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What happens to students with an immigrant background in the transition to higher education? Evidence from Italy

Sergio Paba* and Rita Bertozzi**

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Abstract. *As shown by the international literature on educational attainment, in most European countries participation rates of students with a migrant background are usually lower compared to natives, particularly in tertiary education. In Italy, the focus of the debate is mainly on secondary school, while little or no attention has been paid to immigrant students attending universities. This paper tries to fill the gap by providing new and extensive empirical evidence on this phenomenon and by discussing some of the main issues related to it. The results show that, first, ethnic background matters. East European and Russian students are more likely to continue their studies, as found in other European countries. Second and contrary to what is expected on the basis of the existing Italian literature, the specific secondary school track is not important for the transition choice. However, while this is true for immigrant students, it does not hold for the native population. For Italian secondary school graduates, the attainment of a liceo diploma increases the probability of enrolling in tertiary education. Third, local labour markets affect the incentive to invest in human capital. High youth unemployment rates have a negative impact on educational attainment for both immigrant and native students. Lastly, the average education level of the local immigrant population has a positive influence on transition choice.*

JEL classification: I21, J15, J24

Keywords: *immigrant students; higher education; inequalities; transition rates; local contexts*

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1. Introduction

There is a vast and growing international literature on the educational attainment and school performance of students with an immigrant background. In most European countries, these students are disadvantaged in the educational system. Participation rates are usually lower compared to natives, particularly in tertiary education.

In Italy, the focus of the debate is mainly on secondary school, while little or no attention has been paid to immigrant students attending universities. In addition, no systematic data on the transition to tertiary education of immigrant students is readily available at national level. This paper tries to fill the gap by providing new and extensive empirical evidence on this phenomenon and by discussing some of the main issues related to it.

We will try to answer a number of research questions: What are the main differences in the transition process between immigrant and native students? Does the specific immigrant background play a role? To what extent does the previous choice of an academic or vocational school affect the access of immigrant students to university? Does the local socio-economic environment matter?

In order to answer these questions, in the first part of the paper we start by reviewing the main findings of the international literature on the transition to higher education of immigrant students. These findings point to the effects of individual and family-related factors as well as macro-contextual factors on transition choices. We also review the contributions of some Italian studies on the transition of immigrant students from lower to upper secondary school and on their academic skills and performance.

Building on this research, in the second part of the paper we present the empirical evidence. The main section provides a description of our empirical strategy, whose aim is to identify the factors affecting the transition choice, and a discussion of the main findings. The analysis is based on a set of data collected at the level of the province. The main source is a new and detailed database provided by the Ministry of Education (MIUR). It includes information on upper secondary school graduates in 2013, according to citizenship and type of school. Data on newly enrolled students in tertiary education is also provided by MIUR. All this information is supplemented with data, provided by ISTAT, on the economic and social characteristics of the provinces.

2. An overview of the international debate

The transition to higher education of students with an immigrant background is the subject of an extensive and growing European literature. Unfortunately, Italy is excluded from many comparative studies due to the lack of nation-wide longitudinal data. The clearest finding of this research is the persistence of inequalities in school performance and level of educational attainment of immigrant students as compared with their native peers. These gaps are attributed to migrant background as well as to other factors, including social status and aspirations, parents' level of education, economic resources, and nature of educational systems. By reviewing this international literature, two main strands of research can be identified. The first examines the inequalities between immigrant students and their native peers by focusing on the effects of individual and family-related factors, after controlling for the organizational characteristics of the national educational systems. The second focuses primarily on macro-contextual factors.

In the first strand, the main factors considered are social background, language, educational aspirations, legal status and gender (Griga 2013). Social background and educational choices are particularly important. Based on rational-choice approaches, these research studies explain educational inequalities by extending to immigrant students the distinction made by Boudon (1974) between primary effects and secondary effects of social backgrounds. Accordingly, they take into account the student's entire school trajectory by distinguishing between inequality of outcomes attained during compulsory schooling (primary effects) and inequality of choices in the transition to post-compulsory and university education (secondary effects) (Heath & Brinbaum 2007; Griga 2013, 2014; Griga & Hadjar 2014). Secondary effects are mainly due to the choices made by students and their families after assessing costs, benefits, and likelihood of success associated with a given educational choice.

As shown by a number of European studies (Rothon 2007; Kristen & Granato 2007; Griga & Hadjar 2014), in some cases, immigrant students actually experience higher transition rates to tertiary education (secondary effects) compared to their native peers, even if during secondary school their outcomes were lower (primary effects of ethnic origins, due for example to low proficiency in the official language, less parental support, etc.) (Heath *et al.* 2008; Griga 2013). This can be explained by higher educational expectations, greater value attributed to HE diplomas by parents, choices based on the perception of education as providing an alternative to unemployment or on the expectation of greater discrimination in the workplace (Griga 2014). There are also possible effects associated with the link between gender and specific migrant backgrounds, and a further effect related to the influence of migrant background on the choice of specific fields of study, with a preference for medicine, law and business due to the prestige of these subjects in their countries of origin.

However, the secondary effects of a migrant background are not consistently positive, but vary between different immigrant groups according to socio-economic status, gender or area of residence (Griga 2014). The socio-economic variable accounts for at least half of the gap between native and immigrant students but it only partially explains educational disadvantage. Even after controlling for social background¹, there is a remaining gap, which can be explained by looking at the other factors mentioned above.

School outcomes and levels of education attained also differ according to countries of origin and ethnicity. The review carried out by Heath *et al.* (2008) shows that students of non-European migrant descent tend to have lower attainment and qualifications than their native peers, while the children of European migrants achieve better outcomes and qualifications than do majority groups but still lag behind them. However, there are some exceptions, like second-generation Indians in Norway and Great Britain or Chinese students in Britain who attain better results and qualifications than the majority population.

Similar results are obtained by Singh (2011), who found relatively high participation rates in HE for African, African-Asian, Chinese and Indian students in the UK compared to their Bangladeshi and Pakistani peers. In the same vein, research on widening participation found higher transition rates to HE for immigrant students

¹ Measuring the social background of migrant parents raises specific problems because immigrant parents often hold low-skilled jobs, which may not be indicative of the family's available educational resources, particularly for parents who have high educational qualifications or come from middle class backgrounds in their countries of origin (Heath *et al.* 2008).

compared to native students, but ethnic background matters: Black Caribbean and Bangladeshi students tend to be concentrated in low status institutions, in contrast to Chinese, Other Asian and Mixed Ethnicity students.

Other studies analyse the effects of individual, family and ethnic factors on transition to university by looking at the different degrees of stratification found in secondary school systems and the existence of alternative methods of entry to HE (Griga 2013, Griga & Hadjar 2014). The cases examined show that inequalities are lower in countries with a low-stratified school system, which provide alternative methods of entry to university.

The second strand of the literature analyses the inequalities between immigrant students and their native peers by focusing primarily on macro-contextual factors. Using comparative integration context theory (Crul & Schneider 2010; Crul *et al.* 2012a), these studies combine two approaches: they investigate the effects on integration outcomes of the different ways in which local and national education systems are organized, and consider the agency of individuals and groups in relation to different resources and structural conditions.

