LUND UNIVERSITY
School of Economics and Management

**Master in Economic Development and Growth**

# The Immigrants Intermarriage Premium: Italy 2004-2012

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*Abstract:* This master thesis studies the impact of intermarriage on the earnings of immigrants in Italy compared to the co-ethnically married counterparts. Towards this end, instrumental variables are applied on Cross-sectional data from the Income Survey (*Il Bilancio delle Famiglie Italiane*) which has been carried out within 2004 and 2012. Intermarriage premium is not observed for the full sample. However, there is an intermarriage premium that exceeds 100% of earnings in individuals with the highest linguistic distance to Italian language and higher education. The soundness of the result has been further verified by considering the immigrants education, experience, language, the region and the years since migration. The premium is more accentuated for the male and it might indicate that intermarriage fosters the assimilation rate of this category of individuals.

*Key words:* Integration, Immigration, Intermarriage premium.

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## 1. Introduction

A common feature in most of the developed countries has been the attraction of workers, that is, immigration. Developed countries have become plural societies and social cohesion has become a priority. Integration of immigrants within the destination country is an effective tool to obtain social cohesion and it is one of the first goals established by the European Commission.

Italy has seen the number of its foreign-born population grow in the last decades, immigrant residents amount to almost 5 million, of which, 3 million are active workers and about 600.000 are students (Ambrosini, 2013). Despite this reality, the prevailing public opinion in Italy denies the idea of having a multi-ethnic society. Media and some political forces, make it even more difficult for the Italian society to accept immigrants as part of the society, and consequently for the immigrants to integrate, as it has been evidenced in literature (Ambrosini, 2013; Zanfrini, 2013; Allasino, Reyneri, Venturini & Zincone, 2004; Venturini & Villosio, 2004; Venturini & Villosio, 2006). As a result, the Italian society is facing a dilemma between the preferences and reality: how to build social cohesion in a society that has newly become multiethnic.

The intermarriage rate is the ultimate indicator of social cohesion; it indicates the acceptance of the immigrant population in the new society and also, the acceptance of the native population by the immigrants (Furtado & Song, 2014; Dribe & Nystedt, 2010; Meurs, 2010; Nekby, 2010; Gevrek, 2009; Furtado & Theodoropoulos, 2009; Dribe and Lundh, 2008; Kantarevic, 2004 and Alba and Golden, 1986, inter alia). However it is hypothesized that intermarriages entail economic integration of immigrants. Thus, the question is, whether there is an intermarriage premium that might positively indicate economic integration.

Intermarriage is the partnership between individuals with different ethnic backgrounds, for this case, between a native and an immigrant. However, intermarriage does not solely indicate the degree of integration of the two social forces. It has been outlined in literature that inter-ethnic marriage determines an efficient environment for the integration of immigrants (Kantarevic, 2004: Dribe & Lundh, 2008, Gevrek, 2009, Notemeyer, 2010, Furtado & Theodoropoulos, 2009), therefore it also fosters assimilation. The benefits might lie in the information that native spouses share about culture and local job market opportunities, along with their networks, and additionally the language proficiency might also improve. All of these in favor of the human and social capital of the intermarried immigrant. The policy implications might involve substituting these types of services by offering language courses, or job search strategies, as an example (Furtado & Theodoropoulos, 2009).

Around six percent of the natives in Europe have formed mixed marriages with immigrants and more noticeably in some countries, as much, as one third of immigrants have formed mixed marriages with the natives (Adsera & Ferrer, 2014). Even though these figures might confirm relevancy, Most of the studies regarding intermarriages premium have been mainly concentrated on the northern European countries such as Germany, Sweden, and the Netherlands, or in other continents (e.g. United States and Australia) (Furtado & Song, 2014; Furtado & Theodoropoulos, 2009; Kantarevic, 2004 and Alba and Golden, 1986, in the United States; Dribe & Nystedt, 2010; Nekby, 2010 and Dribe and Lundh, 2008 in Sweden; Nottmeyer, 2010 in Germany; Meng and Meurs, 2010 in France; Gevrek, in the Netherlands and Meng & Gregory, 2005 in Australia). Even though the outcome of these studies are influential and can be expanded over other European zones, the southern European countries have received less attention in the relevant literature. The geographical position of these countries makes them more accessible and potentially vulnerable for immigration. Thus, these countries have been receiving immigrants over decades, earlier than 1980s.

For decades, Italy has shown to be an appealing target for mass migration among other southern European countries and it embraces immigrants from different nations.

Irregular immigration makes the integration process slower, thus, there are further steps to be accomplished before being even recognized as part of the new society.

Italy attracts 'unregulated' immigration mainly because of three factorss: *i*) the geographical exposure to emigration countries and *ii*) its location which is surrounded by other developed countries that traditionally attract immigration. Therefore, Italy attracts transition immigrants. Lastly, *iii*) Italy has a relatively high informal economy (Allasino, Reyneri, Venturini & Zincone, 2004) which facilitates the absorption of irregular workers, who ignore the local legislature in the matter and who are disposed to work with limited benefits and no recognition of their rights or few rights compared to the standards of the whole country, given their weak position.

Therefore, studying the integration of the immigrants in Italy seems to be demanding and can be a perfect complement to the previous researches in the same direction. Moreover, the outcome of this research work on the intermarriages of immigrants in Italy can be easily extended to other South European countries which share the same geographical characteristics, which for some, maybe the weakest, could be seen as 'the gate to Europe'.

The research question that this study aims to address is "*to what extent does intermarriage increase the earnings of immigrants in Italy, respect to the co-ethnically married counterparts?*"

The following section presents the state of the art, discussing the literature on the intermarriage premium. Section 3 describes the theoretical foundations that support the hypothesis of the intermarriage premium. Section 4 presents the background of Italy as a host society. Section 5 presents the description of the dataset used in the econometric analysis.

Section 6 describes the methodology used to address the research question. Section 7 presents the results and the discussion of the results is given in Section 8. Finally Section 9 concludes the findings.

## 2. The State of Art

Literature on the intermarriages premium is relatively recent, and it is mainly focused on the male immigrants, since, as some studies argue, the intermarried female immigrants have a difficult interpretation in the labor market outcomes (Notemeyer, 2010, Gevrek, 2009, inter alia), however, this could be partly justified with the theory of the household division of labor (Becker, 1973).

The numerous studies operate diverse methodologies, as the main obstacle to finding a relationship between earnings and intermarriage is the endogeneity of intermarriage premium. On the hypothesis to be tested, Intermarriage should affect positively earnings positively; however, intermarried immigrants are likely to be a selected subsample from the population of immigrants. Since intermarried and endogamously married are different in many observable variables, they are likely to be different also in non-observables, and these could be correlated to earnings, the dependent variable. Therefore, it is mandatory to consider intermarriage not only as exogenous, but also as an endogenous variable for the earnings equation.

There are prevalently two methodologies in literature that account for endogeneity of intermarriage, which depend strongly on the type of dataset available. The studies that make use of instrumental variables methods are performed on cross-sectional data. While, when panel datasets are available, the authors make use of fixed effects methodologies, panel datasets are superior, since only in this way can be attributed a causal effect. However, it is important to notice the comparison group, when cross-sectional datasets are available, the comparison group is usually endogamous married immigrants, while one might also find the non-married immigrants as a integrative part of the comparison group, the non-married

constitute the main comparison group when the individual fixed effects model is applied. In other studies that make use of panel datasets, some account for distributed fixed effects or regional fixed effects. While these fixed effects methodologies allow avoiding bias for unobservable variables that could be correlated with intermarriage and earnings. However, the main interest is on individual fixed effects that might capture factors affecting intermarriage and earnings that are unobserved and fixed over time, which can be captured only at the individual level, such as: ambition, communications ability, socializations ability or even physical beauty,

As follows the studies found in literature which analyze the intermarriage premium are briefly explained.

In the United States, Kantarevic (2004) used cross sectional data from 1970 and 1980. The sample included only immigrants who were not married at the time of migration. She accounted for endogeneity using an endogenous switching regime, where she estimated two regressions and extracted the differences between the earnings of intermarried and non-intermarried foreign born individuals; this difference was linked thereafter, to the probability of intermarriage. Additionally, Kantarevic applied an instrumental variables methodology, using the probability of inter-ethnic marriage, that is, the number of unmarried immigrants of an ethnic group, in a state, over the number of foreign born of an ethnic group, in all the states, this ratio is at the same time divided by the ratio of unmarried natives in a specific state over the number of natives in all the states, this variable is a proxy to the sex ratio variable. The variables in this ratio are related to the opposite sex of the foreign born, and is limited to individuals between 16 to 65 years old. The expected relationship between the instrument and propensity to marriage is negative; the weakness of this instrument is that it could also be an instrument to marriage. Kantarevic concluded that the probability of interethnic marriage was depending on the difference between earnings of intermarried and endogamously married foreign born, further on, the results point out that there is a raw intermarriage premium of 8%, respect to the endogamously-married immigrants. The hourly wages are also

higher for intermarried individuals; this is also indicating a higher productivity of intermarried individuals. The premium vanishes once endogeneity is taken into account, indicating a positive selection into intermarriage.

Furtado and Song (2014) on the other hand used OLS on census combined with survey data from 1980 to 2005. They concluded that the intermarriage premium is positive and has been increasing in the last years.

Furtado and Theodoropoulos (2009) studied the relationship between occupation and intermarriage using an instrumental variables approach, finding a positive relationship between employment likelihood and intermarriage.

Meng and Meurs (2006) studied the intermarriage premium in France, using cross-sectional data from 1990, the sample includes only immigrants aged 20 to 59 years old, and the sample comprises mainly immigrants from seven regions, which accounts for more than 60% of the immigrant population. The author compares intermarried immigrants to endogenously married immigrants. The authors addresses endogeneity using an IV approach, where the instruments used are sex ratio, defined as the number of females over the number of males, for males and the number of males over the number of females, for the female population, in a given region from the respective ethnicity in the same age group. This ratio states the competition for marrying, the larger the ratio the less the competition in the marriage market and the probability of searching a spouse outside of their own ethnic group becomes smaller (Angrist, 2002; Meng and Gregory, 2005, cited in Meng and Meur, 2006). The second instrument used by the authors is the probability to marry within the respective ethnic group, it is composed as the number of females of the same ethnic group over the number of females in the entire population, for the males and the opposite for the females, the higher this ratio, the more likely it is to meet someone from their own ethnic group. The raw premium, from the OLS estimate is 6.2%, woman earnings of intermarriage are higher, 9.3% against 5.2% for

men. Once controlling for endogeneity, the intermarriage premium increases to a general 36% and a 94% for the female sample, while or the male sample it is 27%, this increase indicates a negative selection into intermarriage, that is, the characteristics that influence an individual to marry a native influence negatively his or her earnings.

