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Pier Giorgio Ardeni
Andrea Gentili

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Revisiting Italian Emigration Before the Great War:
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Pier Giorgio Ardeni and Andrea Gentili[1]
Department of Economics, University of Bologna
Strada Maggiore 45 – 40125 Bologna, Italy

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Abstract

Among the many studies on migration before the Great War, Italy has received little attention, with a few notable exceptions and without providing a convincing explanation of its economic and demographic determinants. Standard neoclassical approaches explain emigration as driven by relative wages, relative employment rates and the stock of previous emigrants. We aim at improving on earlier contributions by covering all migration outflows from Italy to the most significant destination countries and by adopting the most consistent and up-to-date econometric approaches. As it turns out, the standard model is not fully confirmed and a more nuanced analysis is needed.

Keywords: Emigration, Italian economic history, Migration model

1 Pier Giorgio Ardeni is a Professor of Development Economics, while Andrea Gentili is a Post-doc Researcher, and are both associated with the Department of Economics at the University of Bologna. Earlier versions of the paper have been presented in a number of seminars and benefited from the comments by various colleagues, most notably Maria Elena Bontempi, Matteo Cervellati, Roberto Golinelli and Vera Negri Zamagni, to which the authors are deeply indebted. We also thank Elisa Cuccoli, Raluca Lungu and Alexandra Uzunova for their valuable research assistance. The research was made possible thanks to the funding from the Department of Economics on "The Determinants of Early Italian Development".

1. Introduction

Between 1876 and 1915 more than 14 million Italians left home, bound to either another European country or the New World. About 6 million people migrated to a country in Europe, while more than 7 million went to the Americas. Italians were part of the huge flow of migrants that between the 1870's and the Great War was one of the most important feature of the evolving world economy, as more than 40 million people moved from Europe to the New World. While considerable waves of population movements had already occurred in the previous one hundred years between the European Nordic countries, Wales and Scotland and the UK, Denmark and the Netherlands, and then between the British Isles, including Ireland, Germany and France to the New World, it was after 1870 that the movement of people across countries and continents began to increase to an unprecedented pace, thanks also to a prolonged period of relative peace both in Europe and the Americas,[2] the continued fall in transportation costs both by land and by sea and the faster connections between continents.

Despite the scattered and diverse sources, statistics on population movements have been collected and assembled in the past, drawing from a variety of sources, from administrative data on passports and visa releases to port embarkation and disembarkation figures, and from vessel passenger lists to immigration records at destination. In this respect, the most authoritative study on historical statistics on international migration still remains Ferenczi and Wilcox (1929).[3]

Throughout the nineteenth century migration outflows developed from the more backward rural areas and countries to the rapidly industrializing countries, which left large numbers of rural workers unemployed as the combined result of mechanization in industry and import of cheap

2 If we exclude localized wars in the Balkans, the Ottoman territories and Northern Africa and Central America.

3 But see also the thorough discussion on migration data provided by Gould (1979).

agricultural commodities from overseas territories (Ferenczi and Wilcox, 1929, Easterlin, 1961).[4] Several countries started with a net outflow of migrants to other more industrialized countries to become net in-takers during later stages. Most of the observed overall movements occurred between Europe and the Americas, most notably Argentina, Brazil, Canada and the United States.[5]

Such huge population flows have been broadly explained by a variety of factors and several studies have offered explanations for nineteenth-century emigration, most notably Easterlin (1961), Tomaske (1971), Massey (1988), Baines (1991) and Hatton and Williamson (1994), among others.[6] Most studies have treated migration flows as fundamentally determined by economic factors and, in particular, by the decision to move in reaction to expected higher incomes or earnings. Easterlin (1961) examined the relationship between European emigration and population growth, explaining emigration as a vent for "surplus" population (to be proxied by per-capita income). Building on Lewis' and Harris and Todaro's approach, Hatton and Williamson (1994) added to population growth the surplus of labor in rural areas (to be proxied by relative real wage gaps). Yet, emigration flows are not explained by population surpluses alone or by real wage gaps only and their patterns are shown to change over time as industrialization and wage convergence take place. Diffusion, persistence and migrant networks have also been considered e.g. by Gould (1979) and Moretti (1999), together with the importance of industrialization as a proper explanatory factor (Massey, 1988).[7]

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4 See also Gould (1979) and Hatton and Williamson (1994).