Taking into account the student's entire school trajectory, the key selection points are interpreted from a process-based perspective, linking transition outcomes to various institutional factors, such as age of entry into pre-school, number of contact hours, age of choice of secondary school, permeability across school tracks, methods of transition to university, and available family resources. Based on cross-national comparisons of the educational trajectories of second-generation students, these studies shed light on the different impact of institutional policies on integration processes.

A major study in this respect is the international standardised research programme known as TIES², conducted in eight European countries (Crul 2012). Through this survey, the authors demonstrate that the educational opportunities and school outcomes of second-generation students from the same group of origin vary considerably across countries but also across cities in the same country. The main focus of the study is the effect on school careers of the institutional arrangements of different school systems. Second-generation Turkish students provide an interesting example. For this population, the most favourable context is one in which children start attending preschool at a young age, selection only takes place at the age of 15, and the secondary school track does not preclude access to university (permeable systems). In this context, inadequate family resources do not prevent progress in schooling. From this perspective, Germany's rigid tracking system provides a negative example: even the most brilliant students are unlikely to have access to university if their parents have inadequate resources and a low level of education (Crul 2012; 2013).

The institutional factors considered thus include the degree of permeability of the school system, i.e. the extent to which students attending secondary school have the opportunity to change from a vocational to an academic track and vice-versa, and the method of transition to HE, i.e. whether it is automatic or the result of a specific choice. While academic tracks in secondary school usually lead students to go on to university, students with an academic diploma don't always continue their studies and, vice-versa,

² The European TIES project, conducted during the period 2006-2008, surveyed 15 cities across eight European countries, interviewing 6,145 second-generation youth and 3,626 children of native-born parents, with a total of 9,771 respondents aged between 18 and 35. The survey involved a detailed study of the respondents' entire educational career, using various different methodologies.

students enrolled in university don't always have an academic diploma. Both aspects play an important role for students with a migrant background, with significant differences across national contexts. For example, while in France and the Netherlands second generation students with an academic diploma almost invariably go on to university (albeit to less prestigious universities), in Belgium and Sweden transition is not automatic. In Belgium, for example, 34% of Turkish students with an academic high school diploma decide not to progress to university education compared to 15% of their native peers in the same situation (Crul 2013).

Other comparative surveys focus on the institutional pathways to HE for students with an immigrant background. As part of the PATH³ project, Murdoch *et al.* (2014; 2016) compare the transition pathways from secondary school to university of students of North African descent living in France and migrant students from Turkey and former Yugoslavia living in Switzerland. The findings show that in both contexts, students with a migrant background from the Maghreb, former Yugoslavia and Turkey are less likely to enter university with an academic secondary school diploma. However, this result is not attributable to their immigrant backgrounds but to their previous school performances, early streaming, and the socio-economic capital of their parents. When these students' educational characteristics are similar to those of their native peers, their likelihood of obtaining a diploma and progressing to university is the same. This leads the authors of the study to conclude that the main factors of inequality between students with immigrant backgrounds and their native peers with regards to access to university are created during primary and secondary school rather than during the transition from secondary school to university. In subsequent studies focusing on France, Switzerland and Germany, the authors also show the benefits to second generation students of having the opportunity to enter university with vocational diplomas insofar as these offer a "second chance" to many children of immigrant parents (Murdoch *et al.* 2016).

Lastly, cross-national differences have also been found relating to the power of individual choices and aspirations to offset structural barriers to entry in HE. In a comparison between Switzerland and Canada, Picot and Hou (2013) note that in Switzerland continuation rates of students with immigrant background are lower than those of non-immigrant students, while in Canada they are higher. In Switzerland, the negative gap is explained by lower school performances and enrolment in the lower academic streams of secondary school, while in Canada the positive gap is explained by the fact that personal and family aspirations have a stronger impact on decisions to continue to study than do attained outcomes.

Literature review: the case of Italy

Turning to the Italian context, hardly any attention has been devoted in the literature to the specific issues of access of immigrant students to tertiary education and of their academic performance. One notable exception is a pioneering research study conducted by Lagomarsino and Ravecca (2014), based on a set of interviews with a sample of immigrant students from the University of Genova.

³ The PATH - "Pathways, Aspirations, Tracking and access to Higher education" - project analyses access to university of a group of students with a migration background in Switzerland, France and Canada (2013-2016). It is based on statistical analysis of panel data: DEPP in France, TREE in Switzerland and YITS in Canada.

Most of the research has focused on the transition to tertiary education of all secondary school leavers, with no reference to students with an immigrant background. One of the most important findings of this literature is the importance of the specific secondary school track for access to university. The Italian education system is based on a non-selective principle whereby the school track chosen at the age of 14 is not restrictive in terms of providing access to university after five years of secondary education⁴. Nevertheless, while there is no formal hierarchical ranking of the different school tracks, the possession of an academic (*liceo*) diploma, rather than a technical or vocational one, increases the chances of continuing into higher education and of attaining a better job position in the future (Barone 2013; Ressa & Azzolini 2014).

Comparative studies also show that in Italy –to a greater extent than in other European countries– the secondary effects related to the social and cultural background play a major role in explaining the strong inequalities in educational attainment, after controlling for the primary effects (Ressa & Azzolini 2014). Students from disadvantaged families are less likely to pursue university education even when they have the abilities and the skills that would enable them to progress successfully (Barone 2013). Other studies show that, due to information biases, students with low socio-economic status tend to overestimate university costs and are more averse to the risks associated with a long-term investment in education (Abbiati & Barone 2014; Cataldi & Pitzalis 2014).

In addition to these findings, valuable insights on the transition choices and academic achievements of immigrant students come from a number of studies whose main focus is on secondary school (see also Santagati 2015). Barban and White (2011) study the transition from lower to upper secondary school by using individual data from a nation-wide survey (ITAGEN2). They find that immigrant status negatively affects the probability of enrolling in technical schools and especially in academic schools (*licei*), after controlling for lower secondary level outcomes and family characteristics. As a consequence, immigrants tend to be overrepresented in vocational schools compared to natives. This effect is strong for foreign-born immigrants and particularly pronounced for recent immigrants, while for second-generation immigrants it is not statistically significant. The country of origin of immigrant students (citizenship) seems not to play any relevant role in the transition choice.

With a different approach and using geographical data at the provincial level, Bertolini *et al.* (2015) consider the role of external, socio-economic factors in affecting the choice of school track for both native and immigrant populations. Enrolment rates differ between the two groups, with lower rates on average for immigrants. Compared to natives, immigrants choose more frequently the vocational track and less frequently the academic schools (*licei*). The authors find some evidence of a positive impact of family income and women employment rates on enrolment of immigrants in the academic track at provincial level. General and unexplained regional factors prove to be important, favouring the enrolments of immigrants living in Central Italy, notably in the regions of Liguria and Emilia-Romagna, particularly in the choice of vocational schools.

