THE EQUALISING POWER OF INTERNAL IMMIGRATION AND THE DESERTIFICATION PROCESS OF SOUTHERN ITALY*

by Giorgio Liotti** and Salvatore Villani***

1. A Brief Literature Review on the Effects of Migration on Inequality

The phenomenon of migration has been studied in depth by researchers from various disciplines (geographers, demographers, sociologists, economists, lawyers), both from a theoretical and empirical point of view. In the economic field, numerous studies have analysed its causes, categorisations and effects, especially those brought about on the labour market, on public finances and on the economic growth process. With regard to the effects of the phenomenon, economic literature has shown that immigration allows a more efficient allocation of resources and, in this way, an improvement of the social welfare. This improvement, however, has often been considered insignificant or, otherwise, of very small scale. For this reason, the economic debate has focused on issues which concern principally the redistributive impact of immigration, rather than its allocative efficiency.

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1 For a broad review of these studies and the frontier issues related to the so-called Migration Economics, see Bodvarsson, Van den Berg (2009 e 2013), Nijkamp et al. (2012), Constant, Zimmermann (2013) and Borjas (2014).

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A significant part of the literature has focused on the relationship between the mobility of the production factor labour and the inequalities in the income and wealth distribution. In fact, it is generally accepted that the migratory phenomenon is closely connected to the issues of inequality, considered in its widest meaning. Consequently, a remarkable amount of studies have examined these kinds of effect, focusing their attention on several types of migration and inequality.

Some of these studies have mainly analysed the impact of out-migration from the source rural areas of poor or developing countries on various measures of inequality and concluded (Todaro, 1968, 1969 and 1971; Harris, Todaro, 1970; Johnson, 1971) that rural-urban migration often works as a “rebalancing force which equalises the expected wages of urban and rural areas”. This would occur, according to the famous model of Harris and Todaro (1970), because the expected income gaps between urban and rural areas are one of the reasons (determinants) why the decision to migrate is made. Subsequent studies (Lipton, 1980) have shown, in fact, that income inequality is a leading cause for rural-urban migration and that it is in turn influenced by migration flows towards the cities (townward emigration), as well as by their “after-effects” (remittances and so-called “return migration”). Regarding this issue, Lipton’s analysis relating primarily, but not exclusively, to the urban and rural areas of India is particularly enlightening. It shows that these phenomena can result in an increase in inequality among individuals and among families within and among villages.

Thereafter, additional studies have in many cases confirmed Lipton’s theories, but many others have also led to different conclusions (cf., among others, Stark, Taylor, Yitzhaki, 1986, and Taylor, 1992, regarding this issue). One of the reasons for these differences is due to the diversity in the research methodologies adopted (the specific economic issue which has been proposed, the statistical and econometric techniques utilised for estimating the income and the income distributions and so on). For example, if the remittances are considered as an exogenous variable, which is not af-

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2 A review of the economic studies on the multidimensional nature of inequality and poverty is contained in a recent research by the Bank of Italy by Aaberge and Brandolini (2014). For a broad study on the socio-cultural aspects of the various kinds of inequality, see Therborn (2013).

3 A collection of case studies on the particular kinds of relationships which can be found between migratory phenomena and inequalities is contained in the World Development Report written by Black, Natali and Skinner (2005).

4 Regarding this, other forms of inequalities could also be considered as determinants for this phenomenon. For example, the effect produced by the so-called “inequality of opportunities” cannot be underrated, as noted by Stiglitz (1969) in his well-known work on rural-urban migration, labour supply and the wage gaps between the rural and urban sectors.
fected by a retro-effect due to economic growth (which should be considered as determined by and, at the same time, a determinant of the remittances) the economic issue that we should consider is how they, totally or marginally, affect the income distribution observed in the source community of the migratory flow. However, if the remittances are considered as an endogenous variable and as a potential replacement of the household incomes in the source country, the economic issue which would arise would be based on the comparison between the observed distribution of income and the one that would be obtained if migration did not occur. A study on Nicaragua (Barham, Boucher, 1995), using both methods, suggests that, when the remittances are considered exogenous, they reduce income inequalities, whereas they contribute to the increase of income inequalities if they are considered an endogenous variable.

Similarly, the numerous studies on the relationship between migration and income inequality in the destination countries have produced conflicting results. For example, Borjas, Freeman and Katz (1992) have shown that the growth of unskilled migration may exacerbate the income gap between more educated native workers and those less educated (workers not qualified who have left school prematurely). Subsequent research has revealed, however, that this kind of analysis could be influenced by the features of the data set utilised (Borjas, 1994) and that the impact of immigration on the income distribution in the country of destination could depend on the assumptions made by the researcher about the socio-economic characteristics of immigrants, the structure of the production system and the public policies adopted in the field of immigration and welfare (Chiswick, 1983, 1992 and 1998; Chiswick, Chiswick and Karras, 1992; Davies and Wooton, 1992). Therefore, it is not inconceivable that immigration has a negligible or no impact on income inequality (Enchautegui, 1993; Card, 2009) or that it generates an equalising effect, namely a smoothing gaps effect, especially when the levels of education and professional experience of immigrants are very high (Kahanec and Zimmermann, 2008 and 2009). Recent studies (Docquier, Özden and Peri, 2010) show, for example, that immigration in Europe in the decade from 1990 to 2000 had a positive effect on the average wage of native workers, while the extent of wage losses determined by emigration was approximately equal to or greater than the gains generated by immigration. This phenomenon would have to convince all European governments to debate the causes and the effects of their significant emi-

5 For a more extensive analysis of the debate on remittances’ social and economic impact, see De Haas (2005 and 2007), Hernandez, Coutin (2006) and Oecd (2006), Ratha (2013).
migration rates more seriously, especially those of their highly skilled professionals.