5 Immigration into American countries went from an annual average of about 9,000 people in the 1821-1825 five-year period to 138,000 in 1841-45 to 405,000 in 1866-70 to 653,000 in 1881-85 to 1,039,000 in 1901-05 to 1,403,000 in 1911-15. The larger percentage of that inflow went to the US (from more than 80 per cent at the beginning of the period to less than 60 per cent at the end). See Ferenczi and Wilcox (1929, p. 168).

6 See also Green and Urquhart (1976), Gould (1979) and Heitger (1993).

7 Migration costs have also been brought into the picture to account for differential migration rates across countries and times (e.g. Hatton and Williamson -1994- and Faini and Venturini -1994-). However, they have not been convincingly used used as an explanatory factor.

If those are the main arguments brought by most qualitative and descriptive accounts of nineteenth-century European migration, quantitative models have followed similar theoretical patterns.[8] The standard theoretical approaches as in Todaro (1969), Hatton (1993, 1995) and Hatton and Williamson (1994) are all based on similar determinants of migration flows as the decision on where to migrate is only determined by the lifetime expected return on migration. Specifically, wage gaps, employment perspectives and migration costs determine if and where to migrate. Such explanations have not been convincing for the case of Italy and Italian emigration has appeared to be "puzzling" (see e.g. Moretti -1999-). Given the large gap in expected returns (both in terms of present and future values) out-migration should had been much larger at the beginning of the period, only to slowly decrease as time went on. Wage differentials and employment rates seem to tell a different story (as in the Graph below).

Graph 01 here

While the overall determinants of the observed Italian migration outflow before the Great War have usually been ascribed to poor living conditions, excess supply of rural labor, underemployment and lack of demand for labor in the lagging development of Italian industry, the standard migration model does not seem to satisfyingly account for such outflows when applied to the Italian case. In particular, it appears that wage differentials and relative employment rates do not explain the large population movements that occurred in the four decades before 1915 between Italy and the rest of the world.

8 See the econometric studies reviewed in Gould (1979) and Hatton and Williamson (1994).

At unification (1861) Italy was a relatively poor and mainly agricultural country and yet its contribution to international migration was small. Migration began to pick up in earnest only in the 1870's, with a steadily increasing outflow reaching a peak in 1901 with more than 533,000 people leaving in one year, then again in the decade between 1905 and 1914 with more than 650,000 people annually.[9] The 1915-1918 World War led to a sudden decrease in the outflow and after that a dramatic change in the overall political and economic conditions brought to a permanent reversal of the migration pattern.

As a large number of studies have examined emigrant flows from various European countries, Italy has only received little attention, with the notable exception of Faini and Venturini (1994), Hatton and Williamson (1998) and Moretti (1999).[10] Italian migration has been analyzed by a several economic history studies, but only a few have provided a convincing explanation of its overall economic and socio-demographic determinants. Most studies on Italian economic development and the industrial take-off have tended to rule out migration as a residual phenomenon – a "relief valve" for the excess supply of rural labor – adding to the explanation a mere pull-factor from the fast developing industrial economies of the US and other European countries. However, there is something missing in that standard analysis, as Italian migration cannot be explained only through Italy's late-comer industrialization status (Hatton and Williamson, 1994). Faini and Venturini (1994) analyzed the importance both of demographic changes and of structural changes in the economy, while Moretti (1999) stressed the importance of the so-called "friends and relatives" effect – the network effect –, and yet both these interesting

9 Official comparable statistics are available before 1876 for only a limited number of destination countries, even if migration out-flows, particularly to neighboring countries, were not irrelevant (as shown in Ferenczi and Wilcox (1929, p.811 and Table I, II, III, p. 817)). In 1876 the *Annuario Statistico dell'Emigrazione* was started as an annual publication by the Italian General Directorate for Emigration, covering data for all destination countries.