Meng and Gregory (2005), in Australia, use an IV approach and conclude that intermarried foreign born earnings are considerably higher than the endogamously married. After taking into account endogeneity of intermarriage, the premium increases indicating a negative selection into intermarriage.

In Germany, Nottmeter (2010) uses fixed effects methodology on a panel data, focusing on male immigrants. The main findings indicated, first that the raw premium of marriage is higher for those who are intermarried, compared to the endogamously married immigrants. Secondly, once fixed effects approach is applied, to account for heterogeneity, the premium vanishes, however in this case the author compares intermarried with single individuals. The decrease in the premium might indicate positive selection. A further conclusion is that intermarried immigrants receive higher returns to experience, the author accounted for short and long term effects, where short term effects were captured in the marriage moment while long term effects were captured with the experience acquired in the course of marriage.

In Sweden, Dribe and Nystedt (2010) use panel data on male immigrants between the years from 1990 to 2009, comparing intermarried individuals to endogamously married and to never married individuals. They account for heterogeneity and endogeneity using a fixed effects method, where the unobserved factors that might affect earnings that are fixed over time are accounted for, however, language skills were excluded from the regressions, the problem arises because language skills might not be fixed over time, but might be related to earnings and intermarrying potential (Nekby, 2010). The authors used also a distributed fixed effect

method, where the intermarriage premium is allowed to vary over time. The longer period span availability allows the researchers to control for heterogeneity, that is, self-selection, and additionally to the intermarried individuals, the study included cohabiting couples. The crude intermarriage premium indicated from the OLS estimates is around. 17%. However, when the endogeneity is accounted for, the premium drops to 6%. The diminishing of the premium validates the self-selection hypothesis, that is, individuals with higher earnings potential are positively selected into intermarriage. Statistical significance is found only for Asia and Mena area, those whose culture is likely to be more distant from the Swedish culture; this is to confirm that the benefits of marrying a native are major for those, whose culture is more dissimilar to the one of the natives.

Nekby (2010) also used a panel data between the years from 1998-2005 of males and females foreign born, accounting for individual heterogeneity, with a staggered fixed effects, comparing intermarried individuals to endogamously married individuals and intermarried individuals to individuals who are yet to marry a native. The main results pointed out a significant pre-marriage income growth, which materializes from 1 to 3 years prior to the intermarriage. There is no increase in wages for those who marry natives, beyond the endogamously-married premium. The raw premium is higher for males than that for females and it drops when endogeneity is accounted for, indicating a positive self-selection. The improvement of the study respect to previous estimates is in the more appropriate control group.

In Sweden Dribe and Lundh (2008) use cross sectional data from year 2003 and studied the patterns of intermarriage. They found that intermarriage is associated to higher earnings and employment rates.

In the Netherland, Gevrek (2009) uses three waves of cross sectional datasets, from the years 1994, 1998 and 2002 of the four largest minorities of immigrants in the Netherlands, which are Antilleans, Surinamese, Turks and Moroccans. Additionally, Gevrek is able to distinguish first generation

from second generation, which improves previous research on the distinction of immigrants who are born in the destination country, but still, with a diverse ethnic background from the native population the union with the individuals is identified as endogamous marriage. A further improvement is in the distinction of the moment of marriage, which leads to properly formulate the instrument. The author compares endogamously married to intermarried foreign born individuals. Gevrek measures economic integration as employment and earnings. The author finds that the employment likelihood has a positive relationship with intermarriage; however, the latter is higher for the first generation of immigrants. Furtherly, Gevrek analyzes the link between intermarriage and earnings using an IV methodology and a standard full information likelihood estimation procedure, (Discrete Factor Method, proposed firstly by Mroz in 1999). The instruments used are group size and sex ratio (previously discussed). Group size indicates the size of the respective group of the foreign born, over that of the Netherlands. The weakness of this instrument is lies in the exclusion restriction, since a bigger group size might indicate greater integration to the Dutch society. Furtherly, an immigrant could also benefit if the respective group size is bigger, since more connections could be stablished and in this way benefit the labor market outcomes. The results indicate a raw intermarriage premium of 5%. After accounting for endogeneity, the premium increases to 30%, this indicates that intermarried foreign born are negatively selected into intermarriage. However, the results suggest that intermarried immigrants earn more than endogamously married only on the first generation of immigrants.

The results here described in general favor the hypothesis that immigrants are positively selected into marriage. However there appears to be a trend in the results, that could depends on the used methodology. In this way when instrumental variable are used, intermarried immigrants are positively selected, while with fixed effects they are negatively selected into intermarriage, that is, immigrants with a low potential of earnings have

higher propensity to marry a native, or the non-observable contribute negatively to intermarry and to earnings.

## 3. Theoretical Framework

The aim of the analysis is on the relationship between intermarriage and the economic assimilation of the immigrants, where economic assimilation is measured by earnings.

At the moment of arrival, the position of the immigrant in the labor market is disadvantaged, in part because his/her human capital is devalued, since it might be difficult for the employer to evaluate it or it might be simply be invalid, if mismatching the local needs (Dribe & Lundh, 2008). However, this situation might change in the process of assimilation, which implies the improvement of language proficiency and job searching strategies through a better knowledge of the local labor market (Chiswick 1978). It is postulated that intermarriage accelerates this process. However, in the literature of the intermarriage premium there are two competing hypotheses: the productivity hypothesis and the selection hypothesis. While empirical exercises tend to support the selection hypothesis, in literature there are presented various theories which support both of the hypothesis, discussed as follows.

The productivity hypothesis, according to which immigrants married to native-born spouses assimilate faster than comparable immigrants married to foreign-born spouses. This is because spouses play an integral role in human capital accumulation. According to the productivity hypothesis, intermarriage fosters economic integration as native spouses boost linguistic adjustment; provide knowledge of the local labor market, access to social networks, and insight into important structures. In addition, they explain local customs, norms, and peculiarities, furtherly intermarriage also signals greater adaptability and attachment to the receiving country, all of these contributing positively to the local specific- human capital of the immigrant.

The social theory puts emphasis on the importance of the social capital in the immigrant economic integration (Aguilera 2002, 2005, mentioned in Gevrek, 2009). Second of this theory immigrants are disadvantaged because their network is composed mainly by members of their own ethnic community, who are less informed about the labor market respect to the natives, i.e. job positions and job searching procedures. Intermarriage gives access to native networks. Enjoying a native network could have a positive impact on earnings; networks could provide information on the job opportunities. Recommendations from a native might also give more confidence to the potential employer in the hiring process. Further on, intermarrying might give signals to the labor market of a better integration respect to other immigrants and attachment to the host society (Furtado & Theodoropoulos, 2009).

According to the Family Investment Hypothesis (Worswick 1999; Baker and Benjamin 1997; Blau et al. 2003, all cited in Gevrek, 2009), the assimilation of the immigrant might differ depending on his or her family structure. Since immigrants are assumed to be credit constrained, in order to invest in human capital or wait to find a job with a higher salary they should rely on other members of the family, resulting on dead end jobs for the secondary member. Therefore, mixed families are less credit constraint and do not need to rely on other family members, this result in higher investment in specific human capital and they can also afford to wait for a job with a higher salary. Further on, marrying a native might affect the human capital but also give a better orientation on how investing in human capital could give higher returns, if natives are better informed on the structural status of economy.

The selection hypothesis, according to which, the relationship between intermarriages and assimilation is spurious because intermarried immigrants are a selected subsample from the population of all married immigrants, who possesses highly valued labor market skills that are also highly valued in the native marriage market, these can be local language

proficiency, knowledge of customs, and even physical beauty (Kantarevic, 2004).

According to Becker (1974), in general individuals prefer spouses with similar assortment of resources. However, the partner does not need to have the same amount in each resource, but needs to compensate when poor in a resource with abundance in another. In the local marriage market, an immigrant with higher education has a resource that could be bargained with a native who is willing to trade endogamy for a highly educated spouse (Furtado and Theodoropoulos, 2009). In addition, immigrants acquiring local human capital might intermarry more often, also because educational institutions provide platforms to meet natives; this in combination with language proficiency allows immigrants to approach others, including the natives (Furtado & Theodoropoulos, 2009). Moreover, more educated immigrants are more likely to move away from traditional enclaves from his/her ethnic group and live in areas where the neighborhood is composed mainly by natives which in turn increase the likelihood of intermarrying (Dribe & Lundh, 2008). Therefore, intermarried immigrants might be a highly selective group from the immigrant population.

The empirical evidence analyzing these hypotheses, in general favors the selection hypothesis. Intermarried immigrants tend to be positively self-selected into intermarriage, in other words, those who have potential for higher earnings are more likely to marry a native.

However, it is also recognized in literature that intermarriage could be uneasy and even costly; it could result in segregation and suppression of the potential benefits.

As stated by Notemeyer (2010) intermarriage can also induce costs on the immigrant. As a matter of fact, an individual that marries a spouse from a different ethnic background might not enjoy the support of his or her own ethnic group. This could negatively affect earnings if they can no longer rely on the networks of their own ethnic community to find a job.

Further on, an immigrant that intermarries could also suffer from lack of tolerance from the native spouse connections. In this way an intermarried immigrant could suffer the intolerance from both sides, which could also have a negative impact on earnings. Furtherly, even if the native network shares information about a high skill job opening, with the intermarried immigrant, this might not be suitable for him/her if a low skilled (Furtado & Theodoropoulos, 2009). In many ways, a native network might not necessarily be advantageous for an intermarried immigrant. A network of his her own ethnic group could provide useful information about job opportunities more suitable to the specific skills of an immigrant.

However, it is important to notice that the intermarriage rate might vary depending on the ethnic group. Second of the segmented assimilation theory (Portes and Zhou, 1993, cited in Furtado and Song, 2014), the integration might differ among the various ethnic groups of immigrants, since the assimilation of immigrants is closely related to the experience of previous immigrant groups from the same origin, in this way some groups could have been integrated and perceived to be more similar to the native population, while other groups could still be marginalized and discriminated. In this manner, the integration of an ethnic group, mirrored by the intermarriage rate might differ among different ethnic groups.

In sum, intermarriage could be a result of a high earnings potential or could boost them, it could favor integration or as argued, in highly intolerant groups or societies it could result in segregation.

This is what in theories is found, however the legislative, historic and political background, might have a heavy impact on immigration and intermarriage.

## 4. Background of Italy as a host society

Italy started being an immigration country in the decade of the 80s (Venturini & Villosio, 2006; Allasino, Reyneri, Venturini & Zincone, 2004 and Zanfrini, 2003), as a matter of fact, during this decade the immigration

flows were comparable to those of Germany and Britain (Allasino, Reyneri, Venturini & Zincone, 2004). However, immigration in Italy appears to have started as a consequence of the economic crisis in the year 1973 which involved most economies. After the year 1973/74 traditionally attractive countries for immigrants closed their frontiers to new immigration; immigrants thereafter opted for southern European countries, which borders were less regulated (Allasino, Reyneri, Venturini & Zincone, 2004).