2. Internal Migration and the Territorial Economic Imbalances: The Italian Case

The studies mentioned in the previous section clearly show that migration flows, as alleged by Galbraith (1979), can work as an effective instrument of redistribution and could continue to play this role in the future. A conscious, and even strategic, management of these flows is possible and desirable (Castles, 2007), especially observing the society’s contemporary problems “through the prism of the ‘government of life’ with a particular focus on the population as one of the foremost sites within which efforts to regulate, administer and optimize life continue to unfold today” (Villadsen and Wahlberg, 2015). We argue, however, that migration in itself would not resolve the issue of inequality. At most, it would shift this forward (Piketty, 2013), because redistribution through immigration does not exempt from previously creating a basic set of rules and institutions aimed at stimulating a major coordination and collaboration by governments, at international, national and local level, to change the present management systems of migration (in order to take into consideration the interests of migrants and their source countries and areas) and correct their redistributive effects (trying to extend to all the economic benefits and costs of migration).

Therefore, the need for additional in depth research on the economic and fiscal impact of migration and, in particular, on the effects produced by the latter on income inequalities and social mobility has become evident, espe-

6 More recently, also Livi Bacci has reminded us that migration can be a tool to exit from the poverty and a powerful factor to develop societies (Livi Bacci, 2008 and 2010). However, from the point of view of the destination countries of migration, there are several key issues, to which so far we are not able to answer, primarily because immigration is a phenomenon still poorly known and the analytical tools are fairly ineffective, at least for the lack of reliable data. These issues cannot be ignored or underestimated. Governments and institutions should strive to give an answer to the following questions: to what extent can immigration change the profile of the distribution of wealth, income and welfare? What are the “new poverties” related to immigration? Does immigration make a country more unequal? What are the “new” poverties related to immigration and what are the additional “old” poverties which the absence of migration (and the lower development) would have created? In the long term, then, solving the problem of the so-called “second generation” is crucial. It regards the people who in many cases have not performed any migration and who inherit the immigrant condition from their parents (cf. Marone, 2014, and Strozza, 2009). With the regard to this issue, as argued by Livi Bacci, “the degree of success and integration of immigrants confirms the success or failure of immigration policies” (Livi Bacci, 2008).
cially in the long run. The present paper moves in this direction, attempting to demonstrate, referring to the Italian case, how the new internal migration of population from the South to the Centre-North of the country has an equalising effect, that is to say how this phenomenon reduces income inequalities within the destination regions, thereby exacerbating economic imbalances between the richest and poorest areas. A result which cannot be underestimated, especially in light of:

- the latest data on the size of internal migration and current demographic trends, which testify that the Mezzogiorno (the poorest areas of Southern Italy) has now become an area subject “to a high risk of human and industrial desertification” and more and more dependent on the rest of the country (SVIMEZ, 2014, pp. 106-124);
- the most recent economic studies on income inequality, which clearly show how it has a negative and statistically significant impact on medium-term growth (Cingano, 2014; OECD, 2011, 2014a, 2014b e 2014c; Stiglitz, 2012; Lysandrou, 2011);
- the policy indications that can be drawn from the most recent empirical evidence on the impact of migration on the labour market, which show how “more mobility within Europe and in particular within the euro area would improve the European-wide labour market, and that means the economy too” (Jauer, Liebig, Martin, Puhani, 2014).

One of the aims of the paper is also to test the hypothesis of skilled immigration equalising, formulated recently by Kahanec and Zimmermann (2008 and 2009). We have chosen, however, to utilise single-country data at a regional level to determine the direction of the effect of immigration on income inequality, because the literature review presented in the previous paragraph clearly shows that the results of studies carried out so far depend very often on the estimation methods and the quality of the data used, on the examined sample coverage, but especially on the differences in economic, social and institutional characteristics of countries.

The paper is structured as follows: in section 2 will be developed a first exploratory analysis of the variables used in the work. In particular, in section 2.1, we will attempt to identify and study the trends that these variables have had in the time period considered, while in Section 2.2 we will describe the theoretical model developed and the results obtained through the

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7 The analysis conducted by these two economists suggests that immigration of skilled workers shows a great potential in reducing inequalities in destination countries of migration flows. A channel through which this effect would be realized is the increase in the relative wage of unskilled workers compared to that of skilled workers. The immigration of unskilled workers would produce, however, an increase in inequality and, only in exceptional circumstances, curtailments.
use of a regression analysis with panel data. In section 3 we will set out our conclusions and some policy proposals to handle migration and counteract the desertification of Southern Italy.