⁴ There are three types of upper secondary schools in Italy: *licei*, technical schools, and professional institutes, each divided into further specialist areas. The three school tracks differ in terms of the nature of the education they provide. The education received in a *liceo* is essentially broad-based and theoretical-academic, in the fields of the arts, the humanities, science and art education. Technical institutes offer a theory-based education combined with technical qualifications in a specific field. Professional schools are essentially vocational and offer practical, job-oriented education designed to facilitate direct entry into the labour market.

By using PISA scores as a dependent variable, Murat (2012) finds significant negative differences between the scores of immigrants and natives in Italy, after controlling for student characteristics and family background. Scores are strongly related to the type of secondary school attended by students. Immigrant students in technical and vocational schools perform substantially worse than their peers in academic schools.

These findings are confirmed by Schnell and Azzolini (2015), who provide an additional explanation for the gap between immigrant and non-immigrant youths in academic achievements, measured by PISA scores. After a number of controls including school track, they find that the gap is related to the lack of economic and material resources, probably due to parents' lower occupational status. Interestingly, parental education, a factor usually emphasized in the empirical literature focussing on Central and Northern European countries, does not seem to contribute to explaining the gaps. This may be due to the fact that in Italy, as in other Southern European countries with more recent immigration, the level of educational attainment of immigrants is similar to that of the native population.

The results obtained in these studies have clear implications for the transition from secondary school to higher education. First, low performance and academic achievements can discourage immigrant secondary school graduates from enrolling in tertiary education due to a high probability of failure and dropping out. Second, the overrepresentation of immigrants in technical and vocational schools tend to favour an early and easy access to the labour market instead of further study. Third, due to the low socio-economic status of immigrant families, the high cost of university studies can preclude access to university for most immigrant students. All these factors can exacerbate the gaps in educational attainment and social mobility between immigrants and natives.

Building on existing research and with the help of new data, the next part of the paper tries to highlight the main factors affecting the transition choice from secondary school to tertiary education for both immigrants and natives. The aim is to provide an answer to a number of research questions so far little addressed by the literature. What happens to students with immigrant background in the transition from secondary school to higher education in Italy? What are the main differences in relation to native students? To what extent does their previous choice of an academic or vocational school affect their access to university? What is the impact of the specific immigrant background on access to higher education? Does the local socio-economic context matter?

3. Data sources and descriptive statistics

Unfortunately, individual and longitudinal data for the whole country is not available for students in higher education. Following Bertolini *et al.* (2015), we rely on a cross-section of macro-geographical data collected at the provincial level. The analysis is performed at the national level, with the province as the territorial unit of reference, which corresponds to NUTS-3 in Eurostat classification. We exploit the territorial variability in transition rates among Italian provinces to analyse the factors that might affect the transition choice of students with an immigrant background. We are aware that this method of analysis can only bring forth indirect answers regarding individual choices and behaviour, but it can nonetheless provide useful insights on the role of external factors in affecting the transition choice of immigrant students.

With regards to the upper secondary school system, the main data source is a new and detailed database provided by the Ministry of Education (MIUR). For the first time, data is available for the 102 Italian provinces, corresponding to the 1992 official classification⁵. The dataset provides information on secondary school graduates in 2012/2013 classified according to citizenship and type of school.

Data on enrolments in tertiary education is collected from an extensive MIUR database (*Anagrafe degli studenti*). It refers to the academic year 2013/14 and only includes students newly enrolled for a bachelor degree (*laurea*) or a single-cycle master degree (*laurea magistrale a ciclo unico*), holding a secondary school diploma (*diploma di maturità*) gained at the end of the academic year 2012/2013. This restriction is necessary in order to integrate the two databases and limit the information to the same cohort, namely the graduates who left secondary school in July 2013 who decided to enrol in tertiary education for the academic year 2013/2014 soon after obtaining their diploma.

In order to investigate the relation between transition choice and socio-economic context, all the above information is supplemented with data on the economic and social characteristics of the provinces, mainly provided by the Italian National Institute of Statistics (ISTAT). The focus is on immigration rates and demographic data, economic and labour market variables (unemployment and youth unemployment rates). Policies developed by local governments can improve the integration of immigrants in the local community and have an impact on the participation rates of young immigrants in the school and university system. Based on a set of statistical indicators, a recent study by CNEL and the Ministry of Labour and Welfare (2013) provides a synthetic index of the social integration of immigrants that will be used in the analysis.

Descriptive statistics

In the academic year 2012/2013, the number of upper secondary school (USS) graduates with foreign citizenship was slightly more than 19,000, amounting to 4.3% of the total number (Table 1). 40% of them came from just three countries, Romania, Albania and Morocco. Italian graduates were around 427,000. Only a quarter of graduates with an immigrant background have a *liceo* diploma, compared to 50% of Italian graduates. Conversely, immigrants are overrepresented compared to Italians in technical schools (41.6% of graduates vs. 34.6%) and professional schools (33.8% vs. 15.5%).

[TABLE 1]

Figure 1 gives a clear idea of the different school tracks chosen by the two populations at the provincial level. Two indexes are shown. INDEX-LYC is the ratio between two shares: the share of immigrant students with a *liceo* diploma over total immigrant graduates, and the share of Italian students with a *liceo* diploma over total Italian graduates. INDEX-VOC provides the same information but with reference to graduates with a professional diploma. When the value of the index is equal to one, the two graduate populations have the same share with the same diploma and are equally represented in the specific school track. When the index is less than one, immigrants have a lower share and are underrepresented compared to Italians, and the opposite is

⁵ Data for Bolzano are missing.

true when the index is greater than one. Looking at the Figure, the share of immigrant graduates with a professional diploma is on average almost double the share of Italians with the same diploma (1.99). The opposite is true for the *liceo* graduates. In this case, the share of immigrants is on average less than half compared to Italians (0.44). Graduates with a technical diploma are equally represented in their respective populations. In this case, the mean value of the index (not reported in the Figure) is 1.17.

[FIGURE 1]

The *gross graduation rate* gives an idea of the education gap in participation at the level of secondary school between the two populations. The index is the ratio of the total number of graduates, regardless of age, to the population of the age group that officially corresponds to the time of graduation in the final year of secondary school, 19 in the case of Italy. In 2013, the value of the index was on average 40.7% for immigrants and 83.8% for natives, which had more than double.

The immigrant group contains both a larger number of repeaters than Italians and a higher proportion of students enrolled at a lower grade in relation to their age. According to MIUR data, the number of immigrant students enrolled in secondary school in 2012/2013 at a grade below that which is expected at their age was very high, 67.1% of the total compared to 23.9% for Italians (MIUR-ISMU 2014). The failure rate (grade repeaters) was on average equal to 27% for immigrants compared to 12.7% for Italians (MIUR-ISMU 2014, 73). This implies that the mean age of the immigrant school leavers at the end of the fifth and final year of school was higher than the expected 19. In 2012/2013, 71% of immigrant students enrolled in the fifth year were actually older than 19 (MIUR 2013, 19-20). However, there is no noticeable change in the gap if we substitute the denominator of the index for the two populations with the 19-21 age group.