It is a fact that Italy attracts mainly illegal immigration; estimations from the early biggest flows of people suggest that about half were irregular immigrants (Mauri & Micheli, 1992 cited in Allasino, Reyneri, Venturini & Zincone, 2004), the figures however are difficult to rely on, since irregular immigration is not visible to the officials and the number could be undervalued. The sectors where immigrant labor is located in Italy are mainly composed by small factories and domestic assistance, sectors with traditionally predominant informal economy (Allasino, Reyneri, Venturini & Zincone, 2004). Moreover, the amendments for irregular immigrants contribute to the perception that the regular entrance in the territory is less effective (Allasino, Reyneri, Venturini & Zincone, 2004). Second of Zanfrini (2013) immigrants were attracted by the facility of staying in spite of an irregular status. The author also outlines that the immigrant flows were spontaneous, that is, they were not the effect of recruiting policies and they were not linked from the colonial past either.

Even tough, the scenario in Italy called for legislature on regularization rather than calling for new entries; the amendments were in fact used to regularize individuals who were already present in the territory, but who were not holding a valid permit of stay and work.

The first law on migration dated 1986 (943/1986), well ten years after the first flows of immigrants, the law allowed entrance with work permit, after which there was a moderate number of entrances in Italy (Zanfrini, 2013). Further on, the law acknowledged few social rights to immigrant workers. The law 39/1990 included regulations which concerned

self-employment, legal protection, asylum and expulsion (Zanfrini, 2013). Only in 1998, there was a set of rules, destined for the integration of immigrants in Italy (286/98) this set of rules was based on four principles: security; safeguard of human rights; acknowledgement of the same social and civil rights as Italian citizens and pluralism, that is, respect and safeguard of the cultural differences, language and religion (Zanfrini, 2013).

The law 40/98, allowed the entrance for job searching. The latter led to a growth of 1/3 on the entrances already in 1999 (Allasino, Reyneri, Venturini & Zincone, 2004).

Finally, there was an increase in the legal entries, this derived mainly because of two reasons. First, in 1992 there was approved a law on citizenship, based on Italian descent principle (Zanfrini, 2013), this allowed descendants of Italian acquire the Italian citizenship, even if they had never lived in Italy. Secondly, the legal entrances started growing, with the family reunions starting in 1996 (Allasino, Reyneri, Venturini & Zincone, 2004). Recent figures from the Italian Institute of Statistics (ISTAT, year 2011) show that entries for family reunification constitute nearly half of the new entries nowadays.

In 2002 there was turning point in the reform. The law approved in 2002 was meant to limit the benefits if immigrants, limiting the entry possibilities, restricting the permanency, increasing the measures and penalties for irregular immigration and resetting the requirement of availability of vacancies for working immigrants (Zanfrini, 2013; Allasino, Reyneri, Venturini & Zincone, 2004). However, during this year there was an amendment that allowed regularizing workers, the latter was destined to regularize the situation of home assistance, after more than 300,000 Italian families recognized to have hired irregular workers for home services (Zanfrini, 2013; Allasino, Reyneri, Venturini & Zincone, 2004).

Further on, in 2008, it was approved a package of norms dictated to restrict the position of immigrants (*pacchetto sicurezza*). For this new set of

rules illegal stay or illegal entry in the Italian territory constituted a crime. The set of rules were revised in 2011 after being put in discussion by the European Court of Justice as infringing some of the fundamental human rights (Zanfrini, 2013).

Although the laws and reforms allowed a number of regularizations, the number was not matching the demand for regularizations. The gap between the granted authorizations and the entrances in the labor market without a working permit are an evident outcome (Zanfrini, 2013). In literature the reasons attributed to this gap are mainly three: First the established quotas are undersized. Second, the procedures to legalize irregular work are not concealing the fact that the immigrant work is mainly absorbed by households and micro factories; therefore the burocratic load on the employers is at least, discouraging. Finally, since those who are to be regular workers need to have a valid working permit, they cannot opt for regularizing their work if they do not already hold a permit. Further on, an additional obstacle is set by the nature of the shadow economy, which is thought to absorb a substantial part of irregular workers (Zanfrini, 2013). In conclusion, the gap is a result of a mismatch between the flow decrees and the applications, in size and characteristics of the labor.

Further on, the decrees that take the form of amendments could foster illegal procedures, creating fictitious works, which could be simulated by relatives or friends or by the criminal market. The decrees are mismatching the applications, but, even more importantly, the spontaneous flow of immigrants, are mismatching the potential integration in the host society (Zanfrini, 3013).

### 4.1. Current state of the immigrants economic demography

According to figures from the las Census, year 2011, there are currently 4,570,317 of foreigners living in Italy, with a valid permit of stay.

Allasino, Reyneri, Venturini and Zincone (2004) pointed out that immigration in Italy was ethnically fragmented. In fact, figures from the

year 2001 evidenced that the biggest minority, Moroccans were 11,6 % of total immigrants followed by Albanians (10,6%), Romanians (5,5%), Filipinos (4,7%), Chinese (4,1%), Tunisians (3,4%), Americans (3,2%), citizens from ex-Yugoslavia (2,7%), Germans (2,6%) and Senegalese (2,5%). Figures of the last year of Census, 2011, however, show that the shares have been changing, in fact the ten biggest, according to the figures are: Romanians, with nearly a Million of people, followed by Albanians, with nearly half a million of people, Moroccans, with a bit more than 450,000 people, Chinese people follow, exceeding the 200,000 people, the trend of people arriving have been increasing constantly in the last ten years, Ukrainians exceed 200,000 individuals by few, and the trend of people arriving have been slowed down after the crisis, after the year 2007, however the number of people from Ukraine has grown by more than ten in the last ten years. Filipinos are the sixth biggest minority, the growth of the population of Filipinos citizens, however appears more flat, particularly after the crisis and there are actually around 140,000 individuals living in Italy. The seventh biggest minority is placed by the citizens from Moldova, there are actually nearly 135,000 individuals living in Italy, coming from Moldova, the trend of individuals arriving to the Italian territory have been somewhat stable, at the beginning of the decade there were nearly 5,000 Moldavians living in Italy, the year 2004 this number was five times bigger, afterwards the trend stabilized. The eighth biggest minority living in Italy is Indians, however, just until the year 2010 there were more Indians than Moldavians in Italy, Nowadays there are nearly 120,000 Indians living in Italy, at the beginning of the decade there were around 35,000 Indians the trend of individuals arriving to Italy has been stable, even during the crisis. To Indians follow individuals from Poland, there are around 110,000 people from Poland living in Italy, at the beginning of the decade there were nearly 30,000, the trend of pole citizens arriving in Italy has not been growing a lot, compared to other minorities, however, it appears stable. Since the year 2006 to the year 2009 the number of poles was exceeding the number of Indians living in Italy. The last biggest minority is placed by the Tunisians.

At the beginning of the decade there were nearly 60,000 Tunisians living in Italy, in the year 2011 the number grew to around 105,000.

In conclusion, the minorities have changed the shares in the last decade; however they continue being fragmented, except for the Romanian population, which share of the immigrant population is the highest, reaching nearly the 20% of it.

Allasino, Reyneri, Venturini and Zincone (2004) noted that occupation of immigrants in Italy differs among regions; this is due to the local structure of the Economy. In the North eastern and central regions (Emilia Romagna and Marche) there is mainly small manufacturing firms employing immigrants. In the North eastern regions there is also labor demand from agriculture, which is seasonal. Domestic labor is relevant only in the central cities of Bologna and Florence. The cities of Rome and Milan demand labor mainly for families, that is, domestic labor, and services for the quality of urban life, such as restoring and cleaning services. In Lombardi there is also some demand from small manufacturing companies. Finally the southern regions in which bigger cities labor demand is mainly due to domestic labor and in the rural areas demand seasonal labor for the agriculture.

Intermarriage might be limited due to the nature of the sector where the immigrants are mainly employed. For example, where labor among female immigrants is composed mainly by domestic care givers (for elderly, children and housekeeping), where the employed lives with the family and often restrict to 12 daily working hours, seasonal workers are also limited in this sense. However, it is intuitive to consider this category of workers as having a higher rate of return migration, for who integration is not in consideration.

Some relevant facts about the immigrants' economic demography are firstly given by the origin country. The official figures of the census allow to partly reflecting the group size present in the territory of the host

society, however in aggregate numbers, this says few about how intermarriage incidence might vary because of it. The descriptive nature of literature in intermarriage is widely diffused. The marriage patterns can tell indicators how closed are the groups in a society, in this sense a descriptive focus has much to say (Kalmijn, 1998). Studies are many times limited to percentages which are limited by the group size which makes difficult to make comparisons across the different groups (Kalmijn, 1998). Thus, reporting absolute values of group size it seems mandatory to for a valid interpretation.

### 4.2. Intermarriage facts

Mixed marriages, where one spouse was Italian native and one foreigner, celebrated in the year 2011 were around 18,000. However marriages in Italy are decreasing since 1972, as mixed marriages in 2011 were 5,555 less respect to the year 2007.

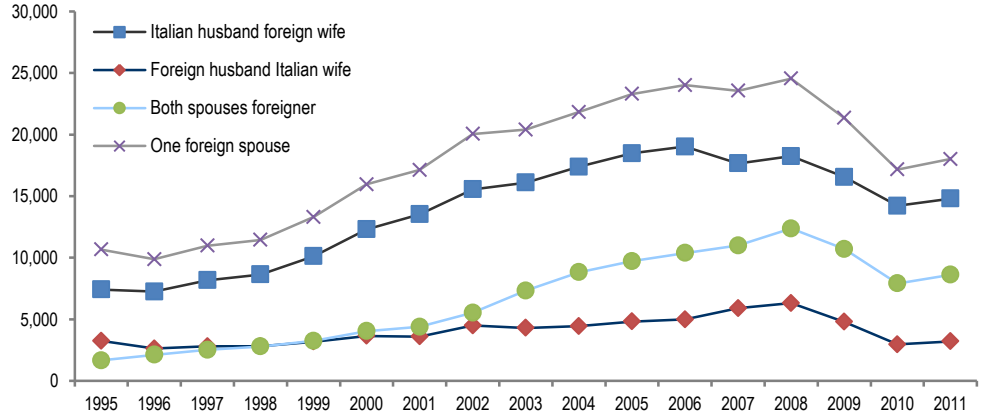
Figure 1 shows the trend of marriages where at least one spouse is foreign born, however it worth clarifying that the definition of foreign born from the Italian Institute of Statistics (ISTAT) corresponds to the individual who has not acquired the Italian citizenship, either by birth, marriage, residence or descent.