2.1. Internal Migration and Income Inequality in Italian Regions from 2004 to 2012

Some of the most important issues which have characterized the economic debate in Italy in recent years – especially since the outset of the economic crisis – concern the trend of income inequality, unemployment and migration.

Following the theories of Galbraith (1979), Kahanec and Zimmermann (2008, 2009) illustrated in the previous pages, this work attempts to verify whether immigration has positive redistributive effects on regional income inequality; in particular, it tests whether a positive migration balance reduces the value of the Gini coefficient in those regions which experience relevant immigration flows.

In this paragraph, we focus on the following three variables: the regional migration balance, the regional unemployment rate and the Gini index, used to measure the degree of income inequality existing within individual regions. These data were extracted from the database of the Italian Institute of Statistics (ISTAT) and reprocessed by us to make the regression analysis presented hereafter.

The choice of the 2004-2012 period is not random. We intended to analyse the relationship between the abovementioned variables at the pre-crisis time – but without going too far back in time – and the changes which have been brought about in the post-crisis period.

One result of the 2007 economic crisis has been the rise in unemployment rates. Analysing data on the regional unemployment rates, we can

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8 In accordance with the conventions adopted within the European Union, the Gini index has been calculated by assigning to each person the equivalent income of the household to which he belongs and considering the individuals as statistical units. The net household income is equal to the sum of incomes from employed and self-employed labour, those from real and financial capital, pensions and other public and private transfers, excluding personal taxes, the Municipal Property Tax named ICI (Imposta Comunale sugli Immobili) and the social contributions of employed and self-employed workers. This calculated amount does also not include transfers paid to other families (for example, the financial provision for spousal support after separation or divorce).

9 Unemployed people include people aged 15-64 who were (all three conditions must be fulfilled simultaneously): 1) without work during the reference week; 2) available for work at the time (i.e. were available for paid employment or self-employment before the end of
isolate two different situations regarding Italian regions: in the North, notwithstanding the severity of the financial crisis, the existence of a consolidated industrial sector has limited the increase of unemployment, whereas in the Central and Southern regions, the impact of the crisis on unemployment – especially for younger people – has been devastating. Figure 1 describes the trend in unemployment rates regarding the Italian regions. The Figure shows that the gap in unemployment rates between Central-Northern and Southern regions has been evident since 2004, and that this gap has grown since the economic crisis hit the Italian economy in 2007. In fact, the average unemployment rate in the South is double that of the North and this phenomenon confirms that the poorest areas of the country were affected negatively by the crisis.

It is interesting to analyse the trend of the regional Gini coefficient from 2004 to 2012. In Figure 2, we can see that the trend of Gini index and how – in general – income inequality tends to rise in the Southern regions of Italy (except for Sardegna and Abruzzo). Indeed, in Campania, Molise, Basilicata and, to some extent, Sicily, the Gini coefficient in 2012 was higher than in 2007, while for Calabria its value is similar. Conversely, the situation regarding Northern Italy is quite different: in most of the Northern regions (except for Liguria) the Gini coefficient value in 2012 is lower or similar to that of 2004.

For each region, the in-flow and out-flow migration data have been transformed, dividing them by the respective amount of population that lived in them at time $t$. This transformation allowed us to create a composite index which ranges from 0 to 1 and gave us “the regional mobility degree”, that is, the trend in the entry and exit rates of people for each examined region.

Therefore, the migration balance enables us to study the temporal dynamics of migration flows among the Italian regions. Population displacement between the South and the Centre-North of the country has been, in the past and even today, considered a very important social phenomenon in the history of contemporary Italy. Currently, the effects which this population movement has had, in the medium and long run, on the social mobility of immigrants and their families are still not clear.

The migration balance was calculated as the difference between the number of people entering and leaving a specific region, divided by its population (see below equation 1):

\[ \text{Migration Balance} = \frac{\text{In-flow} - \text{Out-flow}}{\text{Population}} \]

the two weeks following the reference week); 3) actively seeking work (i.e. had taken specific steps in the four-week period ending with the reference week to seek paid employment or self-employment), or who found a job which started within a three month period.

10 See D’Isanto, Liotti, Musella (2014).
Fig. 1 – Unemployment rates in Italian regions between 2004 and 2012
Fig. 2 – Gini coefficient in Italian regions between 2004 and 2012
\[ MB_{lt} = \frac{Inf_{lt} - Out_{lt}}{Pop_{lt}}, \quad (1) \]

where \( MB \) is the migration balance, \( Inf \) and \( Out \) represent the number of people entering and leaving the specific region \( i \), \( t \) is the time period considered in our analysis, and \( Pop \) is the population of the region considered.

The sign of the migration balance can be positive, negative or null, depending upon whether in the region \( i \) the number of immigrants is, respectively, higher, lower or equal to the number of emigrants.