Table 1 shows the data on transition rates to tertiary education by type of secondary school diploma and citizenship. At national level, the transition rates of the two groups differ substantially, with 0.28 vs. 0.50 in favour of natives. Immigrant students are clearly lagging behind. However, it must be considered that Italy is a relatively new immigration country. As a consequence, the great majority of immigrant students enrolled in secondary school are still made up of first-generation youths born in a foreign country. In 2012/2013, only 9.1% of the foreign students enrolled in the final year were second-generation immigrants born in Italy (MIUR-ISMU 2014, 25). This probably affected the transition choice and explains part of the current gap at national level. The situation may change in the future, as the increasing population of second-generation immigrants, already more numerous in primary school, will progress in schooling. As the international literature has widely stressed, second-generation immigrants tend to behave like natives.

Transition rates differ greatly according to citizenship. For students from East-European countries, like Romania and Albania, transition rates are well above the average. (0.34 and 0.37 respectively compared to the average of 27.9). The same is true for immigrants from Peru (0.38) and China (0.36). Conversely, transition rates are very low for Moroccan students (0.16) and for immigrants from Macedonia (0.16) and the Philippines (0.19).

The type of secondary school attended is a crucial factor affecting enrolment choice in higher education for both natives and immigrant graduates. From this point of view,

the decision to progress towards higher education is in fact made by families and students well in advance, when they decide in which type of school track to enrol, just after leaving lower secondary education. In the Italian system, enrolling in a *liceo* is a natural choice if one wants to go on to further university education. In principle, all upper secondary schools can give access to university, but in reality the *liceo* provides the best educational background to succeed in higher education. This explains why, in the case of Italians, 75.9% of new university students hold a *liceo* diploma (Table 1).

The picture is quite different for immigrant students. When they enrol at university, only 46.6% of them hold a *liceo* diploma. For some citizenships, the percentage of students holding a *liceo* diploma is particularly low. This is the case of North African countries and Turkey, but also of Peru and China, even if the latter shows above average transition rates. The majority attended a technical (39.3%) or a professional school (14.1%). However, this does not mean that immigrant students with a technical or a vocational diploma show a higher propensity to enter further education compared to natives. Transition rates by diploma are actually similar for the two groups, even higher than for Italians (0.29 vs. 0.27 and 0.13 vs. 0.12 respectively, Table 1). The point is that many immigrant graduates with a *liceo* diploma don't enrol at university, presumably preferring –or being forced– to enter directly into the labour market in search for a job. This is clear by comparing the transition rates for the groups: 0.76 vs. 0.52. What is the explanation for this unexpected difference of behaviour? Why is this only true for immigrant students with a *liceo* diploma? The low socio-economic status of the immigrant families can provide an initial explanation for this phenomenon. The *liceo* is a typical choice for the children of Italian well-off families, even when their previous performance and academic achievements should suggest a different and easier school track. In any case, these families have enough material and economic resources to afford further education. On the contrary, most immigrant families have few available resources to support university studies, even when their children achieve good results. Early entry in the labour market is the only choice after graduation. Limited information about the career prospects offered by different secondary school tracks, at the time of the transition from lower to upper secondary school, can also contribute to this outcome. Lastly, immigrant *liceo* graduates may have more opportunities to find a job because their human capital can be considered of a better quality by potential employers, compared to their peers with a technical or vocational education. Given the opportunity cost of tertiary education, it might be more convenient to enter the labour market instead of further education.

4. Empirical strategy and findings

The choice to enrol at university depends on many factors, individual and external. Personal preferences and aspirations, family background in terms of income, social status and education, length of settlement in the country and age of entry in school, prior education track, and cultural traits related to ethnicity, are all factors extensively discussed in the international literature reviewed above.

All these factors interact with the local socio-economic environment. Labour market variables, such as the rate of unemployment, can affect the incentive to further invest in human capital. GDP growth and the structural characteristics of the local economy can affect the demand for high-skilled labour. Social policies and measures carried out by local governments can facilitate the integration of immigrant communities and encourage educational attainment. Size, human capital and ethnic composition of the

immigration flows can have an impact on the acceptance of immigrants by the local population and cause segregation, which has a negative effect on schooling. Lastly, policy choices developed by academic institutions can have a strong impact on transition to tertiary education. Some examples are the cost of university studies, the activity of curriculum counselling carried out by universities and secondary school institutes, and other policies aimed at widening the participation of immigrant or disadvantaged students.

By studying the transition to tertiary education with the help of provincial data, it is possible to capture some of the above effects. To this end, in this section we present a set of simple OLS multivariate regression models in which all the variables are taken at the territorial unit of reference, the province. The dependent variable is the transition rate of immigrant graduates, TRANSFOR, the ratio between the newly enrolled immigrant students in tertiary education in the academic year 2013/2014 over the total number of immigrant secondary school graduates in the school year 2012/2013.

Different specifications of the regression equation are presented. The models differ in the sets of explanatory variables and controls included in the estimate. We add in turn each set of variables until we get the full specification. As a tool for comparison, a model of transition choice for Italian graduates is also presented.

Table 2 summarizes the mean values and standard deviations of all the variables used in the analysis. The number of immigrant students in secondary school varies greatly across provinces, depending on immigration rates. In order to obtain reliable estimates in the empirical analysis, the provinces with an absolute number of immigrant graduates in 2013 lower than 30 were excluded from the dataset. As a result of this restriction, the number of provinces considered is 91.

[TABLE 2]

Figure 2 shows the transition rates of both immigrant and native students, the two dependent variables, for the 91 provinces under consideration. As expected, there are substantial differences between the two groups. On average, only 26.6% of secondary school graduates with an immigrant background enrol at university, compared to 50.6% of natives. Lower transition rates for both immigrants and natives characterize some Southern Italian provinces, particularly in the two islands of Sicily and Sardinia. In these areas, the gap between the two groups also seems to be larger compared to other regions of the country. More generally, the data shows a high variability.

[FIGURE 2]

Table 3 shows the estimates of the different linear regression models. In Model 1 the first set of explanatory variables relates to the citizenship and ethnic background of secondary school graduates. The aim is to assess the impact of the specific immigrant background on the transition to tertiary education. The importance of this factor has often been underlined by the literature on immigrant integration. Four groups of countries are identified: East European countries and Russia (EURS), Asian countries (ASIA, China, India and Bangladesh), Latin America and the Philippines (LATP), where the Catholic religion is prevalent, and the Muslim area of North Africa and Turkey (NAFT).

Ethnicity may affect the transition choice for a number of reasons. Cultural perceptions about the relevance of educational attainment in the country of residence,

explicit and subtle forms of discrimination, which may affect the expectation of social integration and mobility, and the socio-economic conditions of the specific migrant community, are some of the factors emphasized in the literature. The results strongly indicate that students from East European countries and Russia are more likely to progress to tertiary education after leaving secondary school. The coefficient is statistically significant at the 1% level and the variable proves to be robust even after the introduction of all the controls in the general regression model.