10 See also Gomellini and O Grada (2011), although their focus is on migration at the regional level.

contributions focused on limited data. Hatton and Williamson (1998, p. 96) asked "to what extent can Italian emigration be explained by the same economic and demographic forces identified" for other European countries, only to conclude that in the case of Italy "the determinants of Italian emigration are much too complex to be isolated by [bivariate correlation] analysis" and that "that conventional wisdom is often badly bruised when exposed to multivariate analysis".[11] Their analysis, in any case, supported the standard migration model when applied to the overall aggregate migration flow from Italy to the rest of the world.[12] On the other hand, Faini and Venturini examined migration to France, Germany and the US only, while Moretti focused on four overseas destination countries only – US, Canada, Argentina and Brazil –. All of these works did not account for migration costs.[13]

Both Faini and Venturini (1994) and Moretti (1999) pointed out that large part of Italian migration took place only beginning in the 1880's, when Italian industrial development started to pick up. Specifically, Moretti emphasized how – purportedly – there was no response to wage differentials in Italian emigration to the Americas. As wage differentials started to decrease, so migration increased. Italy's emigration rose from 5 per thousand in 1876 to 25 per thousand in 1913[14] while wage gaps decreased or remained stable. Even relative employment levels (or rates), as suggested by Gould (1979), do not seem to explain migration outflows during that period. As pointed out in Faini and Venturini (1994), the Italian employment growth rate was below the main

11 Hatton and Williamson (1998, p. 96).

12 Hatton and Williamson (1998) considered the whole of the migration flows from Italy to all destination countries from 1876 to 1915, using the data taken from the *Annuario Statistico dell-Emigrazione* referred to above. As for the receiving countries, they considered some averages of the main variables for five countries – France, Germany, UK, Argentina and the US – .

13 The only other study on Italian migration for the same period – Gomellini and O Grada (2011) – focused on Italian regional disparities and their differences in contributing to out-migration, without analyzing migration by country of destination.

14 The number of emigrants is usually reported in terms of thousand residents at the start of the reference period.

destination countries' until 1900, but it was in line with or above them after 1900. All studies, in any case, failed to provide any sensible explanation of Italian migration to the Americas, as opposed to Europe, and to explain why Italian migration patterns are considerably different from all other main countries that were characterized by large migration flows in their early stages of development.[15]

This paper aims at improving on earlier contributions to the understanding of the economic determinants of Italian migration before the Great War in four ways. First, differently from previous studies, the paper covers all migration outflows to a larger number of countries – the 16 most significant destination countries: Argentina, Australia, Belgium, Brazil, Canada, Denmark, France, Germany, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom, United States –,[16] thus accounting for about 75 to 90 per cent of all out-migration in the period, and it treats those individual flows separately. To this end, we have created a revised migration database by destination country. Second, in line with the relevant literature, the paper considers a number of economic variables for the receiving countries, taking the same data sets and frameworks – wages and employment levels – used by other studies to explain migration outflows from other European countries (quoted above), thus testing for the case of Italy important assertions that have long been part of the literature. Third, the paper adopts a multivariate panel regression model, by accurately accounting for heteroskedasticity, autocorrelation, non-stationarity and co-integration, which were all lacking in the previous studies on Italian data.

15 We should also mention Hatton and Williamson (1998) discussion on the "big surge" in Italian migration around the turn of the century. In their opinion, that spurge was spurious (and exaggerated), due to the change in the administrative data collection procedures. This would be confirmed by the difference between emigration data from Italy to the US, which are systematically lower before 1901 and systematically higher after 1901. This, in any case, does not imply that the *net migration* rates should be decreasing, as shown in their book (on p. 97), as return migration estimates are quite questionable for that whole period.

16 Listed according to the following 11 groupings: Argentina, Australia, Benelux (Belgium, Netherlands and Luxembourg), Brazil, Canada, France, Germany, Iberia (Spain and Portugal), Scandinavia (Denmark, Norway and Sweden), United Kingdom, United States.