Our analysis focused on the study of the relationship between the change (percentage variation) in the regional Gini coefficient and the cumulative regional migration balance in the period mentioned above (2004-2012). The two variables are built in the following way:

1) the percentage variation (CH_GINI) in the Gini coefficient is calculated as

\[ CH_{GINI_i} = \sum_{t=2004}^{2012} (Gini_{i_{t+1}} - Gini_{i_t}) \quad (2) \]

2) the cumulative migration balance (CMB) is represented by the sum of the annual migration balance for each region between 2004 and 2012:

\[ CMB_i = \sum_{t=2004}^{2012} MB_{lt} \quad (3) \]

As we can see in Figure 3, there is a negative relationship between the internal migration balance and the variation in the Gini coefficient\(^{11}\). This means that, when the migration balance is positive (that is in the specific region \( i \) the number of immigrants is greater than emigrants), the regional income inequality tends to decrease, or better the Gini index declines. This relationship seems to be systematic for almost all Northern regions, except for Liguria. For Southern ones, a positive relationship between the migration balance and the regional income inequality is detected for Basilicata, Campania and Molise (although for this last region the value of the increase in the Gini coefficient is very high), conversely, for Puglia, Calabria and Sicilia it is not consistent. It is very likely that for these three regions of

\(^{11}\) The Table 1, which we placed in Appendix, shows the relationship between the change in the Gini coefficient and the cumulative migration balance for all Italian regions.
Fig. 3 – Change in Gini coefficient and Cumulative Migration Balance

Cumulative changes in Gini coefficient = 0.153 – 0.213 Cumulative MB

\[ R^2 = 0.028 \]
Southern Italy, there are other factors which have affected the variation in
the Gini coefficient. For example, it is possible that the economic crisis has
produced a reduction in the income for both the upper and the middle clas-
ses. This situation could be determined by a reduction in the Gini coeffi-
cient within a generalised poverty situation.

2.2. Cointegration Tests and Long-Run Relationship

Following Im et al. (2003), Levin et al. (2002), Maddala and Wu (1999),
Breitung (1999) and Hadri (2000), in order to investigate whether the varia-
tes utilised in this analysis are non stationary at level and stationary at their
first-order differences, we applied some panel-data unit-root tests.

For the first five tests, the null hypothesis is that panel has a unit root
and the alternative hypothesis is that the variables are stationary. Please
note that in Hadri (2000) the process is reversed, that is, the null hypothesis
is that variables are stationary, while alternative hypothesis is that panel has
a unit root and the variables are no stationary at level.

The results of the cointegration tests confirm that almost all variables
are non-stationary at level. Table 1 shows that for the majority of tests there
is a clear evidence of non-stationarity: for Gini the non stationarity is con-
firmed by 3 of 6 tests, for Unemployment by 6 of 6, and for Migration Bal-
ance by 5 of 6.

<table>
<thead>
<tr>
<th>Tab. 1 – Panel unit root tests (a): Individual effects (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
</tr>
<tr>
<td>Gini</td>
</tr>
<tr>
<td>Mi. Balance</td>
</tr>
<tr>
<td>Unemployment</td>
</tr>
</tbody>
</table>

Notes:
(a) The tests utilized are the following: the Levin-Lin-Chu (LLC) test (Levin, Lin, Chu, 2002); The
Breitung test (Breitung, 2000); the Im-Pesaran-Shin (IPS) test (Im, Pesaran, Shin, 2003); the Fisher-
ADF and the Fisher-PP tests, defined by Maddala and Wu (1999) and Choi (2001); the Hadri test (Ha-
dri, 2000). Please note that in Hadri (2000) the process is reversed, that is, the null hypothesis is that
variables are stationary, while alternative hypothesis is that panel has a unit root and the variables are no
stationary at level.
(b) ’***’, ’**’, and ’*’ reject the null at 1%, 5% and 10% respectively.

Furthermore, the results presented in table 2 indicate that the variables
utilised are stationary in their first-order differences. Indeed, the tests con-
firm the stationarity for Gini coefficient (by 5 of 6 tests), Migration balance
(by 5 of 6 tests) and for regional unemployment (by 4 of 6 tests).
**Tab. 2 – Panel unit root tests (a): first-order differences (b)**

<table>
<thead>
<tr>
<th></th>
<th>LLC</th>
<th>Breitung</th>
<th>IPS</th>
<th>ADF</th>
<th>PP</th>
<th>HAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gini</td>
<td>-9.327***</td>
<td>-5.368***</td>
<td>-6.884***</td>
<td>133.672***</td>
<td>182.677***</td>
<td>4.010***</td>
</tr>
<tr>
<td>Mi. Balance</td>
<td>-6.405***</td>
<td>-3.107***</td>
<td>-2.896***</td>
<td>90.003***</td>
<td>134.008***</td>
<td>5.685***</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-52.326***</td>
<td>-4.897***</td>
<td>-12.890***</td>
<td>99.874***</td>
<td>26.345</td>
<td>7.100***</td>
</tr>
</tbody>
</table>

Notes:

(a) The tests utilized are the following: the Levin-Lin-Chu (LLC) test (Levin, Lin and Chu, 2002); The Breitung test (Breitung, 2000); the Im-Pesaran-Shin (IPS) test (Im, Pesaran and Shin, 2003); the Fisher-ADF and the Fisher-PP tests, defined by Maddala and Wu (1999) and Choi (2001); the Hadri test (Hadri, 2000). Please note that in Hadri (2000) the process is reversed, that is, the null hypothesis is that variables are stationary, while alternative hypothesis is that panel has a unit root and the variables are no stationary at level.