The most evident trend is that marriages with a foreign born spouse are consistently growing. The share of mixed marriages where the wife is Italian is small compared to the one where the husband is Italian, the trend is also flatter. Endogamous marriages where both of the spouses are foreign are constantly increasing with a steeper slope respect to the mixed marriages. All the trends decrease after the financial crisis in 2008 and then recovers, of mixed and endogamous marriages.

In general there is an opening towards marriages where at least one spouse is a foreigner; this should be interpreted as a positive sign of integration. Even if the two partners are foreign, if they start by marrying in

the host society it probably is because they foresee a good prospect for their future in the host country.

**FIGURE 1: Marriages where at least one spouse is foreign born. Years 1995-2011, absolute values.**




Source: Istat, Census 2011. http://www.istat.it/it/archivio/75517

These series of figures 1 allow understanding the general trend in the marriages of immigrants, mixed or endogamous in the host society. However, Italy is a various country with a diversified a territory. In broad lines, the wealthiest regions in Italy are the northern ones, followed by the center of the country, the south and at last the islands. It might be the case that the immigrant population be logically distributed following this criterion. In order to understand the intermarriage with a regional optic, figure 2 presents endogamous marriages, from native and immigrants and mixed marriages. This allows comparing the different types of marriage, per region and in the country.

In the country average, perhaps logically, native endogamous marriages are the highest; the lowest are the foreign endogamous marriages, while mixed marriages are situated between the two. The average intermarriage rate is 13%, endogamous marriages between immigrants are 4.2%, in the country average.

**FIGURE 2: Marriages, by citizenship combination, year 2011, absolute values and percentages**

| REGION | Type of marriage | | | | | |
|---|---|---|---|---|---|---|
| | Both spouses Italian | | One foreign spouse | | Both foreign spouses | |
| | Absolut values | % values | Absolut values | % values | Absolut values | % values |
| Piedmont | 11,427 | 84.6 | 2,088 | 15.4 | 603 | 4.5 |
| Valle d'Aosta | 354 | 85.9 | 58 | 14.1 | 13 | 3.2 |
| Liguria | 4,256 | 82.4 | 907 | 17.6 | 227 | 4.4 |
| Lombardi | 23,647 | 84.0 | 4,489 | 16.0 | 1,250 | 4.4 |
| Trentino-Alto Adige | 2,956 | 78.8 | 796 | 21.2 | 330 | 8.8 |
| Bolzano | 1,496 | 73.9 | 528 | 26.1 | 270 | 13.3 |
| Trento | 1,460 | 84.5 | 268 | 15.5 | 60 | 3.5 |
| Veneto | 12,299 | 79.4 | 3,197 | 20.6 | 1,417 | 9.1 |
| Friuli-Venezia Giulia | 2,846 | 81.4 | 652 | 18.6 | 158 | 4.5 |
| Emilia-Romagna | 10,278 | 82.3 | 2,206 | 17.7 | 563 | 4.5 |
| Tuscany | 9,597 | 77.0 | 2,866 | 23.0 | 1,416 | 11.4 |
| Umbria | 2,456 | 81.0 | 576 | 19.0 | 197 | 6.5 |
| Marche | 3,956 | 85.0 | 699 | 15.0 | 153 | 3.3 |
| Lazio | 15,774 | 84.7 | 2,856 | 15.3 | 873 | 4.7 |
| Abruzzo | 3,493 | 89.2 | 421 | 10.8 | 64 | 1.6 |
| Molise | 918 | 92.7 | 72 | 7.3 | 6 | 0.6 |
| Campania | 23,295 | 92.3 | 1,939 | 7.7 | 956 | 3.8 |
| Puglia | 15,698 | 95.7 | 704 | 4.3 | 49 | 0.3 |
| Basilicata | 2,073 | 94.2 | 128 | 5.8 | 12 | 0.5 |
| Calabria | 7,984 | 94.4 | 470 | 5.6 | 37 | 0.4 |
| Sicily | 19,667 | 94.7 | 1,101 | 5.3 | 204 | 1.0 |
| Sardinia | 5,239 | 93.0 | 392 | 7.0 | 84 | 1.5 |
| **Italy** | **178,213** | **87.0** | **26,617** | **13.0** | **8,612** | **4.2** |
| **Nord-west** | **39,684** | **84.0** | **7,542** | **16.0** | **2,093** | **4.4** |
| **Nord-east** | **28,379** | **80.6** | **6,851** | **19.4** | **2,468** | **7.0** |
| **Center** | **31,783** | **82.0** | **6,997** | **18.0** | **2,639** | **6.8** |
| **South** | **53,461** | **93.5** | **3,734** | **6.5** | **1,124** | **2.0** |
| **Islands** | **24,906** | **94.3** | **1,493** | **5.7** | **288** | **1.1** |

Source: Istat, Census 2011. http://www.istat.it/it/archivio/75517

Endogamous marriages with both spouses being immigrants are higher in the north east and center of the country, where the percentage situates below the country average, while in the south and the islands endogamous foreign marriages represent just 1% of all the marriages. It might be intuitive to consider that the number of endogamous marriages could simply reflect the limited presence of foreigners in the region; however, when looking at the mixed marriages, the islands have five times

more mixed marriages than endogamous foreign marriages, after the islands follow the south, the north west, north east and at last, the center of the country. The percentage of mixed marriages from the total marriages, however, is higher in the northern regions of the country.

This could indicate that the constraints in the local marriage market play an important role in these regions, the structural factors are differing in the different regions, probably the southern regions and islands set more limitations for finding someone from their own ethnic group at the moment of marriage and the foreigners opt for the natives.

Figure 3 shows mixed marriages by country of origin from the minorities with the highest intermarriage rates by gender.

It would be expected to see that when the group size of the immigrant is limited in the host country, the intermarriage rate is higher. Group size acts in two ways in the intermarriage decision, first as a constraint in the marriage market, and secondly as a third party influence.

Religion plays also an important role in the intermarriage decision; therefore the intermarriage rate is expected to be higher for those countries with a common religion, particularly when the wife is the immigrant. Thus, conservative religions usually disadvise the mixed unions and to some extent might accept the union only for the male. The way religion influence the decision is also through third party influence, however, it is likely to have a great impact on the personal preferences.

Countries which probably have a close culture and same religion are appearing in both, mixed marriages with Italian husband and Italian wife (Brazil, France, Germany, Cuba and Romania). Great parts of men that intermarry with an Italian spouse are from Muslim countries (Albania, Morocco, Egypt, Tunis and Senegal), as predicted; while women from Muslim countries do not really appear to marry Italian, with the exception of Morocco.

**FIGURE 3: Marriages with at least one foreign spouse, main citizenships, year 2011, absolute values and percentages.**

| Origin Country | Italian husband foreign wife | | Origin Country | Foreign husband Italian wife | | Origin Country | Both spouses foreign | |
|---|---|---|---|---|---|---|---|---|
| | Absolute Value | % Value | | Absolute Value | % Value | | Absolute Value | % Value |
| Romania | 2,617 | 17.7 | Morocco | 320 | 10 | Romania | 864 | 18.8 |
| Ukraine | 1,467 | 9.9 | Albania | 260 | 8.1 | Nigeria | 567 | 12.3 |
| Brazil | 1,132 | 7.6 | UK | 234 | 7.3 | China | 526 | 11.4 |
| Russia | 971 | 6.6 | USA | 155 | 4.8 | Moldova | 251 | 5.5 |
| Poland | 947 | 6.4 | Germania | 152 | 4.7 | Ukraine | 213 | 4.6 |
| Moldova | 699 | 4.7 | Tunis | 152 | 4.7 | Peru | 199 | 4.3 |
| Albania | 619 | 4.2 | France | 150 | 4.7 | Morocco | 191 | 4.2 |
| Peru | 390 | 2.6 | Romania | 140 | 4.4 | Albania | 179 | 3.9 |
| Morocco | 357 | 2.4 | Spain | 117 | 3.6 | Ireland | 132 | 2.9 |
| Ecuador | 279 | 1.9 | Brazil | 100 | 3.1 | Ecuador | 129 | 2.8 |
| Germania | 267 | 1.8 | Senegal | 95 | 3 | Ghana | 113 | 2.5 |
| Cuba | 258 | 1.7 | Egypt | 79 | 2.5 | UK | 90 | 2 |
| France | 208 | 1.4 | Cuba | 59 | 1.8 | Poland | 73 | 1.6 |
| USA | 205 | 1.4 | Argentina | 46 | 1.4 | Cameron | 68 | 1.5 |
| Dominican R. | 198 | 1.3 | Netherlands | 44 | 1.4 | Russia | 65 | 1.4 |
| Other | 4,185 | 28.4 | Other | 1,103 | 34.5 | Other | 940 | 20.3 |
| **Total** | **14,799** | **100** | **Total** | **3,206** | **100** | **Total** | **4,600** | **100** |

Source: Istat, Census 2011. http://www.istat.it/it/archivio/75517

It seems surprising that the rates for both mixed marriages are quite different. In general the immigrant women intermarry at a highest rate, compared to men, e.g., Brazilian women intermarry 11 times more than Brazilian men, same for Albanian women, who intermarries more than twice as much as Albanian men, etc.

When comparing endogamous and exogamous marriage (mixed marriages) rates, exogamous marriages are much higher, e.g., Romanian

women intermarry 2,617 and marries co ethnic partners 864, Peruvian women, 390 while marries co-ethnics 199.

Individuals with the highest rate of endogamous marriage are many times from the biggest minorities, who probably have less constraints in the marriage market when finding a co-ethnic spouse, e.g. Romania, China, Moldova, Ukraine, etc.

Figures show consistency with what is said in literature about intermarriages and its determinants. Alba and Golden (1986) concluded that the factors that influence a decision to marry are: group size, ancestry type and degree of ethnic relatedness. Further on intermarriages rate have a natural tendency to grow (Alba and Golden, 1986).

## 5. Data and Descriptive Statistics

The data used for the analysis comes from the Survey of Italian Family Income (*Il Bilancio delle Famiglie Italiane*). The survey contains information on the socio-economic position of the families living in Italy, every year of survey the number of interviewed families might vary, however the number is around 8,000 families and 20.000 individuals. The survey contains a subsample of panel, which in 2012 was composed by around 4,000 families; these families could have been interviewed in the previous or even earlier waves. The survey is distributed by the Italian Central Bank (Banca d'Italia).The survey is conducted every two years, since the 60s. The sample is randomly selected. For the interest of the analysis and for practical reasons, the sample includes the waves of the years 2004, 2006, 2008, 2010 and 2012.