To some extent, this also seems to be true for immigrants from Latin American countries and the Philippines. The coefficient is always positive and statistically significant in Model 2 and 5. Although distant from a geographical point of view, these countries share the same Catholic tradition as Italy, a factor that may reduce the cultural distance and favour integration. The coefficient is also consistently positive in the case of students of Asian origin, but it is never significant. No significant effect is noticeable for students from Morocco and other Muslim countries, but the sign is always negative.

The only control variable added in this model is the rate of transition to tertiary education of Italian secondary school graduates (TRANSITA). To some extent, the behaviour of native and immigrant populations is similar and reacts to common factors. The transition rates (TRANSFOR and TRANSITA) of the two groups of graduates across provinces are positively correlated (0.415, $p < 0.000$). TRANSIT is a control variable, which tries to capture this relation. Its coefficient in the regression is positive and statistically significant, but it explains only a small part of the total variation of the dependent variable (by regressing only TRANSIT on the dependent variable, the coefficient is positive and significant at 1% but the adjusted R^2 is 0.163).

[TABLE 3]

In Model 2, we add in the regression a group of variables to control for the secondary school characteristics, whose importance for the future prospects of students has been greatly emphasized in the literature. The aim, in particular, is to test the impact of the specific school track on the transition to tertiary education of both immigrants and natives.

As shown above, immigrant students tend to be more represented in technical and vocational schools and less in the *licei*, compared to Italians. This might adversely affect the probability of enrolling in higher education or, once enrolled, the probability of dropping out after one year. LYCFOR is the share of immigrant graduates with a *liceo* diploma and VOCFOR is the share with a professional diploma. However, in the regression none of these variables prove to be significant. In particular, the percentage of immigrant students holding a *liceo* diploma is not a predictor of transition to higher education. As seen above in the descriptive part of the paper, a likely explanation is the unexpectedly low transition rates of *liceo* graduates. By contrast, in the case of Italian graduates the share of secondary school leavers with a *liceo* diploma has a positive impact on transition rates, as expected, although the coefficient has a statistical significance of only 10%.

Transition rates can also be affected by the average performance and academic achievement of students. Students with greater difficulties in learning should have a lower propensity to enrol in higher education. The variable REPEATFOR measures the grade retention rate at the provincial level, i.e. the share of immigrant students enrolled in secondary education who failed at the end of the year and had to repeat the grade. However, in the regression, the coefficient of this variable is always not statistically

significant. On the contrary, the same index for Italian students (REPEATITA) in Model 8 shows a negative and significant coefficient, as expected, after controlling for all the variables. This result suggests an interesting difference in behaviour between the two populations. Italian students are less likely to continue their studies if they have obtained poor results in secondary school. In contrast, under the same conditions, immigrant students driven by higher social mobility ambitions or fewer job opportunities, perhaps combined with limited information, may decide to enrol in university, other things being equal. A similar phenomenon has been found in other European studies.

A clear finding of the international literature is the difference in performance and educational attainment between first- and second-generation immigrants. In particular, second-generation immigrants tend to behave like natives, reducing the gap between the two populations. To control for this effect on transition rates, the variable SECGEN is added in the specification. This variable measures the share of second-generation immigrants on total immigrant students enrolled in secondary education at provincial level. According to the theory, SECGEN should affect positively the transition to tertiary education. However, after controlling for other factors, the coefficient actually has a negative sign and, above all, it is not significant. This does not mean that to be born and to have grown up in Italy does not matter. In Italy, the number of second-generation graduates is probably still too low to affect the general transition rate at the provincial level.

The gross graduation rate seems to have a strong and negative effect on the transition choice, for both Italian (GGR19ITA) and immigrant (GGR19FOR) students, although in the latter case the statistical significance is somewhat reduced once we control for all the other variables in the full regression model (Model 7). A likely explanation for this result has to do with the supply of secondary education at provincial level. The number of students and, as a consequence, graduates in secondary education depends in part on the supply of schools in provinces related to potential demand, as shown by Bertolini et al. (2015). Typically, this indicator is related to the supply of technical and professional schools, where the transition rates are lowest. More graduates, a positive indicator in terms of social integration and educational attainment, do not mean higher transition rates.

Size and human capital of immigrant population at local level can affect transition rates. Size, measured by the immigration rate, always has a negative sign but is statistically significant only in Model 5. Foreign population is concentrated in the most developed regions of the country where labour demand is high and where young immigrants have more opportunity of finding a job after leaving secondary school. By contrast, human capital, measured by the percentage of immigrants who hold a secondary school diploma or a university degree, has a positive and significant effect on transition rates, as expected. Educated families tend to invest more in education for their children, a well known finding in the literature.

The rate of youth unemployment (YOUTHUNE) tries to capture the economic environment at the level of the province and its effect on the transition choice. This variable is highly (negatively) correlated with the GDP per capita and the general unemployment rate (positively). Good prospects in the labour market can encourage students to invest in education in order to exploit the possibility of finding a better and more qualified job. As expected, youth unemployment has a negative and significant effect at the 5% level on the decision to enrol in tertiary education, even after the introduction of all the variables in Model 7. The same is true for Italian students, as

shown in Model 8, and the impact is even stronger, given the size of the coefficient and the significance level at 1% .

The cost of tertiary education and the size of the university at local level are two factors that can have an impact on the choice of enrolment. The variable FEES2012 indicates the average tuition fees charged by the university or the universities located in each province. UNISTUDIND measures the percentage of university students enrolled in all university programs over local population. This index is a proxy for the educational offer in the province (number and variety of university programs). The assumption, confirmed by a casual inspection of MIUR data, is that immigrant students are less mobile than their Italian peers when choosing university. Immigrants tend to prefer a university closer to their residence, probably for reasons related to costs. However, in the regression model neither of the two variables has a statistically significant effect. By contrast, tuition fees and the size of the university at local level seems to affect the transition choice in the case of Italian students, although the negative impact of the variable FEES on the dependent variable is rather weak.

Local municipalities and administrations carry out policies aimed at facilitating and improving the process of integration of immigrants in the local communities. Of course the commitment of the local governments varies according to political orientation and availability of resources. CNEL, a national government agency, computes a set of indexes with the aim to describe the "integration potential" of the local contexts (CNEL 2013). In the regression model, we tested the effect of one of these indexes, CNELSOC, on the transition choice. This composite index takes into account the degree of access of immigrants to some basic welfare services and other measures of social integration (CNEL 2013, 3-4). The hypothesis is that a more favourable social environment, caused in part by specific integration policies, can encourage educational progression and attainment for the immigrant community. However, after controlling for the other variables, this effect is not statistically significant. The same result is obtained by using one of the other indexes of integration proposed by CNEL (not shown in the Table). However, this does not necessarily mean that policy does not matter. Policies expressly aimed at widening participation should probably be addressed by universities and local governments in order to encourage immigrant students to enrol in higher education.

Lastly, in order to control for specific regional effects on the dependent variable, two geographical dummies are added as controls in the full regression model. The coefficients of the dummies North-East and Center indicate that, conditionally on all the other variables of the model, immigrant graduates living in these regions of the country tend to have lower transition rates compared to other regions. A possible explanation is related to the importance of the industrial districts in the local economies of these regions. These productive systems are characterized by high labour demand, and school leavers may search for employment just after graduation with good chances of finding a job. By contrast, regional dummies do not have a statistically significant impact on the transition choice of Italians graduates, as shown in Model 8.