Fourth, the paper aims at validating the standard migration model by testing a number of hypotheses already identified in previous studies, thus trying to disentangle the underlying determinants that have been responsible for Italian emigration. As it turns out, the neoclassical explanation of migration – whereby outflows are proportional to differences in employment rates, wage gaps and the stock of previous emigrants – is not fully confirmed. As we will argue below, a more nuanced and detailed analysis which include determinants by province and conditions at home appears to be of order to properly explain the large migration flow that characterized Italy's initial development.

The remaining of the paper is structured as follows. In the next section, migration data are briefly presented and the relevant features of Italian emigration in the period are illustrated, by destination country. In the following section, the simple reference model is presented, allowing the discussion of various hypotheses, which are then tested. The results are then discussed in section 4, followed by a brief concluding section.

2. Italian emigration data: a new look at old numbers

Modern Italy unified as a country only in 1861, but only after 1870 it included most of its present-day territory, with the exclusion of Trento and Trieste, which were annexed in 1918.[17] Italy as a whole was a relatively poor and mainly agricultural country, with vast rural areas characterized by over-population and under-employment. Modern industrial development had already started in some parts of the North-West and in some of the largest cities (Fenoaltea, 2011), but the Italian economy was mostly agricultural, generally backward, with large regional imbalances and striking

17 The 1861 unification under the Kingdom of Piedmont and Sardinia ruled by the Savoia Family did not include part of the province of Mantua, the region of Veneto and the province of Udine – which were annexed in 1866, after the Third Independence War against Austria-Hungary – and the city of Rome and its surrounding area – corresponding to the current Region of Lazio – which was annexed in 1870.

differences in terms of institutional and social development. Interestingly, internal migration was still very limited. Short-distance out-migration, in the form of both temporary (seasonal) and permanent residential movements, had always existed, mostly to the neighboring countries – the Balkans, the Middle East, North Africa, as well as France, Spain, Switzerland and Austria-Hungary. Temporary migration to France, Switzerland and Austria-Hungary increased throughout the nineteenth century, for both agriculture and mining work. Migration to North Africa and the Middle East was more for rural small-holders trying to elicit a better life. Overseas migration began to gain pace during the 1840-1860 period, particularly to South America.[18]

Migration data were not recorded systematically until unification and it was only after 1876 that migration statistics started to be recorded by a central government body, the *Direzione Generale di Statistica*, and published regularly in the *Annuario Statistico dell'Emigrazione*. The first Italian population census in 1861 recorded the number of Italians resident abroad, collecting data from Italian diplomatic missions, and so did the following censuses of 1871 and 1881.[19] In any case, the number of recorded emigrants for the years 1856 to 1876 was quite limited, much smaller than that recorded for other European countries during the same years.[20] From the 396 emigrants to America recorded for 1856 to 5,905 for 1861, to 32,961 in 1869, out of a total 143,109 emigrants recorded for that same year.

The data-base we have constructed relies on original data from the Italian Government statistical yearbooks by destination countries, which were based on passport applications to the

18 See Ferenczi and Wilcox (1929). There were 3,021 Italian emigrants to Argentina in 1857 and 18,937 in 1868, 1,807 to Brazil in 1836 and 2,092 in 1864, 34 to Uruguay in 1835 and 2,542 in 1842.

19 Port statistics on the number of passengers by destination country were already collected at the main Italian ports. Leone Carpi obtained the data from *Prefetture* (Government provincial governors) on passport releases and was able to compile statistics on Italian emigration for the years 1869 to 1876 with great accuracy, adding also an estimate of "clandestine emigrants officially recorded".

20 See Ferenczi and Wilcox (1929, p.811 and Table I, II, III, IV, V, p. 817-8).

Provincial governments, beginning in 1876.[21] Official comparable data from 1876 on show that Italian migration began to pick up in the 1870's, with a steadily increasing outflow reaching a peak in 1901 with more than 533,000 people leaving in one year, then again in the decade between 1905 and 1914 with more than 650,000 people annually. The 1915-1918 World War led to a sudden decrease in the outflow and after that a dramatic change in the overall political and economic conditions brought to a permanent reversal of the migration pattern. Migration to Europe remained larger than overseas migration up to the late 1880's (see Table 1 below). Italian emigration then became sizable both in absolute numbers and relative to the resident population.