(b) ***, **, and * reject the null at 1%, 5% and 10% respectively.

Moreover, Johansen cointegration test (see table 3) shows that the variables are cointegrated and, consequently, that there is a long-run relationship among Gini coefficient, migration balance and regional unemployment rate.

**Tab. 3 – Johansen-Fisher cointegration test**

<table>
<thead>
<tr>
<th></th>
<th>No deterministic Trend</th>
<th>Linear deterministic trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>r = 0</td>
<td>58.3541***</td>
<td>51.835***</td>
</tr>
<tr>
<td>r ≤ 1</td>
<td>19.807***</td>
<td>24.058***</td>
</tr>
<tr>
<td>r ≤ 2</td>
<td>0.2537</td>
<td>2.9306</td>
</tr>
</tbody>
</table>

These results allow us to estimate the dynamic relationship linking migration balance and unemployment rate to regional income inequality.

**2.3. Methodology and Econometric Results**

In our econometric analysis we used a panel data approach because it is very easy to suppose that among Italian regions there is heterogeneity, and therefore we estimated two different models: the first takes into consideration the error term as correlated to the regressors (equation 4) and the second assumes that the former element is not correlated to the second ones(equation 5).

**Fixed effect model:**

\[ Gini_{it} = \alpha_i + \beta Un_{i,t-1} + \delta MB_{i,t-1} + u_{i,t} \]  \( (4) \)
Random effect model:

\[
Gini_{it} = \alpha + \beta U_{i,t-1} + \delta MB_{i,t-1} + u_{i,t} + \varepsilon_i \tag{5}
\]

In both equations we introduced a lag, as we hypothesised that the unemployment rate and migration balance at time \(t-1\) affect the Gini coefficient at time \(t\). Moreover, the introduction of a lag for each of the explained variables allows us to overcome the causality problem. After which, since the Hausman test allowed us to reject the hypothesis of correlation between the error term and the regressors, we estimated the equation (5) and used the Wooldridge (2002) test to rule out the serial correlation in the residuals. Therefore, having detected the presence of cross-sectional dependency using the Pesaran (2004) CD test, we selected the Driscoll and Kraay (1998) option to obtain heteroskedasticity- and autocorrelation-consistent standard errors, to rule out any form of spatial and temporal dependence. Subsequently, we estimated equation (2), first, on the entire period observed and, then, on both two sub-periods in which it was broken down. Finally, utilising the VIF test, we made sure that there was no multicollinearity.

Table 4 shows the results of our estimates. They reveal that the relationship between migration balance and income inequality is negative. This means that a positive migration balance (number of immigrants greater than emigrants) reduces the regional Gini coefficient. The result does not change regardless of the period we consider. The above mentioned relationship is always negative and significant. The migration balance coefficient is higher in the post-crisis period, and the \(R^2\) are very high for the whole period and for both sub-periods in which the former was broken down.

| Tab. 4 – Impact of MB and Unemployment on regional Gini coefficient |
|-----------------------|---------------------|---------------------|---------------------|
| Unemployment | 0.348*** | 0.390*** | 0.345*** |
| | (0.123) | (0.052) | (0.260) |
| Migration Balance | -1.923*** | -1.223*** | -2.332*** |
| | (0.440) | (0.821) | (0.533) |
| Constant | 24.660*** | 24.61*** | 24.410*** |
| | (0.164) | (0.569) | (0.280) |
| R-squared | 0.5069 | 0.5813 | 0.4791 |
| Discr/Kraay | Yes | Yes | Yes |
| Observation | 180 | 80 | 100 |
At this point, we utilised regional unemployment rates as a control variable. We noted that – as expected – a rise in the unemployment rate increases the regional Gini index and, therefore, the degree of regional income inequality.

Assuming that a higher education level of workers will result in an increase in regional per capita wages and that the latter is one of the channels through which the migration balance could reduce income inequality, we estimated the following fixed effect model:

\[
Wage\ per\ capita_{it} = \alpha_i + \beta Un_{it} + \delta MB_{it} + u_{it}
\]  

(6)

Table 5 shows the results obtained. We can see that the migration balance has a positive effect on the level of the regional per capita wage: considering the whole period, we noted that the coefficient of migration balance is 1.326. This effect is slightly less significant in the crisis period, nevertheless it is still significant.

It is worth to note how the negative impact of unemployment on the level of regional per capita wage is stronger in the recession (-0.366) than in the previous period (-0.261). This phenomenon can be substantially justified by the fact that, in a negative phase of the economic cycle, there are more people who are available to work for a lower wage or illegally. This situation is very common in Southern Italy, where illegal work represents a high percentage of the national GDP.