5. Conclusion

The empirical evidence presented in this paper confirms the existence of a substantial gap between natives and immigrant students in the transition to tertiary education, a result consistent with the findings of the international literature. Less than one third of secondary school graduates with an immigrant background enrol in

university soon after obtaining a diploma, compared to half of Italian graduates. The chance to progress in higher education depends on a number of factors, as shown by the analysis of transition choices at the provincial level. First, ethnic background matters. East European and Russian students are more likely to continue their studies, as found in other European countries. Possible explanations are the widespread diffusion of higher education qualifications in the countries of origin and a more assimilative strategy followed in the country of residence. Second and contrary to what the existing Italian literature would suggest, the specific secondary school track seems not to be important for the transition choice. However, while this is true for immigrant students, it does not hold for the native population. The attainment of a *liceo* diploma increases the probability to enrol in tertiary education for Italian secondary school leavers. More interestingly, a large share of immigrant students with a *liceo* diploma don't enrol in university: to explain this phenomenon, future research should probably investigate more deeply how secondary effects of social origins combine/interact with secondary effects of ethnic origins. Third, the condition of the local labour markets affects the incentive to invest in human capital. High youth unemployment rates have a negative impact on educational attainment for both immigrant and native students. Lastly, the average education level of the local immigrant population has a positive influence on the transition choice.

However, a note of caution is in order. These results are based on macro-geographical data collected at the provincial level, the only information so far available for the whole country. Future research should try to verify these findings by collecting individual and longitudinal data, as usual in the international literature.

Immigrant students account for only 4.3% of secondary school graduates, and 2.5% of new university enrolments (2013 data). These numbers are certainly going to increase in the future, as long as younger students with an immigrant background will progress in schooling and immigration flows continue to rise. Widening the participation of immigrant students to higher education is a crucial step for social mobility and the integration of immigrants into Italian society. While universities and national government are strongly committed to increasing the number of international students attracted by our HE system (Lagomarsino and Ravecca 2014), there is no evidence of specific policies developed by HE institutions or local governments with the aim of promoting access to university of immigrant students. This will certainly be a challenge for the future. The European experience in this field can provide some useful examples that can be adapted and applied to our country (Singh 2011, Camilleri & Proli 2014, Guerin 2014, Schneller 2014, Berry & Loke 2011).

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Table 1 - New enrolments in tertiary education and transition rates by type of diploma and country of citizenship
Absolute numbers and %. Academic Year 2013/2014

Country of citizenship	USS graduates 2012/2013		Enrolments in tertiary education 2013/2014									TRANSITION RATE
	N.	%	<i>Liceo</i>	%	Technical school	%	Professional school	%	TOTAL		%	
ROMANIA	3356	17.3	583	51.1	444	38.9	115	10.1	1142	100.0	21.3	0.34
ALBANIA	3064	15.8	576	51.5	403	36.0	140	12.5	1119	100.0	20.7	0.37
MOLDOVA	1071	5.5	154	46.8	145	44.1	30	9.1	329	100.0	6.1	0.31
UKRAINE	965	5.0	136	48.9	101	36.3	41	14.7	278	100.0	5.1	0.29
PERU	695	3.6	106	40.5	113	43.1	43	16.4	262	100.0	4.8	0.38
MOROCCO	1487	7.7	67	28.9	100	43.1	65	28.0	232	100.0	4.3	0.16
ECUADOR	587	3.0	40	25.0	83	51.9	37	23.1	160	100.0	3.0	0.27
CHINA	422	2.2	57	37.3	72	47.1	24	15.7	153	100.0	2.8	0.36
PHILIPPINES	518	2.7	53	53.0	34	34.0	13	13.0	100	100.0	1.9	0.19
RUSSIA	267	1.4	38	46.3	38	46.3	6	7.3	82	100.0	1.5	0.31
INDIA	467	2.4	30	37.5	37	46.3	13	16.3	80	100.0	1.5	0.17
MACEDONIA	350	1.8	22	38.6	24	42.1	11	19.3	57	100.0	1.1	0.16
BRAZIL	251	1.3	19	34.5	26	47.3	10	18.2	55	100.0	1.0	0.22
EGYPT	157	0.8	9	18.4	34	69.4	6	12.2	49	100.0	0.9	0.31
BANGLADESH	158	0.8	16	40.0	15	37.5	9	22.5	40	100.0	0.7	0.25
TURKEY	58	0.3	3	25.0	4	33.3	5	41.7	12	100.0	0.2	0.21
OTHER COUNTRY	5495	28.4	610	48.6	449	35.8	195	15.6	1254	100.0	23.2	0.23
TOTAL IMMIGRANT USS GRADUATES	19368	100.0	2519	46,6	2122	39.3	763	14.1	5404	100.0	100.0	0.28
TOTAL ITALIAN USS GRADUATES	427184		162735	75,9	43013	20.1	8532	4.0	214280	100.0		0.50

USS IMMIGRANT GRADUATES	19368	100.0	4815	24,9	8002	41,3	6551	33.8
Transition Rate	1.0		0.52		0.27		0.12	

USS ITALIAN GRADUATES	427184	100.0	213127	49,9	147810	34,6	66247	15.5
Transition rate	1.0		0.76		0.29		0.13	

LEGENDA: USS, upper secondary school; Transition rate, share of university enrolments over 2013 USS graduates.

Source of data: MIUR

Table 2 - Description of variables

Acronym	Dependent variables	Source of data	Mean	Standard deviation	
TRANSFOR	Share of immigrant students with a secondary school diploma in 2013 enrolled at university in 2013/2014 over total immigrant secondary school graduates	MIUR	26.6	8.6	
TRANSITA	Share of Italian students with a secondary school diploma in 2013 enrolled at university in 2013/2014 over total Italian secondary school graduates	MIUR	50.6	8.2	