Table 1 here

In terms of resident population the out-flow was enormous – a real exodus – and one of the largest among European countries.[22]

Throughout the whole period, of the total number of emigrants, temporary ones remained a large share, albeit a diminishing one. This was possibly due to the registration procedure – so that people leaving their home would not lose their residence status –as well as to the place of destination, which was often in a neighboring country. As Table 1 shows, between 1876 and 1915 the main destination countries changed over time. Initially, it was mostly France, Argentina, US,

21 This is the official source for all migration data for Italy that have been used in the past, see e.g. Ferenczi and Wilcox (1929) and all others. The analysis is based on a new database constructed collecting data directly at the source from the *Annuario Statistico della Emigrazione*. The database includes data on Italian migration flows at national, regional and provincial level to 24 different destination countries, by country, sex, province of origin, profession and a number of other demographic features, which we will not use in this paper.

22 See Hatton and Williamson (1994), Table I, p.536.

Germany and Brazil (in decreasing order and in terms of overall total). Over time, Canada and UK were added to the main destinations.

All in all, emigration from Italy was largely a rural phenomenon, from the most inner rural and mountain areas, which only in part paralleled the growth of industrial cities in the country. Most of the migration flow originated from a limited number of regions.[23] Throughout the 1876-1915 period, France was the main destination country, albeit with diminishing importance, followed by Argentina and the United States, which gradually became the main destination country. Overall, of the 14 million expatriates over the 40 years, 29 per cent went to the US, 13 per cent to Argentina, 12 per cent to France, 11 per cent went to Austria-Hungary, 9 per cent to Brazil, 9.5 per cent went to Switzerland and 8.8 per cent to Germany (for a total of 92.3 per cent). Only 1.5 per cent went to Africa and 1 per cent to Canada.[24]

3. Modeling Italian migration: the "standard" economic model

In light of the data shown above, two questions emerge. First, are the explanations provided for the other main European countries that have witnessed relevant migration outflows valid in the case of Italy? Second, were there underlying determinants that made Italy differ from other countries? Migration flows have usually been explained by economic differences in one form or the other, either in terms of income or wage differentials or in terms of employment opportunities.

23 Overall, of the 14 million expatriates over the 40 years, 23 per cent came from Veneto, 11 per cent from Piedmont, 10.5 per cent from Campania, 9.5 from Lombardy, 9.5 per cent from Sicily and 6 per cent from Calabria. The six regions contributed 69.5 per cent of total Italian migration.

24 In the analysis belowe, we will not include the data on migration to Austria, Switzerland and North Africa. For those receiving countries, in fact, we do not have a set of the same relevant economic variables that are available for other countries, including Williamson's (1995) wage rates. Also, it should be considered that emigration to Austria over that period is somehow tricky to detect, as in many cases those who "migrated" were simply people that were under Austria-Hungary until 1859 or 1866 and had either a double passport or were simply working on a neighboring land that was previously "Austrian", like the province of Udine and Veneto. Thus, migration flows to Austria are possibly overestimated. For many "migrants" to Austria it was mostly "working across the border".

A large body of literature in the 1960's and 1970's explained population movements in terms of "push" and "pull" factors as well as population surpluses and labor-market conditions, with mixed results. This empirical literature was reviewed by Gould (1979) and more recently in the work of Hatton and Williamson (1993, 1994) and Del Boca e Venturini (2005).

Migration models have incorporated three main hypotheses: that population surpluses in one country give rise to excess in labor supply (under-employment and unemployment) bringing real wages down, thus making migration flow respond to real wage differentials; that more backward agriculture-based economies have lower incomes than developing industrial economies, thus making migration flow respond positively to income differentials, industrialization and urbanization; that labor-market conditions and the associated search for better wages are associated with network effects and are not necessarily only the result of individual choices – people tend to search for jobs where other family members or fellow countrymen live –. The empirical evidence has generally confirmed such theoretical framework, with several caveats and many variants of the basic model, depending on the variables used and the countries considered.