The first year, when the Euro started being used as the official currency in Italy was the year 2002; the questionnaires are presenting information on Italian Lire, previous to the year. The starting year in the analysis is 2004, since after the euro started being used as the official currency it is cautious to expect that prices and salaries suffer adjustments. This preventive measure might help avoiding a bias of adjustments, at the

price of losing some observations. A further practical reason for the chosen years of analysis is that the questionnaires are consistently more homogeneous in recent years, presenting more similarities in the variables, thus this simplifies the procedure in the analysis while also making it more comparable among the different years. Finally, and most importantly, Italy is a relatively young country of immigration and therefore it makes more sense that intermarriage, and of course, economic integration might occur in more recent years.

The analysis focuses only on salary earners. In order to restrict the sample to individuals in a working age, individuals older than 65 years and younger than 15 years were excluded; individuals without a salary income were also excluded from the analysis. For the aim of this analysis, observations that arrived for a family reason, which is assumed to be a family reunification were erased from the sample, in this way we can assume the individuals decided to marry after migrating, the cost of this exclusion of observations diminish the sample by 197 observations, most of them being women.

The sample in the descriptive part is kept in a high number, compared to the econometric analysis. The main reason for that is that I believe the comparison of endogamously married and intermarried immigrants with the natives might gave some important hints on the gaps and integration of immigrants; when economic integration is intended as diminishing the gap between immigrants and the natives, the outcomes in the labor market and the human capital bundles of the native should act as a benchmark for the economic integration of immigrants, therefore, even though most of the studies analyzing intermarriage premium do not present comparisons with the natives; a comparison is provided in this thesis.

The sample is composed by 28,560 observations, of which 8.3% are immigrants; of the 2,367 observations 1,074 are endogamous married while 1,204 are exogamous married. 89 are never married immigrants, the number

of the never married might appear small, and however, since only individuals with salary are considered it shall not be surprising.

Figure 4 shows the descriptive statistics for the male, by type of marriage.

**FIGURE 4**
**Descriptive Statistics Male Sample**

| | **Total Sample** | | **Endogamous Marriage** | | **Exogamous Marriage** | | **Native-Endogamous Marriage** | |
|---|---|---|---|---|---|---|---|---|
| | **Mean** | **Std. Dev.** | **Mean** | **Std. Dev.** | **Mean** | **Std. Dev.** | **Mean** | **Std. Dev.** |
| **Wage** | 19003.5 | 9693.3 | 15490 | 6427.9 | 17273.7 | 9517.8 | 19399.9 | 9839.5 |
| **Age** | 45.97 | 9 | 41.09 | 8.19 | 42.82 | 9.55 | 46.58 | 8.85 |
| **Educational Level** | | | | | | | | |
| Primary (%) | 7.44 | | 7.11 | | 6.24 | | 7.56 | |
| Secondary (%) | 78.88 | | 81.01 | | 84.65 | | 78.27 | |
| Tertiary (%) | 11.94 | | 8.79 | | 7.91 | | 12.49 | |
| Postgraduate (%) | 1.12 | | 1.55 | | 0.36 | | 1.15 | |
| **Migration information** | | | | | | | | |
| Age at migration | 28.45 | 8.2 | 28.96 | 7.38 | 27.4 | 9.62 | | |
| Years since migration | 11.52 | 7.9 | 11.73 | 6.47 | 11.10 | 10.25 | | |
| **Italian proficiency** | | | | | | | | |
| Expressing in Italian | 8.35 | 1.53 | 7.45 | 1.6 | 7.89 | 1.74 | 8.53 | 1.43 |

The earnings were calculated as the net yearly earnings, for comparative reasons and in order to take into account the productivity the resulting earnings were divided by the average of weekly hours worked in a year.

The average earnings are higher for native endogamous marriages, followed by intermarried immigrants and the lowest average earnings correspond to the endogamously married immigrants. Secondly, intermarried and endogamously married lag behind in terms of tertiary education when compared to the native sample.

However when the post graduate education is considered, endogamously married have the highest percentage. Thirdly, the average years since migration are surprisingly higher for those who are endogamously married, however the standard deviation is almost doubled in the intermarried group and the difference in the average years since arrival between the two groups is not so significant. Lastly, before the conclusions on language proficiency of the sample it is due to have some clarifications. Language ability or proficiency is a subjective question which is answered by the interviewers who judge the speaking skills capability in Italian language of the interviewed; the scale goes from a maximum of ten and a minimum of zero. The question was answered also by the natives. It can be argued that this is a subjective measure and it might be based on the way the questions were answered, which could be influenced by feelings at the same time influenced by the questions. However, it is the only measure for speaking skills present in the questionnaire. Additionally, this could probably measure communication skills and not solely the language proficiency.

As expected, intermarried individuals have better language skills than endogamously married, while natives have the highest record.

**FIGURE 5**

**Descriptive Statistics Female Sample**

| | **Total Sample** | | **Endogamous Marriage** | | **Exogamous Marriage** | | **Native-Endogamous Marriage** | |
|---|---|---|---|---|---|---|---|---|
| | **Mean** | **Std. Dev.** | **Mean** | **Std. Dev.** | **Mean** | **Std. Dev.** | **Mean** | **Std. Dev.** |
| **Wage** | 14544.1 | 6989.15 | 9891.31 | 5517.45 | 12535 | 6675.5 | 14931.11 | 6970.11 |
| **Age** | 44.76 | 8.84 | 38.3 | 9.08 | 42.83 | 8.67 | 46.58 | 8.85 |
| **Educational Level** | | | | | | | | |
| Primary (%) | 4.71 | | 6.51 | | 7.47 | | 5.35 | |
| Secondary (%) | 75.90 | | 86.55 | | 80.84 | | 82.48 | |
| Tertiary (%) | 18.32 | | 5.64 | | 8.42 | | 11.19 | |
| Postgraduate (%) | 0.83 | | 1.3 | | 1.63 | | 0.73 | |
| **Migration information** | | | | | | | | |
| Age at migration | 29.81 | 10.46 | 27.93 | 8.42 | 31.37 | 11.68 | | |
| Years since migration | 10.64 | 8.912 | 9.95 | 6.5 | 11.21 | 10.5 | | |
| **Italian proficiency** | | | | | | | | |
| Expressing in Italian | 8.55 | 1.43 | 7.75 | 1.52 | 7.9 | 1.81 | 8.71 | 1.31 |

Figure 5, presents the female sample descriptive statistics. In coherence with the male sample, the average earnings are the highest for the native group, followed by the intermarried immigrants and the lowest average earnings are verified in the endogamously married group. Secondly,

there is a substantial difference in the average age of four years between the endogamous and exogamous groups, being the former the youngest. In terms of education, the native group has the highest percentage of individuals with tertiary education, followed by the intermarried group and at last the endogamously married group. The percentage of individuals with post graduate studies is the highest for the exogamous married, followed by the endogamously married; surprisingly the natives are situated at last. The age at migration is higher for the exogamous married group. Years since migration, in accordance with the literature are higher for the exogamous married. The language proficiency is higher for the natives, followed by the intermarried and at last the endogamously married. The difference between the two, however, is not high.

When comparing the male to the female sample, it is noticeable that women have higher language ability and to some extent higher tertiary education rates, however the earnings appear lower than the indicated in th male sample.

The bank restrict the distribution of information on country of origin, and agreed to furnish this information in aggregated groups, with enough numerosity to protect the privacy of the interviewed. Therefore, ethnic groups were divided considering the proximity to Italian language and, as Helgertz (2013) and in one case the economy of the origin country (as high income or low income). Four groups were created, their formulation is explained in the variables subsection, in the methodology section.

The group with the highest rate of intermarriage is the group with Germanic languages. Followed by the group with Latin language roots, surprisingly, the group that follows is the one most distant, without a Latin script, and at last the group with medium distance, with Latin alphabet but not Latin roots in the language. Literature has many times outlined that intermarrying might depend on the proximity of the culture/language, therefore this might seem surprising, even the group without a Latin

alphabet which is expected to have the lowest rate due to the probability of having more traditionalist religions that do not recommend unions with other religions, are not the last. However, this can be explained by the group size, which is the biggest for the Latin group, therefore it is expected a lower rate of intermarriage, followed by the most distant group, without a Latin alphabet, afterwards the group with medium distance, common alphabet and at last is found the group with Germanic languages, which is also the group with the highest rate of intermarriages.

It worth highlighting that since group size is not perfectly identified and only the language proximity is used as a proxy for it. Language distance has been identified as one of the ultimate factors that influence positively intermarriage, confirmed by the work of Lucassen and Laarman (2009).

### 5.1. Pitfalls and limitations of the data

Wages are observed only for those immigrants that are actually working, in fact, the most unsuccessful marriages of co-ethnically married immigrants might return home while the intermarried immigrants might stay in the hosting country. The sample is positively selected since those who fail to have a salary are excluded from the analysis. Therefore validity of the analysis remains internal.

The moment when the marriage occurred is not observed. Therefore, it is not observed if the individuals married after migrating. It is assumed that individuals who migrated for a family reason were married before migrating and these individuals were excluded from the sample. There remains in the sample only immigrants who declared to have migrated for job or other reasons.

It worth mentioning that given the methodology for this analysis, the most appropriate dataset would be a cross sectional set. The available data is a pool of cross sections with a subsample of panel. The analysis relies in the fact that the sample is randomly selected.

Further on, many examples of analysis include information on number of children. The information is not available in the questionnaire; therefore it is not included in the regression.

## 6. Analytical Strategy

### 6.1. Econometric Framework

The hypothesis in question is to determine whether intermarried immigrants have better outcomes in the labor market, compared to the endogamously married. In order to estimate the effect of intermarriage on earnings, the equation employed for the analysis will be the Mincerian equation of earnings (Mincer 1974):

(1) $$\ln Wage_i = \beta_0 + \beta_1 Intermarried + X'_2 \beta_2 + \varepsilon_i$$

Where, lnWage is the natural logarithm of the yearly salary earnings divided by the average weekly hours worked. Intermarried is the variable of interest, which is a dichotomic variable, equaling 1 when an individual is intermarried and 0 otherwise, $\beta_1$ is the coefficient of interest and constitutes the intermarriage premium. $X'_2$ includes all the other covariates that determine earnings, explained in the variables subsection.

It must be highlighted that intermarry is not exogenous. Intermarriage is not a random event and it occurs based on unobservable that are correlated to the dependent variable.

Unobservable variables that are valued in the marriage market are also valued in the labor market. These skills can be ambition, physical appearance, communications skills or knowledge of the local customs (Kantarevic, 2005). Estimating the earnings equation without taking into account the endogeneity of intermarriage would bias the OLS estimates.