<p>| Tab. 5 – The impact of MB and Unemployment on wage per capita |</p>
<table>
<thead>
<tr>
<th>---------------------------------</th>
<th>-----------------</th>
<th>-----------------</th>
<th>-----------------</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment</td>
<td>-0.259***</td>
<td>-0.261***</td>
<td>-0.366**</td>
</tr>
<tr>
<td></td>
<td>(0.100)</td>
<td>(0.501)</td>
<td>(0.132)</td>
</tr>
<tr>
<td>Migration Balance</td>
<td>1.326</td>
<td>5.613***</td>
<td>0.978***</td>
</tr>
<tr>
<td></td>
<td>(0.801)</td>
<td>(0.601)</td>
<td>(0.316)</td>
</tr>
<tr>
<td>Constant</td>
<td>4.520***</td>
<td>0.865***</td>
<td>5.122***</td>
</tr>
<tr>
<td></td>
<td>(0.693)</td>
<td>(0.469)</td>
<td>(1.313)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.0905</td>
<td>0.2895</td>
<td>0.1425</td>
</tr>
<tr>
<td>Disc/Kraay</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observation</td>
<td>180</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

For equation (6) R² are not very high. This implies that the increase in wage per capita is just one of the multiple ways through which the migration balance affects the regional income inequality.

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In conclusion, the impact of migration balance on the regional income inequality can be seen as an indirect effect, due to the fact that migration—especially that of high-skilled immigrants—acts on various variables through several channels, among which the average level of per capita wages.

3. Concluding Remarks and Policy Proposals

3.1. Concluding Remarks on the Equalising Function of Immigration

The econometric analysis presented in this paper shows how the new internal migration of the resident population from the South to the Centre and the North of Italy has a substantially equalising effect, since it reduces income inequality within destination regions, the richest, and helps to increase the latter in the poorest source regions. This result most likely depends on the characteristics which distinguish this new wave of migration towards Central and Northern Italy\(^\text{12}\). In addition to the changes in the areas of departure and destination flows, in fact, the most important factor of discontinuity, typically related to this “new” internal migration, “seems to concern the degree of education of immigrants”\(^\text{13}\). The models utilised to study the characteristics of internal migrants and their changes over time confirm, in fact, “that Southerners who have decided to emigrate are on average more educated than the ones left in the Mezzogiorno”. It seems, in other words, that college graduates and high school graduates have a greater propensity to emigrate compared to those who did not obtain a diploma higher than middle school and that, therefore, there has been a process of “positive selection” of emigrants based on their educational level, very similar to that which is generally found in contemporary international migration (Chiswick, 2000). This distinctive feature of the new movements of the resident population among the Italian regions was reported by most recent studies of demography and sociology (Cardinale, 2012; Panichella, 2009, 2012, and 2013) and is confirmed by the surveys done by ISTAT and SVIMEZ\(^\text{14}\). Some studies have shown, however, that skilled emigration is not a novel character of the new migration, but a structural character which has qualified the whole history of migration from the South to the Center

\(^\text{12}\) On the history of migration and the immigration policies in Italy, see Casacchia, Strozza (2001).
\(^\text{13}\) Panichella (2014), 75-112.
and the North of Italy\textsuperscript{15}. These studies contain extensive empirical evidence which proves how the propensity to emigrate of the most educated individuals is always the same, while the propensity of the less educated individuals and the less economically endowed to emigrate has changed. The alleged discontinuity with the past is connected, rather, to another aspect typically related to these new migrations. Currently, there are not enough data to prove it, but probably the average level of education of the Southerners emigrating to the Center-North is higher than the one of the residents of the destination zones. In the past, however, the average level of education of the Southerners who emigrated to the Center-North was lower than that of the people who welcomed them and this affected negatively not only the financial situation of local governments in Northern Italy but also the welfare of residents of the destination areas of migratory flows\textsuperscript{16}.

Our results depend very plausibly on this element of discontinuity that characterizes the new migrations in comparison to those of the past, a hypothesis which would find a solid foundation in the Kahanec and Zimmermann model mentioned above and which, in turn, allows us to go back to the causes of the higher level and the increase in income inequality occurred in the Southern Italy during the years of the global economic crisis. The Table 6 shows clearly the level and variation of income inequality in the major Italian territorial divisions between 2008 and 2012. The statistical indices utilised to measure income inequality are the Gini index and the interdecile income ratio.

<table>
<thead>
<tr>
<th>Territorial divisions</th>
<th>Gini index</th>
<th>Income inter-decile ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2008</td>
<td>2012</td>
</tr>
<tr>
<td>Mezzogiorno</td>
<td>32.4</td>
<td>33.2</td>
</tr>
<tr>
<td></td>
<td>4.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Center-North</td>
<td>30.2</td>
<td>30.7</td>
</tr>
<tr>
<td></td>
<td>3.7</td>
<td>3.8</td>
</tr>
<tr>
<td>Italy</td>
<td>31.8</td>
<td>32.4</td>
</tr>
<tr>
<td></td>
<td>4.1</td>
<td>4.2</td>
</tr>
<tr>
<td>Among areas</td>
<td>6.9</td>
<td>7.1</td>
</tr>
<tr>
<td>Within the areas</td>
<td>18</td>
<td>18.4</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Overlap</td>
<td>6.9</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: SVIMEZ on data ISTAT, IT-SILC 2012.