Acronym	Independent variables	Source of data	Mean	Standard deviation	Expected sign
EUR	Share of foreign secondary school graduates in 2013 with East European (Romania, Albania, Moldova, Ukraine, Macedonia) and Russian citizenship over total foreign secondary school graduates	MIUR	48.7	14.0	+
LATP	Share of foreign secondary school graduates in 2013 with Latin American (Perù, Ecuador, Brazil) or Philippine citizenship over total foreign secondary school graduates	MIUR	6.5	6.5	+
ASIA	Share of foreign secondary school graduates in 2013 with Asian (India, China, Bangladesh) citizenship over total foreign secondary school graduates	MIUR	4.7	4.6	+
NAFT	Share of foreign secondary school graduates in 2013 with North African (Morocco, Egypt) or Turkish citizenship over total foreign secondary school graduates	MIUR	9.4	6.1	-
LYCEUMFOR	Share of foreign secondary school graduates with a <i>liceo</i> diploma over total foreign secondary school graduates in 2013	MIUR	26.2	9.2	+
LYCEUMITA	Share of Italian secondary school graduates with a <i>liceo</i> diploma over total Italian secondary school graduates in 2013	MIUR	49.0	5.6	+
VOCFOR	Share of foreign secondary school graduates with a professional (vocational) diploma over total foreign secondary school graduates in 2013	MIUR	33.2	10.0	-
VOCITA	Share of Italian secondary school graduates with a professional (vocational) diploma over total Italian secondary school graduates in 2013	MIUR	15.9	4.1	-
REPEATFOR	Grade retention rate for immigrant students. Share of foreign secondary school students who had to repeat the grade in 2012/2013	MIUR	26.5	3.9	-
REPEATITA	Grade retention rate for Italian students. Share of Italian secondary school students who had to repeat the grade in 2012/2013	MIUR	6.1	1.3	-
SECGEN	Share of second generation immigrant students in secondary school over total immigrant students in secondary school in 2013	MIUR	13.6	5.4	+
GGR19FOR	Gross graduation rate for immigrant students. Share of foreign secondary school graduates in 2013 over immigrant population of age 19	MIUR, ISTAT	40.7	13.3	uncertain
GGR19ITA	Gross graduation rate for Italians. Share of Italian secondary school graduates in 2013 over Italian population of age 19	MIUR, ISTAT	83.8	12.4	uncertain
IMRATE	Immigration rate in 2013	ISTAT	7.5	3.3	-
HCFOR	Human capital immigrants. Share of immigrants with a secondary school diploma or tertiary education degree	ISTAT	41.1	5.6	+
YOUTHUNE	Youth unemployment rate in 2013	ISTAT	39.6	11.8	-
UNEM	Unemployment rate, 2013	ISTAT	12.2	5.3	-
TUITIONFEES	Average tuition fees set by university / 100	MIUR	11.1	3.6	-
UNISTUDIND	Ratio between university students and resident population x 100	MIUR, ISTAT	2.2	2.1	+
CNELSOC	Index of social integration of immigrants	CNEL	56.8	8.3	+

Table 3 - OLS regression models of transition to tertiary education of immigrant and Italian students

(A) Dependent variable: Transition rates to tertiary education of immigrant students															
Acronym	Independent variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
		Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
TRANSIT	Transition rate of Italians	0,336***	0,093	0,303***	0,097	0,330***	0,099	0,344***	0,091	0,324***	0,089	0,305***	0,096	0,310***	0,096
EURS	East Europe	0,354***	0,073	0,320***	0,070	0,319***	0,072	0,339***	0,072	0,320***	0,074	0,308***	0,078	0,304***	0,080
LATP	Latin America and the Philippines	0,245**	0,112	0,187	0,119	0,142	0,116	0,219*	0,112	0,224	0,111	0,244	0,106	0,055	0,141
ASIA	Asia	0,292	0,253	0,226	0,266	0,281	0,283	0,322	0,276	0,262	0,277	0,260	0,281	0,232	0,290
NAFT	North Africa and Turkey	-0,023	0,138	-0,128	0,163	-0,105	0,164	-0,002	0,153	0,004	0,151	-0,012	0,154	-0,001	0,152
LYCEUMFOR	Lyceum diploma			0,024	0,105	-0,004	0,108	0,009	0,106	-0,035	0,115	-0,051	0,121	-0,046	0,114
VOCFOR	Professional school diploma			0,087	0,078	0,075	0,083	0,036	0,081	0,016	0,086	0,009	0,084	0,064	0,090
REPEATFOR	Foreign repeaters			0,185	0,213	0,226	0,197	0,220	0,194	0,197	0,200	0,216	0,196	0,266	0,187
SECGEN	Second generation			-0,131	0,144	-0,055	0,133	-0,109	0,128	-0,096	0,130	-0,119	0,133	-0,054	0,130
GGR19FOR	Gross graduation rate - Pop 19			-0,176***	0,065	-0,188***	0,062	-0,150**	0,063	-0,161**	0,063	-0,168**	0,065	-0,164**	0,063
IMRATE	Immigration rate					-0,246	0,308	-0,694*	0,384	-0,494	0,389	-0,444	0,400	-0,199	0,397
HCFOR	Human capital immigrants					0,200	0,187	0,134	0,176	0,179	0,174	0,174	0,171	0,407**	0,183
YOUTHUNE	Youth unemployment rate							-0,200**	0,086	-0,225**	0,095	-0,205**	0,100	-0,237**	0,095
TUITIONFEES	Tuition fees									-0,003	0,003	-0,003	0,003	-0,004	0,003
CNELSOC	Index of social integration											0,077	0,083	0,008	0,086
DUMNE	Dummy North-East													-5,753**	2,352
DUMCE	Dummy Center													-3,681*	2,066
	Intercept	-10,469	6,315	-4,910	13,643	-13,239	14,055	-2,327	14,425	3,835	16,836	0,761	16,757	-6,039	15,752
	N	91		91		91		91		91		91		91	
	Adjusted R ²	0,431		0,493		0,493		0,519		0,521		0,519		0,545	

(B) Dependent variable: Transition rates to tertiary education of Italian students

Model 8			
Acronym	Independent variables	Coeff.	S.E.
VOCITA	Professional school diploma	0,520	0,479
LYCEUMITA	Lyceum diploma	0,526*	0,282
GGR19ITA	Gross graduation rate - Pop 19	-0,340***	0,080
REPEATITA	Italian repeaters	-0,980**	0,394
TUITIONFEES	Tuition fees	-0,005*	0,003
UNISTUDIND	University students-pop ratio	0,823**	0,350
UNEM	Unemployment rate	-0,894***	0,329
DUMNW	Dummy North-West	3,782	2,920
DUMNE	Dummy North-East	1,434	3,405
DUMCE	Dummy Center	1,679	2,764
	Intercept	63,911***	21,051
	N	102	
	Adjusted R ²	0,461	

Notes: *, **, ***: statistical significance at 10%, 5%, 1% (two-tailed test).
 Estimation with robust standard errors.

Figure 1 - Vocational diploma index (INDEX-VOC) and lyceum diploma index (INDEX-LYC) by province (2013)

(INDEX > 1: immigrant students more represented; INDEX < 1: Italian students more represented; INDEX = 1: no difference between immigrant and Italian students)