In order to take into account the endogeneity of intermarriage, the methodologies used in the literature are mainly fixed effects and

instrumental variables, however individual fixed effects compares never married to intermarried individuals and the estimates might not deliver the coefficient of interest, since it is commonly known in literature that the act of marrying has a positive effect on earnings, therefore, this procedure might overvalued the effect of intermarriage.

The first step in literature when estimating the intermarriage premium is to estimate an ordinary least squares regression, which delivers the raw premium and tests the Productivity Hypothesis. The following step is to analyze whether the intermarried are positively/negatively selected into intermarriage. This part of the procedure requires adopting a methodology that accounts for endogeneity of intermarriage. The methodology adopted in this work is instrumental variables which account for the endogeneity of intermarriage.

### 6.2. The variables

In order to endogenize the intermarriage variable, first it is needed to identify possible factors that might affect the decision to intermarry. In literature, there are mainly three factors that affect the marrying decision. First, individual preferences; second, the influence of third parties and third, constrains of the marriage market (Kalmijn, 1998). The instruments commonly used in literature are given by sex ratio that is the number of group members of the opposite sex divided by the group members of the same sex (Gevrek, 2009). However, in order to be a valid instrument the variable should respect two assumptions. First it should be correlated with the interest variable and second, it should not be correlated to the dependent variable.

The instrument sex ratio is reflecting the marriage market constraint as it captures the competition for a spouse from the same ethnic group in the local marriage market. A smaller ratio indicates higher competition for marrying some one of the same ethnic group. In the same manner, a lower

ratio indicates that the probability to marrying endogamously is higher. This is the local marriage market constrain.

(2) $$Sratio_m = \frac{N_f^j}{N_m^j}$$

Formula (2) and (3) indicate sex ratio, where *N* indicates the number of individuals, from the cell *j* of ethnic group in a specific region, of gender *m* (male) or *f* (female).

(3) $$Sratio_f = \frac{N_m^j}{N_f^j}$$

In order for the sex ratio to be an appropriate instrument for intermarriage it should respect the two assumptions. First a correlation with the variable of interest and secondly it should not be correlated with the dependent variable (or any of its other determinants), that is the exclusion restriction.

Sex ratio reflects the relative group size of a gender in the same ethnic group. The first assumption seems respected since the competition in the local marriage market is likely to affect the intermarrying decision positively.

The second assumption is that it should not be correlated to the dependent variable. There are not obvious reasons to think that this assumption is not respected. Therefore, sex ratio seems to be an appropriate instrument for the intermarriage variable.

(4) $$prob_m = \frac{N_f^j}{N_f}$$

Formula (4) and (5) indicate the group size, or the probability for endogamous marriage, where *N* indicates the number of individuals, from the cell *j* of a specific ethnic group in a specific region, of gender *m* (male) or *f* (female).

(5) $$prob_f = \frac{N_m^j}{N_m}$$

The second instrument is given by the group size, which is the number of immigrants of the opposite sex relative to the whole population of the opposite sex (Gevrek, 2009). The logic of this instrument is that the higher the ratio, the higher the probabilities of marrying someone from the same ethnic group. This instrument is acting from two sides, one is the local marriage market constraint reflected by the ratio, second, the third party influence, a larger number of members from its own group might indicate more influence of third parties in the marriage decision, however this might also depend on the religion of the ethnic group and on how familistic is their culture.

When the two assumptions are considered for the instrument, group size i.e., the instrument must be correlated with intermarriage but uncorrelated to earnings. The exclusion restriction might not be convincing. Since when the local marriage market is composed by mainly individuals from the same country of origin as the immigrant, it might still have an impact on their salary. A higher number of group members from the same ethnic group might indeed have a positive effect on the earnings of the immigrant, this through a network or because bigger groups are more assimilated in host societies. Therefore the exclusion restriction for the instrument of group size is doubtful.

The instrument used in this exercise is the sex ratio since there are not reasons to think the exclusion restriction is not respected and a correlation with intermarriage is logic.

One of the instruments traditionally used in the literature when considering intermarriage as endogenous is the sex ratio. However there are two strong assumptions that are taken into account, given the structure of the dataset. The first one is that the sex ratio over the whole country is the same; this assumption to my advice presents some weaknesses, since it is more likely that groups of immigrants, from the same origin concentrate in specific areas of the country. The second assumption is that the sex ratio is the same in the time of the survey is the same at the time of marriage.

These assumptions are considered when lack of information of structural factors is missing.

The instrument, sex ratio has been formulated as the individuals of the opposite sex from the same group, the defined by the linguistic distance, over the individuals from the same sex, in the same group. This is to indicate the competition in the marriage market and the logic behind is that the higher the ratio the more the probabilities that a person marries someone from the same group of origin. As stated previously, literature traditionally assumes that the sex ratio is the same all over the country. However in the dataset in use it has been evidenced that there are different concentration of immigrants from different groups per area, therefore, in this case the instrument has been formulated taking into account the area of residence of every individual. Where five areas have been defined: The first area is the north east; the second are is the North West; a third area is the center; a fourth is the south of Italy and by last the islands composed the fifth area.

It might be argued that individuals do not face the same structural factors when marrying; therefore it would be optimum to observe the moment of marriage and assign the sex ratio at the moment of marriage. The biggest difficulty is in distinguishing individuals who arrived being married, since this could bias the estimates, since the structural factors in the origin country are certainly different from those found in the host country. This information is not available in the dataset. However, according to figures from the United Nations, age at first marriage in Italy in 2011 is 33.8 for men and 30.8 for women (United Nations Economic Commission for Europe "Mean age at first marriage by sex", accessed the 21st May 2015), while the average age at migration is around 25 years. This might not directly indicate that people who marry are exposed to the same structural factors, however it might diminish part of the weakness, in the instrument. Further on, according to the dataset in use, only 15% of the individuals who indicated a reason of entry have declared a family reunification as the reason of arrival into the country, while the 82% declared to have migrated

for job reasons. Individuals who entered the country for family reasons were excluded from the sample, at the cost of reducing the observations.

Even if information of moment of marriage was available relationships usually start many years before marriage, therefore, the assumption that structural factors being the same for everyone at the moment of marriage, even if still valid might not perfectly hold.

However, given the restrictions of the available information, it has been attributed that the structural factors in the marriage market were the same at the moment of the survey and at the moment of the marriage.

The dependent variable, the natural logarithm of wages, has been obtained using information on net, annual salary earnings and on information of average weekly working hours. Wages have been divided in average weekly hours worked, applying the natural logarithm, afterwards. In this way, the earnings are taking into account differences in hours worked that might among the individuals.

The traditional variables included in the equation of earnings are: education (edu), experience, where age is used as a proxy. Because of the functional form it also includes the quadratic term of age (age2) (Mincer, 1974)

The variable indicating the degree of education has been obtained aggregating the information of studies of the individuals in the questionnaire into 4 categories, the variable is increasing, in this way the variable equals 1 if the individual has only a degree of primary school or if the individual has not obtained any degree of education; the variable equals 2 when the individual has only a secondary degree. In this category have been included individuals with a technique degree, which degree however requires a total of 12 years of schooling. A third category is composed by individuals with a Bachelor degree and a last group includes individuals with postgraduate studies. No information on individuals with higher degrees has been provided in the questionnaires.

The other covariates have been formulated as follows:

The variable for identifying immigrants has been obtained in first place exploiting the place of birth, in this way when a person is born abroad is considered an immigrant. The questionnaire contains information on citizenship, however this information has not been used to identify immigrants, because the law in Italy allows for who has an Italian ancestor to obtain the Italian citizenship, in this way many immigrants do have the Italian citizenship.

A further criteria to distinguish foreigners is the information on year of arrival, in this way when someone has provided information on year of arrival to the country, the individual has been included in the immigrants group.

A dummy variable to capture the year effect have been generated for each year of study, that is, for each year where the questionnaire has been conducted. And a dummy that captures the effect of the crisis, in this way the variable equals one if the year is 2002, 2004 or 2006 and zero otherwise.

The intermarriages variable is a dichotomic variable equaling one when the individual is intermarried and zero otherwise, this one is present only for the foreign born. In order to compare the outcomes a variable for foreigners that are endogamously married has been calculated, the latter is a dichotomic variable, which is one for individuals that are endogamously married and zero otherwise. The variable for natives who are endogamously married is a dummy variable equaling one when a native is endogamously married and zero otherwise, this was calculated to compare the different outcomes on earnings.

In order to isolate any effect on obtaining the Italian citizenship on earnings, a variable indicating when an individual possesses the Italian citizenship has been calculated, the latter is a dummy variable equaling one when the individual possesses the Italian citizenship and zero otherwise.

The variable indicating the years since migration has been created subtracting the year of arrival to the year when the survey was conducted. The drawback of this variable is that only a small portion of the individuals have actually answered. A total of 1,436 individuals have provided information on year of arrival, which reduces the sample dramatically on the regressions.

The Central Bank of Italy restricts the distribution on information about place of birth. However, the bank accepted to provide information on place of birth when grouping the observations in a maximum of 4 groups. In this way 4 groups were created, in a way to exploit the group effect and the linguistic distance. In this manner, a group has been created for individuals born in a country which official language or language mostly diffused has the highest proximity to the Italian language, that is, countries with an official language that presents Latin roots, this group contains most of the countries in Latin America, some countries in Africa and in the Southern Europe. A second group, with a medium proximity to Italian language has been created for individuals born in a country where a Latin alphabet is in official use, but the where the official language has no Latin roots. In order to exploit the group effect this group has been divided into two subgroups, a first one with countries with higher income and a second group, with countries presenting lower income. The subgroup of individuals with higher income countries is mainly composed by countries with Germanic languages, from Northern Europe, Oceania and America, countries with typically high income (GDP). The second subgroup is composed by all the other countries that do not have official languages with Latin roots, but where the Latin alphabet is still in use, most of these countries are from Eastern Europe, Caribbean and Africa, countries with typically lower income compared to the Germanic ones.

A third group was composed with individuals coming from countries where a Latin alphabet is not in use and the language presents the least proximity to the Italian language, the individuals in this group come mainly from Asia and East Europe.

Four different dummy variables have been created to distinguish the four different groups, the dummies are 1 when the individual is belonging to that specific group and zero otherwise.

Finally, a variable to distinguish the linguistic distance from the official language to the Italian language has been created. This variable takes into account the official languages in the country of birth or the widely diffused languages when an official language has not been formally recognized. When an immigrant comes from a country that has more than one official language, the individual has been placed in the group with the language with highest proximity to Italian, since it might be more likely that the individual decides to migrate to Italy when he is more knowledgeable of a language closer to the Italian. The procedure on creating this variable has followed the guidelines of Helgertz, J., (2013) when the author analyzed the effect of the linguistic distance of immigrants' language knowledge to the Swedish language. The variable of linguistic distance has 3 scales, it equals 1 when the official language has Latin roots indicates more proximity, it equals 2 when the official language has not Latin roots, but a Latin alphabet is in use, indicating medium proximity and finally the variable equals 3 when the official language in the country of birth has not Latin roots and Latin alphabet is not on use, this indicates less proximity to Italian language.