After Gould's (1979) criticism of the empirical evidence of that time, Hatton and Williamson – with their various contributions in the 1900's – refined the modeling approach and provided new highlights by the use of new data, thus defining what we can call the now "standard" migration model. And yet, even in the light of such modeling approaches, Italy's migration has remained somehow unexplored and unexplained – with the exclusion of the contributions of Faini and Venturini (1994), Hatton and Williamson (1998) and Moretti (1999) – and several issues still remain unanswered. The Italian case is all the more important if we consider that millions of people migrated from Italy over the period and Italy represents in many respects a relevant "emigration story". The question is whether Italy's emigration cannot be explained by the standard model because of poor model specification, poor empirical evidence or poor data.

Several issues emerge in the case of Italy, which make the straightforward application of the standard model unsatisfying, even accounting for Hatton and Williamson (1993, 1994, 1998) consolidations. No study has tried to model migration flows out of Italy for the period before the Great War, either focusing only on a limited number of destination countries or taking all countries as a whole. Also, migration outflows to specific countries appear to be quite uncorrelated to wage rate differentials[25] as well as to employment level differentials. Moreover, migration costs as measured by time trends do not meaningfully explain overseas migration, as opposed to migration to Europe (while distance or some more precise measure would better account for the choice of destination). Finally, the empirical literature on Italian migration, even after Hatton and Williamson (1993, 1994, 1998), does not seem to properly account for the time-series properties of the data, like heteroskedasticity, auto-correlation, non-stationarity and co-integration.

In what follows, we will explore all these issues and test the standard economic model for the case of Italy. We will thus model Italian migration for the 1876-1915 by adopting the following theoretical framework, in line with Hatton (1995):

$$m_{i,t} = \alpha_0 + \alpha_1 ln(w_{i,t}/w_{h,t}) + \alpha_2 ln(e_{i,t}) + \alpha_3 ln(e_{h,t}) + \alpha_4 S_{i,t} \quad (1)$$

where $m_{i,t}$ is the *migration flow* at time t from Italy to country *i* or the *migration rate*, obtained by dividing the flow by the population of Italy (so as to have a rate expressed in thousands); $ln(w_{i,t}/w_{h,t})$ is the logarithm of the ratio between the wage rate in country *i* and the Italian wage rate[26], $ln(e_{i,t})$ is the logarithm of the aggregate level of employment in country *i* , $ln(e_{h,t})$ is the logarithm of the aggregate level of employment in the home country (Italy), and

25 Italian migration outflows show quite some variability from year to year (a common feature to many other countries), which implies that short-run determinants and cyclical effects must have been important. Even so, long-run trends are quite clear.

26 As described above, data are from Williamson (1995).

$S_{i,t}$ is the stock of Italian migrants to country *i*, calculated as the population in country *i* of Italian origin until time t-1 (the previous year) plus the number of migrants of the previous year, thus measuring the importance of the "network effect".[27] As in the standard model above, all coefficients should be positive, with the exclusion of the Italian employment's one: as the wage ratios, the employment in the receiving country and the network effects increase, migration flows increase. An augmented version of equation (1) has a cost variable is, which measures the global "cost" of migration from Italy to country *i* at time *t*. All included:

$$m_{i,t} = \alpha_0 + \alpha_1 ln(w_{i,t}/w_{h,t}) + \alpha_2 ln(e_{i,t}) + \alpha_3 ln(e_{h,t}) + \alpha_4 S_{i,t} + \alpha_5 d_{i,t} \quad (2)$$

and whose effect – measured by the α_5 coefficient – should obviously be negative.