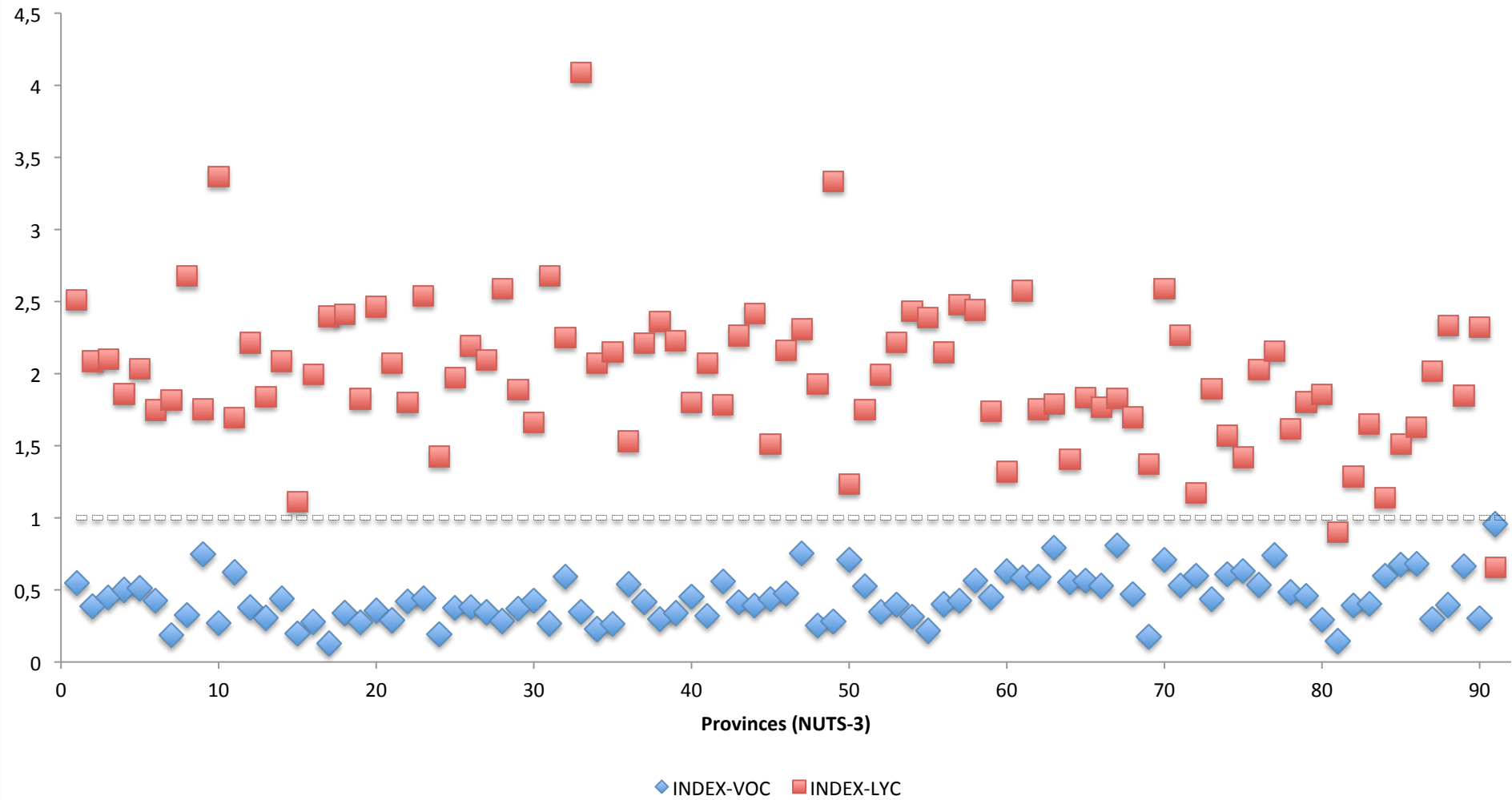
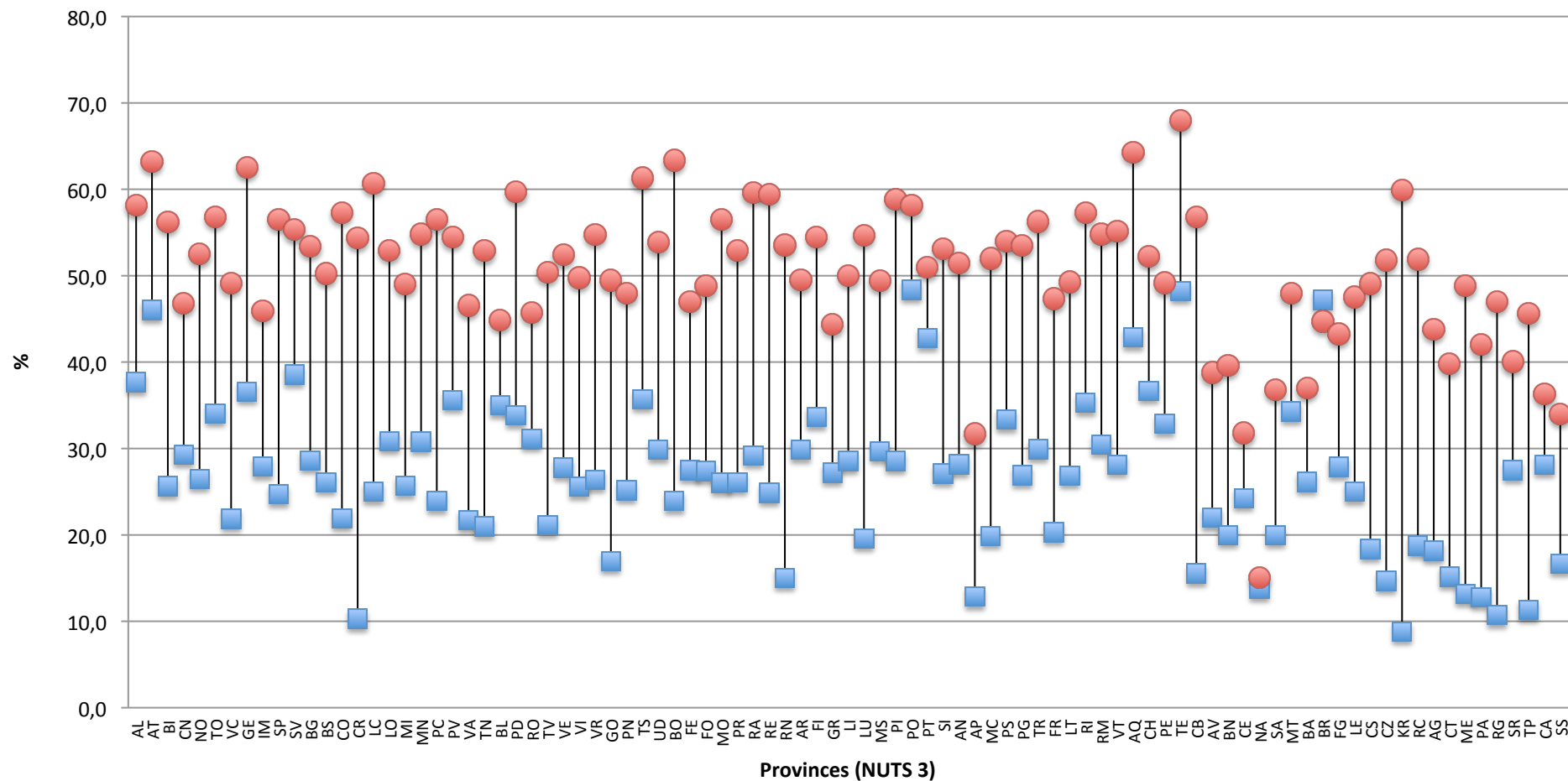


Figure 2 - Transition to tertiary education by provinces and citizenship. Academic Year 2013-2014

% of total secondary school graduates in 2013. Source of data: MIUR



■ Foreigners ● Italians