The variable linguistic distance, measures *i*) the linguistic distance to Italian language and *ii*) the ethnic relatedness. Given the availability of information and the number of observations linguistic distance groups individuals in three categories: *i*) Low linguistic distance (High ethnic relatedness); *ii*) Medium linguistic distance (Medium ethnic relatedness) and *iii*) High linguistic distance (Low ethnic relatedness).

Contrary to some examples of literature (e.g., Meng & Meurs, 2009), A regression that models the determinants of intermarriage has not been estimated. The reason is that it is not easy to distinguish which variables could determine intermarriage which has not an effect on marriage at the same time (Gevrek, 2009).

## 7. Results

The first regression gives the results of traditional variables used in the Mincer (1974) equation; additionally to the effect of being an immigrant in Italy, the equations include also a variable controlling for language ability, which is present also for the natives. Equation 1 in table 1 shows that the coefficients of variables education, age (as a proxy of experience) and language are positive and significant, as expected. The coefficient of the immigrant variable is negative and significant; it indicates that in average an immigrant earns around 13% less than a native, even after controlling for education, experience, language ability and the gender effect.

When considering the effect of being an immigrant separately for man and women in equation 2 and 3, respectively. It is found that the effect of being a female immigrant is even more penalizing, since it is associated with an 18% of fewer earnings compared to a native woman, after controlling for traditional variables and language ability. The effect of being a male immigrant penalizes earnings by around 10%. Traditional variables and language are positive and significant also for the male. These results could be interpreted in several ways. First immigrants' human capital could suffer devaluation and not be recognized; the human capital acquired in the country of origin could not correspond to the host country needs. It is argued in literature that at the moment of arrival, the human capital is devalued and a revaluation can occur only upon the adjustment of language proficiency, a better knowledge of local job searching strategies, and upon other events which are part of the economic integration in the host society. Therefore, it could also be that the process of economic integration could not have been maturated yet. Furtherly, the position of immigrants could lag behind respect to natives in the labor market in non-observable ways; therefore this result could be determined by unobservable variables.

Another possible reason is that there could be discrimination against the immigrants in the labor market, in a survey conducted by the commission of integration of immigrants 16% of respondents declared that

would not hire an immigrant if they should hire someone (Allasino, Reyneri, Venturini & Zincone, 2004).

However, according to the segmentation theory, assimilation could vary across ethnic groups, therefore, in order to analyze if this effect could be due to the ethnic relatedness, in the next test; the variable for linguistic distance is included, capturing the effect separately for men and women. The coefficient of the immigrant variable is still negative, and however, it loses significance in the male and female sample. The coefficient of linguistic distance is significant in the female sample, while in the male sample it is negative but not significant. The effect of linguistic distance outweighs the effect of being an immigrant in the female sample (in equation 5). Therefore it is found that the negative effect of being an immigrant, for a woman, could be associated to the linguistic distance, or ethnic relatedness.

**TABLE 1: Immigrant effect**

| VARIABLE | (1) Full sample | (2) Only male | (3) Only female | (4) With ling dist male | (5) With ling dist female |
|---|---|---|---|---|---|
| edu | 0.307*** | 0.293*** | 0.324*** | 0.264*** | 0.296*** |
| | (0.00942) | (0.0127) | (0.0141) | (0.0169) | (0.0187) |
| age | 0.0621*** | 0.0604*** | 0.0641*** | 0.0591*** | 0.0712*** |
| | (0.00313) | (0.00399) | (0.00505) | (0.00537) | (0.00674) |
| agesq | -0.000540*** | -0.000533*** | -0.000545*** | -0.000514*** | -0.000626*** |
| | (3.73e-05) | (4.75e-05) | (6.01e-05) | (6.43e-05) | (8.06e-05) |
| frg | -0.137*** | -0.106*** | -0.185*** | -0.0822* | -0.0883 |
| | (0.0134) | (0.0173) | (0.0213) | (0.0443) | (0.0563) |
| sex | 0.125*** | | | | |
| | (0.00946) | | | | |
| ita | 0.0282*** | 0.0263*** | 0.0322*** | 0.0283*** | 0.0242*** |
| | (0.00328) | (0.00423) | (0.00520) | (0.00552) | (0.00674) |
| ling_dist | | | | -0.00850 | -0.0714** |
| | | | | (0.0222) | (0.0284) |
| Constant | 3.439*** | 3.658*** | 3.296*** | 3.716*** | 3.286*** |
| | (0.0700) | (0.0881) | (0.112) | (0.118) | (0.147) |
| Observations | 11,796 | 6,694 | 5,102 | 3,834 | 2,853 |
| R-squared | 0.223 | 0.209 | 0.237 | 0.198 | 0.240 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The result of these regressions is not the main objective of this thesis, but it might give significant hints on the fact that there is still a long

way to go for the process of integration of immigrants in Italy, particularly for those whose language and culture is more distant to the natives.

The hypothesis is that intermarriage accelerates the process of integration, through a positive effect on earnings.

**TABLE 2: Raw intermarriage premium, full sample**

| VARIABLES | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| edu | 0.127*** | 0.142*** | 0.138*** | 0.137*** |
| | (0.0293) | (0.0291) | (0.0292) | (0.0292) |
| age | 0.0579*** | 0.0553*** | 0.0556*** | 0.0558*** |
| | (0.00947) | (0.00937) | (0.00933) | (0.00934) |
| agesq | -0.000627*** | -0.000585*** | -0.000584*** | -0.000585*** |
| | (0.000119) | (0.000118) | (0.000117) | (0.000117) |
| ysm | 0.00573*** | 0.00494*** | 0.00575*** | 0.00576*** |
| | (0.00175) | (0.00173) | (0.00176) | (0.00182) |
| im | -0.0587** | -0.0134 | -0.00549 | -0.0774 |
| | (0.0268) | (0.0276) | (0.0275) | (0.0716) |
| sex | | 0.167*** | 0.154*** | 0.154*** |
| | | (0.0287) | (0.0286) | (0.0287) |
| ita | 0.0161* | 0.0216*** | 0.0253*** | 0.0256*** |
| | (0.00837) | (0.00832) | (0.00839) | (0.00842) |
| bc | | | 0.0971** | 0.130*** |
| | | | (0.0380) | (0.0480) |
| north | | | 0.107*** | 0.108*** |
| | | | (0.0292) | (0.0292) |
| d1 | | | 0.00458 | 0.00562 |
| | | | (0.0321) | (0.0321) |
| d2 | | | 0.00537 | 0.00479 |
| | | | (0.0424) | (0.0425) |
| d3 | | | -0.0255 | -0.0253 |
| | | | (0.0386) | (0.0386) |
| im3 | | | | 0.0953 |
| | | | | (0.0859) |
| im4 | | | | 0.0869 |
| | | | | (0.0835) |
| im5 | | | | 0.0758 |
| | | | | (0.0799) |
| Constant | 4.068*** | 3.915*** | 3.792*** | 3.781*** |
| | (0.198) | (0.197) | (0.200) | (0.201) |
| Observations | 1,409 | 1,409 | 1,409 | 1,409 |
| R-squared | 0.082 | 0.104 | 0.118 | 0.119 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In order to analyze the solely intermarriage effect and control for other variables that are positively associated with economic integration of

the immigrants. Table 2 presents the estimates. The first equation, model 1, indicate a small coefficient of the variable intermarried, negative and significant only at the 5%, however when the variable sex is included (model 2), the variable loses significance, meaning that the gender effect outweighs the intermarriage effect. Model 3 includes group dummies, controlling for ethnic group effect, however none of these variables are significant. Interactions that capture the effect of intermarriage per year have been included in model 4, in order to control for a variation in the returns to the specific skills acquired with intermarriage. However, none of these are significant and heir coefficients appear negative. The variables: education, age, sex, years since migration and language are positive and significant in all the equations of table 2 having also the expected sign.

Table 3 presents the regression, splitting the sample in high earnings and low earnings further on the sample is divided also per gender. In this way is possible to disentangle the effect of intermarriage.

The sample with higher earnings (1), the variables, sex and years since migration have a positive effect and significant, while the variables age and intermarried are negative and non-significant.

The regression for the sample with lower earnings (2) has different results.

The variable education is positive and significant only for the high earnings sample, particularly accentuated for the males, and positive but not significant for the females with high earnings, furtherly, it is observed that the variable years since migration is positive and significant in all the equations for the samples with high earnings, this could be interpreted as a result of the assimilation i.e., revaluation of the human capital of the immigrant. The age variable has a negative sign and it is not significant, the intermarriage variable has a negative sign for male and for the full sample with high earnings.

The low earnings sample show that age effect is negative and particularly accentuated for female, while for male is not positive and neither significant. The intermarriage variable appears positive but not significant for all the equations of the low earnings sample.

**TABLE 3: Intermarriage premium per income and gender**

| VARIABLES | (1) High earnings | (2) Low earnings | (3) Male high earnings | (4) Female high earnings | (5) Male low earnings | (6) Female low earnings |
|---|---|---|---|---|---|---|
| edu | 0.110*** | 0.0702 | 0.116*** | 0.0699 | 0.0371 | 0.0867 |
| | (0.0197) | (0.0481) | (0.0205) | (0.0556) | (0.0827) | (0.0584) |
| age | -0.00488 | 0.0413*** | -0.00516 | -0.00428 | 0.0352 | 0.0494*** |
| | (0.00790) | (0.0135) | (0.00815) | (0.0259) | (0.0215) | (0.0176) |
| agesq | 0.000112 | -0.000461*** | 0.000107 | 0.000130 | -0.000416 | -0.000540** |
| | (9.74e-05) | (0.000171) | (0.000102) | (0.000302) | (0.000279) | (0.000219) |
| sex | 0.0712*** | -0.148*** | | | | |
| | (0.0255) | (0.0438) | | | | |
| ysm | 0.00667*** | 0.00386 | 0.00651*** | 0.00662*** | 0.00281 | 0.00550 |
| | (0.00120) | (0.00285) | (0.00150) | (0.00229) | (0.00464) | (0.00365) |
| im | -0.00359 | 0.0476 | -0.0202 | 0.0629 | 0.0360 | 0.0446 |
| | (0.0206) | (0.0432) | (0.0215) | (0.0624) | (0.0717) | (0.0544) |
| Constant | 5.655*** | 4.432*** | 5.738*** | 5.634*** | 4.523*** | 4.196*** |
| | (0.167) | (0.279) | (0.168) | (0.541) | (0.436) | (0.358) |
| Observations | 741 | 695 | 592 | 149 | 294 | 401 |
| R-squared | 0.136 | 0.055 | 0.135 | 0.153 | 0.015 | 0.054 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In order to identify an effect that might be differing among the groups Table 4 shows the regressions when the sample is divided by ethnic group (linguistic distance) and when possible by income of the origin country. Non significance is found for intermarriage premium and the sign of the coefficient for the groups is negative, except by the group with medium linguistic distance and low income, where it is positive but not significant. Education, age and sex are positive and significant for low and high distance groups. The variable years since migration is significant only for the high distance group. In the same manner language is important only for the low distance group.