The model, as specified in equations (1) and (2), is different from Hatton and Williamson (1998) in that here we consider the migration flow from Italy to each country separately, so as to account for the compound nature of the migration choice. While Hatton (1995) specification estimated the composite effect of wages and employment levels of three destination countries on British migration flows *all at once*, and Hatton and Williamson (1998) considered the effect on Italian emigration of the economic variables of five countries *at once*, we are able to estimate such effects separately and for each destination, by estimating one equation for each country.[28] This way we will be able to account not only for the fundamental binary choice between staying or migrating but also for the choice where to migrate. This, in our opinion, is also the proper test of the model proposed in Hatton (1995).

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27 For both employment ratios and network variables, data are as described above.

28 In Hatton (1995), "The wage and employment rates for the United States, Canada, and Australia were combined to form an average for overseas destinations" (p. 411). The dependent variable measured total UK migration to those three countries. In Hatton and Williamson (1998) , "the variables representing foreign conditions are weighted averages for five major receiving countries: France, Germany, Argentina, Brazil and the United States" (p. 103).

We used the data on migration flows to the 11 country groups listed above, covering 16 destination countries for about 85 to 90% of total migration.[29] As for the other main relevant variables, we used Williamson's wage rates, which refer to the purchasing-power-adjusted minimum wage in the industrial sector for low-skill jobs. It must be recalled that those wage rates were constructed by Williamson by interpolating over time when no information was available, using "pillars", like in the case of Italy.[30] The same is true for employment levels, which for most countries all come from estimates constructed by using decennial census data as "pillars".[31] As for the network variables – as measured by the stock of previous migrants --, we have estimated the stock of population of Italian origin by using census data of the receiving countries on the number of Italian born, Italian census of foreign living Italians and Ravestein (1889) data. Finally, distance was proxied with the distance between the capital of country *i* and Rome (in thousands of km) divided by a linear time trend to take into account the decreasing cost of migration due to improvement in technology and infrastructures.[32] In the case of country groups, for all the above variables, we used weighted averages, with country populations s weighs.

In order to estimate equations (1) and (2), we then tested the time series properties of the variables to be used in the model estimation below, by first using a standard ADF tests with 1 to 4

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29 These are: Belgium, Netherlands and Luxembourg (treated as one economy, Benelux), France, Germany, Great Britain, Spain and Portugal (treated as one economy, Iberia), Denmark, Norway and Sweden (treated as one economy, Scandinavia), Argentina, Australia, Brazil, Canada and the US. We have therefore excluding Switzerland, Austria, North Africa and the Middle East.

30 This, as we will see, might be the reason for some persistence or trend-stationarity in the data.

31 Employment rates were computed by interpolating census data on employment status (or on economically active population in the case of Brazil, see Mitchell (1983)) using alternatively three methods: constant growth rates OF WHICH VARIABLES?; the variation of GDP taking Maddison's GDP data: the cumulated GDP variation on the same Maddison's data.

32 Thus, the *distance* variable can also be seen as a *cost of transportation* variable. We also tried distance over railways km (in Italy), distance over international boat arrivals and similar information without obtaining significant differences.

lags, either with a deterministic trend or a drift. As for migration flows, results show that there might be two separate sets of variables with different underlying data-generating stochastic processes: a set of non-stationary variables for the flows to Australia, Benelux, France, Germany, GB, Canada and the US, and a set of drift-stationary variables for the flows to Argentina, Brazil, Iberia and Scandinavia.[33] The case of Argentina and Brazil is actually not surprising, as it probably signals the staggered behavior of the migrant flow, which was heavily influenced by special quota and incentive policies.[34] As for Scandinavia and Iberia, there does not seem to be any particular reason to suppose that the underlying data generating process was different from all other destination countries, although in both cases we are dealing with just a few hundred emigrants over the years, almost a residual.

As for all other variables, results appear to be mixed. Both wage ratios and employment ratios appear to be drift-stationary and when they evolve around some stochastic trend, they show some persistence, while network effects seem to be more definitively non-stationary. Yet, we should keep in mind that the ADF tests is typically not too powerful against deterministic or drifting trends and strong auto-correlation: as both wage rates and employment levels are constructed by interpolating data around a number of "pillars", the variability of time series has certainly been dampened at the price of spurious, induced auto-correlation. A clear conclusion from this set of tests is that migration flows (or rates), as well as all other variables, show a stochastic behavior that is different depending on the receiving country, thus confirming that migration flows to different countries should be treated separately.