\textsuperscript{15} As argued in the past by Pica (1972) and, more recently, by Laganà, Violante (2011), Pugliese (2002) and Panichella (2012 e 2014).

\textsuperscript{16} Cf. Pica (1972).
The data resulting from the first two rows of the above mentioned Table reveal that, before and after the crisis, there was a slight change in the levels of income inequality in the Mezzogiorno, which is pointed out by an increase both in the Gini coefficient and in interdecile income ratio. There have not been, instead, significant changes in the rest of the country.

The distribution of income among different areas of the country and the highest increase in inequality in the Southern part of Italy during the economic crisis are also shown in Figure 4 and 5. They represent the percent distribution of households by region and by quintiles of income between 2008 and 2012. In these graphs the households are ranked from the poorest one to the richest one and they are divided into quintiles of income, that is into five groups composed by an equal number of households.

At the end of the crisis, in the Center-North of Italy, almost one household on two (48,7%) is included within two richest quintiles, but the number of the richest households has not changed for next to nothing (from 48,6 to 48,7%: + 0,1%), while in the South of country this number decreased by 0,6% (from 21,4 to 20,6%). Moreover, on other side of the social scale of incomes, in the Southern part of Italy, although there has been a slight lowering in the number of households included in the poorest quintile, a significant part of them is yet included in it: 38,4%. Currently, in some southern regions, this percentage is also higher (Campania: 40,9%; Sicilia: 48,6%).
Fig. 5 – Percent distribution of households by region and by quintiles of income in 2012

A relevant detail, moreover, cannot escape: if we assume that the Southerners who have decided to move to the Centre-North are not a representative sample of the Southern society, but only the most educated and equipped with skills, resources and motivations, it is highly likely that they will be also, on average, more educated and wealthier than the people that welcome them, or at least they will have a level of education and wealth that allows them to contribute more to the improvement of the economic performance – and therefore of the wealth – of the Central and Northern regions. At the present time we cannot be sure that our conjecture is true, because we do not have enough data to prove it. Therefore, we merely point out that such phenomenon cannot and should not be underestimated, because it can lead to an automatic increase of economic imbalances existing within the country. Furthermore, recent studies have shown that the migration of human capital can have a negative effect on the welfare and the economic growth of countries. Underestimating this phenomenon means running the risk of consolidating and accelerating the aforementioned process of human and industrial desertification of the Mezzogiorno, as well as its degree of economic underdevelopment and dependence on the rest of the country.

17 In this sense, cf. Lo Cicero (2010), at page 568 and the following pages.
3.2. Policy Proposals to Handle Migration and Counteract the Desertification of the Mezzogiorno

The remarks made so far enable us to advance some operative proposals to learn how to face these kinds of problems and to prevent, in the specific Italian case here analyzed, the continuation of the described human and industrial desertification process of the Mezzogiorno.

First of all, it must be recognized that immigration is a phenomenon widely studied but still poorly understood. Surveys on income and consumption – which are the basis for the analysis of inequality and poverty – are based on samples in which immigrants are not adequately represented. However, if we do not lose heart due to these difficulties and explore in depth the relationship between economic inequality and migration, we could learn to better manage the migration flows and migration could actually produce gains, playing an important role in the reduction of the inequalities.

Nowadays governments should become aware of the fact that their boundaries are becoming less controllable and increasingly irrelevant due to different phenomena (the globalization, the international communication and cooperation; the proliferation of international trade agreements and the areas of free trade; the greater propensity of people to the mobility abroad, both for reasons of work or study, both for other reasons). In this scenario, the European Union should develop a more systematic approach to the issue of the border control. It should have an approach less conditioned by the emergency and should make clear its identity and its role in the world. Each Member State of the Union should then realize a fundamental change in the perception of themselves and of their identity: they should accept that they already are, but even more in the future they will be, necessarily, immigration societies.\footnote{This proposal had been already advanced by Haller in a recent etude on the current relevance of boundaries in the EU (Haller, 2012).}

Governmental institutions of the European Union and its Member States, considering the aging processes ongoing and the low rate of demographic growth which characterizes the old continent, should understand that immigration, if properly managed, could also be a blessing. In fact, as Piketty argues in his latest book (Piketty, 2013), if the economic fundamental variables to be monitored, in order to control the worldwide patrimonial inequality (currently growing, and to escape the so-called Rastignac’s dilemma), are the rate of return on capital ($r$), the growth rate of the per capita national income ($g$) and the tendencial ratio between capital and income...
(β), it should be clear that a proper management of migratory flows, in this context, assumes a paramount relevance. The tendencial relationship between capital and revenue depends also, in fact, on the rate of population growth (n), as well as on the growth rate of income. This concept can be so translated in mathematical terms:

$$\beta = \frac{s}{g+n} \quad (7)$$

where s is the savings rate of the country considered and g is the growth rate of its national income. However, the growth rate of the population depends, in turn, on the existence of people permanently resident (c) in the country and on the flows of persons who enter (i) and exit (e) from it:

$$n = c + i + e \quad (8)$$

Therefore, the magnitude of migratory flows and the immigration policies, impacting on the last two terms of the expression (8), will affect the tendencial ratio between capital and income and, in this way, on the distributions of wealth. This occurs because $\beta = \beta(s, g, n)$, while $n = n(c, i, e)$. Therefore: $\beta = f[i(n)]$.