**TABLE 4: intermarriage effect per ethnic group**

| VARIABLES | (1) Low ling dist | (2) Med ling dist | (3) High ling dist |
|---|---|---|---|
| edu | 0.148*** | 0.0470 | 0.161*** |
| | (0.0481) | (0.0927) | (0.0607) |
| age | 0.0780*** | 0.0316 | 0.0679*** |
| | (0.0166) | (0.0221) | (0.0199) |
| agesq | -0.000883*** | -0.000317 | -0.000725*** |
| | (0.000213) | (0.000284) | (0.000248) |
| sex | 0.185*** | 0.141* | 0.273*** |
| | (0.0469) | (0.0730) | (0.0699) |
| ysm | 0.00336 | 0.00468 | 0.00984* |
| | (0.00334) | (0.00608) | (0.00503) |
| im | -0.00431 | -0.00572 | 0.0621 |
| | (0.0448) | (0.0706) | (0.0698) |
| ita | 0.0273** | -0.0178 | 0.0199 |
| | (0.0132) | (0.0195) | (0.0178) |
| Constant | 3.456*** | 4.902*** | 3.442*** |
| | (0.344) | (0.478) | (0.437) |
| Observations | 491 | 190 | 255 |
| R-squared | 0.121 | 0.068 | 0.176 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The variable intermarriage is not significant even when the sample is furtherly divided per group and gender. Further on, in this case most of the traditional variables lose significance, probably due to the fact that the observations in some groups decreased.

**TABLE 5: Intermarriage per group and gender**

| VARIABLES | (1) Low ling dist male | (2) Low ling dist female | (3) Med ling dist male | (4) Med ling dist female | (5) High ling dist male | (6) High ling dist female |
|---|---|---|---|---|---|---|
| edu | 0.151** | 0.0793 | 0.101 | -0.0252 | 0.182** | 0.132 |
| | (0.0587) | (0.0856) | (0.118) | (0.152) | (0.0820) | (0.0895) |
| age | 0.0781*** | 0.0482 | 0.0287 | 0.0284 | 0.0169 | 0.145*** |
| | (0.0202) | (0.0309) | (0.0275) | (0.0385) | (0.0268) | (0.0304) |
| agesq | -0.000881*** | -0.000506 | -0.000269 | -0.000306 | -5.29e-05 | -0.00166*** |
| | (0.000254) | (0.000404) | (0.000353) | (0.000494) | (0.000349) | (0.000362) |
| ysm | -0.00130 | 0.0152** | 0.00371 | 0.00262 | 0.00616 | 0.00736 |
| | (0.00414) | (0.00594) | (0.00776) | (0.0100) | (0.00690) | (0.00764) |
| im | -0.0497 | 0.112 | -0.0893 | 0.149 | 0.0331 | 0.0643 |
| | (0.0567) | (0.0768) | (0.0924) | (0.115) | (0.0891) | (0.111) |
| ita | 0.0497*** | -0.00782 | -0.0336 | 0.00692 | 0.00175 | 0.0446 |
| | (0.0168) | (0.0212) | (0.0273) | (0.0284) | (0.0230) | (0.0285) |
| Constant | 3.529*** | 4.247*** | 5.118*** | 4.900*** | 4.758*** | 1.842*** |
| | (0.424) | (0.604) | (0.607) | (0.772) | (0.573) | (0.655) |
| Observations | 311 | 180 | 127 | 63 | 159 | 96 |
| R-squared | 0.121 | 0.129 | 0.066 | 0.069 | 0.130 | 0.283 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6, shows the results of the estimations when the sample is divided per ethnic group (linguistic distance), gender and by educational level.

After dividing the sample by group, gender and educational level there is found a positive and significant effect of intermarriage on the earnings of individuals from countries where the linguistic distance is the largest, where individuals have potentially higher benefits when marrying a native, who have higher education, the results are reported in Table 6. The effect of intermarriage in the individuals outweigh the effect of traditional variables such as education and experience, (experience is significant in the equation 2 at the 10%), at the same way years since migration is significant only in equation 2 at the 5% of significance level and the language is not significant in any of the equations, the sign of the language variable appears negative for the female sample.

**TABLE 6: Intermarriage per group, education and gender**

| VARIABLES | (1)<br>High ling. dist high edu male and female | (2)<br>High ling. dist high edu male | (3)<br>High ling dist high edu male |
|---|---|---|---|
| edu | 0.668 | 0.643 | 0.731 |
| | (0.419) | (0.538) | (0.611) |
| age | 0.212* | 0.155 | 0.194 |
| | (0.114) | (0.315) | (0.346) |
| agesq | -0.00244* | -0.00121 | -0.00169 |
| | (0.00132) | (0.00376) | (0.00416) |
| ysm | 0.0415** | 0.00107 | 0.00306 |
| | (0.0156) | (0.0390) | (0.0414) |
| im | 0.464** | 1.287** | 1.168* |
| | (0.225) | (0.439) | (0.560) |
| ita | 0.0351 | -0.151 | -0.122 |
| | (0.0514) | (0.225) | (0.249) |
| north | | | -0.162 |
| | | | (0.426) |
| Constant | -1.556 | 0.583 | -0.535 |
| | (3.158) | (8.988) | (9.899) |
| Observations | 37 | 16 | 16 |
| R-squared | 0.371 | 0.669 | 0.675 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

From the sample in equations 1, from Table 6, 21 individuals out of 37 are intermarried. Considering the male sample equation 2 of the same Table, 4 individuals out of 16 are intermarried.

Further on, in the next equation the variable intermarriage is considered as endogenous, the equation and includes the instrument sex ratio in the regression. The results of Table 7 show a decrease in the coefficient of the variable intermarriage for the full sample, in equation 1. This might indicate a positive selection into intermarriage. When considered the sample with high linguistic distance and high education the coefficient of intermarriage increases, indicating a negative selection into intermarriage of the subgroup.

Negative selection indicates that the unobserved factors that might be correlated to the labor and marriage market are negatively correlated to the marriage and labor market.

**TABLE 7: Instrumental variables estimation**

| VARIABLES | (1) Full sample | (2) High dist led | (3) High dist led m |
|---|---|---|---|
| im | -0.420*** | 1.947 | 2.962 |
| | (0.154) | (2.949) | (5.040) |
| edu | 0.130*** | 0.794 | 0.729 |
| | (0.0358) | (0.683) | (0.701) |
| age | 0.0620*** | 0.482 | -0.0777 |
| | (0.0119) | (0.599) | (0.794) |
| agesq | -0.000655*** | -0.00561 | 0.00215 |
| | (0.000152) | (0.00710) | (0.0110) |
| ysm | 0.00509** | 0.0795 | -0.0486 |
| | (0.00241) | (0.0879) | (0.156) |
| ita | 0.0151 | 0.0444 | -0.539 |
| | (0.00999) | (0.0810) | (1.194) |
| sex | | 0.698 | |
| | | (1.019) | |
| Constant | 4.128*** | -8.998 | 7.311 |
| | (0.255) | (16.72) | (22.90) |
| Observations | 970 | 37 | 16 |
| R-squared | | | 0.134 |

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

## 8. Discussion

This result might be somewhat surprising when the theory of Becker is considered, since The Productivity Hypothesis argues that though specialization and the division of labor within the family, the man can accumulate more human capital (Becker 1973). Since, probably endogamous families with largest distance to Italian language have a more rigid division of labor within the family, this can be outweigh only by the credit constraint theory, in which mixed families allows a male to accumulate human capital, which entails a positive effect on the labor outcomes. Further on, as stated in literature higher education might positively influence individuals to explore beyond the enclaves if their own ethnic group.

The positive intermarriage premium is attributable to a faster rate of assimilation, which happens because of the marriage. The variable is more accentuated when solely the male sample is considered.

In the literature of discrimination to immigrants in Italy, it is found that Muslim communities are discriminated against, which was fostered after the twin towers attack. In fact, one third of Italians declared to have more fears and distrust towards Arabic and Muslims, after the twin towers attack (ISPO, October 2001). It is foreseen that the greatest component of the group with the largest linguistic distance to Italian come from a Muslim country. The probabilities are high, since Moroccans have always been one of the biggest minorities in Italy, (ISTAT, Census 2001 and Census 2011). That being said, intermarriage could signal the labor market and reduce the discrimination probabilities against the group, resulting in higher earnings.

The results are in coherence with the findings of Sweden, where intermarriage premium is found to be accentuated for individuals from the North Africa and Middle East areas (Dribe & Lundh, 2008). Individuals that could potentially have bigger room for benefits from intermarriage.

Intermarriage rate also measures the assimilation between immigrants and the natives; it is broadly recognized as the ultimate measure of social cohesion. Therefore, an important conclusion emerges from the trends. There is a natural trend to increase intermarriages rate, that is, assimilation between natives and immigrants is naturally increasing.

The rate is more than 10 times higher for native man than for native woman. And with its variations, the immigrants' intermarriage rate indicates a greater acceptance of the host society; in this case women have higher rates of intermarriage than men, which vary depending on the origin country.

## 9. Conclusions

This master thesis has investigated the intermarriages effect on economic integration of immigrants. More specifically, it concentrated on the impact of intermarriage on the earnings of immigrants in Italy compared to the co-ethnically married counterparts. Italy has been chosen as the target country of this study since it usually attracts unregulated immigration due to its geographical location and the existence of relatively high informal economy.

Instrumental variables are applied on Cross-sectional data from the Income Survey (*Il Bilancio delle Famiglie Italiane*) which has been carried out within 2004 and 2012.

There is not evidenced an intermarriage premium for the full sample, further on confirmed with the IV estimates where individuals positively select into intermarriage.

The observations have been divided in different groups based on the education, ethnic relatedness and gender. Each group has been studied individually to study specific characteristics that could boost intermarriage benefits. As the result, it has been shown that there is a positive and significant effect of intermarriage on the earnings of individuals with higher

education from countries where the linguistic distance is the largest. The results are sound with empirical findings where individuals have potentially higher benefits when marrying a native. The premium is more accentuated when considering only the male sample. This might indicate that intermarriage fosters the assimilation rate in this category of individuals.

However the number of the sample is considerably small. Therefore the result is not deterministic and a deeper study of the groups is strongly advised.

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