $***p < 0.01$, $** p < 0.05$, $* p < 0.1$. Constant, provincial and year fixed effects, not shown, are included in all regressions.

Table 8. Number of local units (UL): Services and Hotel & Restaurant

	Services			H&R		
	Italy	Centre-North	South	Italy	Centre-North	South
ln (Immigrant share)	0.100***	0.082***	0.135***	0.103**	0.104***	0.187***
	[0.016]	[0.018]	[0.020]	[0.047]	[0.032]	[0.069]
ln (Population density)	0.619***	0.577***	1.078***	-0.067	0.473**	2.303***
	[0.056]	[0.116]	[0.156]	[0.146]	[0.222]	[0.332]
Growth rate of VA per capita	0.037*	0.020	0.067	-0.006	-0.025	-0.048
	[0.021]	[0.018]	[0.054]	[0.047]	[0.036]	[0.078]
ln (Unemployment rate)	0.011**	0.005	-0.006	-0.008 [0.012]	0.007	-0.027**
	[0.004]	[0.003]	[0.007]		[0.007]	[0.013]
South	-2.310***			-2.192***		
	[0.043]			[0.103]		
ln (Unemployment rate) ×	-0.018***			-0.026		
South	[0.006]			[0.016]		
Observations	721	469	252	721	469	252
R^2_adj	0.99	0.99	0.99	0.99	0.99	0.99

Robust standard errors in brackets. $***p < 0.01$, $** p < 0.05$, $* p < 0.1$. Constant, provincial and year fixed effects, not shown, are included in all regressions.

Table 9. Number of employees

	Italy	Centre-North	South
ln (Immigrant share)	0.176***	0.177***	0.181***
	[0.028]	[0.022]	[0.060]
Growth rate of VA per capita	0.067	0.090	0.31
	[0.034]	[0.035]	[0.068]
Observations	721	469	252
R^2_adj	0.99	0.99	0.99

Robust standard errors in brackets. $***p < 0.01$, $** p < 0.05$, $* p < 0.1$. Constant, provincial and year fixed effects, not shown, are included in all regressions.

Table 10. Number of employees: Manufacturing.

	Italy	Centre-North	South
ln (Immigrant share)	0.108***	0.103***	0.122*
	[0.037]	[0.035]	[0.072]
Growth rate of VA per capita	-0.014	0.011	-0.040
	[0.048]	[0.055]	[0.083]
Observations	721	469	252
R^2_adj	0.99	0.99	0.99

Robust standard errors in brackets. $***p < 0.01$, $** p < 0.05$, $* p < 0.1$. Constant, provincial and year fixed effects, not shown, are included in all regressions.

Table 11. Number of employees: Services and Hotel and Restaurant.

	Services			H&R		
	Italy	Centre-North	South	Italy	Centre-North	South
ln (Immigrant share)	0.239***	0.242***	0.225***	0.282***	0.302***	0.310**
	[0.029]	[0.026]	[0.063]	[0.068]	[0.045]	[0.138]
Growth rate of VA per capita	0.114***	0.142***	0.083	0.089	0.114	0.005
	[0.037]	[0.041]	[0.075]	[0.077]	[0.081]	[0.132]
Observations	721	469	252	721	469	252
R^2_adj	0.99	0.99	0.99	0.99	0.99	0.99

Robust standard errors in brackets. $***p < 0.01$, $** p < 0.05$, $* p < 0.1$. Constant, provincial and year fixed effects, not shown, are included in all regressions.

Table 12. Natives employees.

	All	Natives (All)	Natives (Low skill)	Natives (High skill)
ln (Immigrant share)	0.560***	0.067	0.188	0.819**
	[0.146]	[0.164]	[0.494]	[0.295]
Growth rate of VA per capita	0.003	0.004	0.003	0.014
	[0.002]	[0.003]	[0.003]	[0.011]
Observations	456	456	456	456
R^2_adj	0.95	0.94	0.93	0.95