We must be aware, however, that migration in itself would not resolve the issue of the inequalities. At most, it would shift this forward, because the redistribution through immigration does not exempt from previously creating a minimum set of rules and institutions aimed at incentivizing a major coordination and collaboration by governments, at international, national and local level, to change the present management systems of migration (in order to take into consideration the interests of migrants and their source countries and areas) and correct their redistributive effects. Governing the financial impact of immigration may require, in fact, the redistribution of the benefits and costs of migration and their redirection to the local authorities most affected by the phenomenon. In this sense, it should be definitely regarded favorably the proposal of the Italian State to assign monetary incentives to the Municipalities which commit themselves to a greater extent on the front of immigration. The analysis of the Italian case shows, however, that an operation of this kind needs to be accompanied by economic policy measures aimed at stimulating the accumulation of physical and human capital and at encouraging investment in the source areas of migratory flows, in order to increase their attractiveness and productivity, while a wise management of taxation and welfare systems, both at national and local level, should ensure a more equitable redistribution of the gains.
produced by migration\textsuperscript{19}, mainly help people and unskilled workers who remain in low productivity areas\textsuperscript{20}.

Appendix

\textbf{Tab. 1 – Cumulative Mb and Change in Gini coefficient}

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ABR</td>
<td>1.29</td>
<td>-1.8</td>
</tr>
<tr>
<td>BAS</td>
<td>-3.18</td>
<td>1.14</td>
</tr>
<tr>
<td>CAL</td>
<td>-3.69</td>
<td>-2.2</td>
</tr>
<tr>
<td>CAM</td>
<td>-3.7</td>
<td>1.6</td>
</tr>
<tr>
<td>EM-RO</td>
<td>3.2</td>
<td>-0.1</td>
</tr>
<tr>
<td>FVG</td>
<td>2</td>
<td>-1</td>
</tr>
<tr>
<td>LAZ</td>
<td>1.2</td>
<td>-1.2</td>
</tr>
<tr>
<td>LIG</td>
<td>1.04</td>
<td>2.4</td>
</tr>
<tr>
<td>LOM</td>
<td>1.57</td>
<td>-1.8</td>
</tr>
<tr>
<td>MAR</td>
<td>1.37</td>
<td>-0.5</td>
</tr>
<tr>
<td>MOL</td>
<td>-0.55</td>
<td>3.6</td>
</tr>
<tr>
<td>PIE</td>
<td>0.61</td>
<td>-1.2</td>
</tr>
<tr>
<td>PUG</td>
<td>-1.61</td>
<td>-1.1</td>
</tr>
<tr>
<td>SARD</td>
<td>0.11</td>
<td>-3.1</td>
</tr>
<tr>
<td>SIC</td>
<td>-2.42</td>
<td>-2.2</td>
</tr>
<tr>
<td>TOSC</td>
<td>1.79</td>
<td>-1.6</td>
</tr>
<tr>
<td>TRENT</td>
<td>2.22</td>
<td>-1.4</td>
</tr>
<tr>
<td>UMB</td>
<td>1.58</td>
<td>-1.2</td>
</tr>
<tr>
<td>VAL.OA</td>
<td>2.2</td>
<td>-1.2</td>
</tr>
<tr>
<td>VEN</td>
<td>0.79</td>
<td>-0.5</td>
</tr>
</tbody>
</table>

\textsuperscript{19} In this sense, cf. Bucovetsky (2003). According to this author, in the second-best world – where a system of lump-sum interpersonal transfers is unfeasible – a greater degree of progression of taxes applied in the source areas of migratory flows would help to make more equitable redistribution of the benefits of migration and to increase the social welfare.

\textsuperscript{20} Migration policies, also in the opinion of Collier, should start again to dealing with the impact of migration on the people who remain at home. Very often, however, they seem to take into account solely the potential impact of future migration on native populations in the host countries (Collier, 2013).
References


Black R., Natali C., Skinner J. (2005), Migration and Inequality, World Bank, Washington, DC.


**Abstract**

According to some scholars, immigration can have a relevant role in the reduction of inequality. It has happened in the past and it may also happen in the future, as it is possible and desirable. However, migration in itself does not resolve definitely the issue of the inequalities and, moreover, in light of the recent studies on the effect of immigration, the exigency of additional in depth research on the impact of this phenomenon on regional disparities and income inequalities has become evident. The present paper faces these relevant issues, focusing on the regional impact of internal migration and attempting to demonstrate, with reference to the Italian case, how out-migration can increase income inequalities, thus hindering economic growth and exacerbating regional disparities, while immigration can reduce income inequalities and mitigate economic imbalances, according to the hypothesis of skilled immigration equalising, formulated in 2008 by Kahanec and Zimmermann.

**Keywords:** Income Inequality, Migration, Economic Growth, Redistribution through Immigration.

**JEL Classification:** C23, E64, J15, R10

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