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33 Migration *rates* shown the same stochastic behavior, as they are expressed as flows of emigrants divided by total (Italian) population, multiplied by 1,000. In the model estimation below, we used migration rates in all cases.

34 The cases of Argentina and Brazil actually deserve a special note. Those two countries enacted a policy of land tenure and special land rights for immigrants from Italy in a number of years, subject to quotas. That obviously generated a migration flow that was strongly distorted. It is no accident that the two flows show persistence around a drifting mean.

A second set of time series tests – Johansen's co-integration tests – shows that there is always at least one co-integrating vector among the six variables. Specifically there are two in the case of US and Germany, three in the case of Canada, Argentina, Brazil and France, four in Scandinavia and Iberia, five in Benelux and six in the case of Uk and Australia.

Finally, we performed two panel-regression stationarity tests (Im-Pesaran-Shin (1997)) and integration tests (Westerlund). The Im-Peseran-Shin (IPS) tests are based on the mean of the individual Dickey-Fuller t-statistics of each unit in the panel, assuming that all series are non-stationary under the null hypothesis. Lags of the dependent variable may be introduced to allow for serial correlation in the errors. The IPS tests allow for stationarity in some of the series, as they adopt a heterogeneous panel-regression model, which appears to be appropriate in our case. The results of the tests suggest that on average the variables in the panel are non-stationary. The Gt statistics of the Westerlund ECM panel-regression co-integration test suggests that there is integration of first order, even though the statistics is very sensible to the model specification.[35]

4. Putting the model to test: the results

Given the above mixed results on the time-series properties tests, we tested the model by estimating four different versions of equation (2). The first is adapted from Hatton and Williamson (1998), their application to Italian data. This equation can be written as

$$m_{i,t} = \alpha_0 + \alpha_1 ln(w_{i,t}/w_{h,t}) + \alpha_2 ln(e_{i,t}) + \alpha_3 ln(e_{h,t}) + \alpha_4 S_{i,t-1} + \alpha_5 d_{i,t} + \alpha_6 m_{i,t-1} + \alpha_7 m_{i,t-2} + \alpha_8 n_{h,t} + \alpha_9 D0113 \quad (3)$$

35 Performed using the XTWEST procedure for Stata (see Persyn and Westerlund, 2008).

Where *D0113* is a dummy variable for the years 1901-1913.[36]

This specification of Hatton and Williamson (1998) estimation equation for Italy deserves a few comments. In the first place, this is the panel-regression version of that specification, as we estimate an 11-equation model for 11 different destination countries, thus accounting for the specificity and the heterogeneity of the migration rates to each country. Thus, all variables are country-specific and are not aggregated with dubious weighing systems.[37] Secondly, in our specification, we keep the effects of the two "activity" variables – that in country *i* and that at home – contemporaneous, as we see no reason that justify a different expectation mechanism for employment perspectives at home and abroad. Third, the log rate of natural population increase is defined as in Hatton and Williamson (1998) and Faini and Venturini (1994) as the increase in population 15 years before. Fourth, the cost variable this defined takes into account the different distances, while at the same time accounting for the time-trend effect (thus replicating Hatton and Williamson (1998)). Finally, similarly to Hatton and Williamson (1998) , the dummy variable is introduced to account for the potentially "spurious" big-surge effect in the data from 1901 to 1913.

The results of the estimation of (3) are shown in the first column of the Table 2 below where it appears that the model is not supported. The only significant variables are the network variable, the lagged dependent variable and the dummy variable. The estimation of (3) was done using a standard homogeneous panel-regression model, where it is assumed that all coefficients are the same across equations, which is obviously quite a strong assumption contradicting our tenet that

36 The exact definition of the migrant stock can be misleading. Here by stock at time *t-1* we mean *at the end of t-1*, while Hatton (1995), for instance, uses the stock at time *t* as the stock *at the beginning of time t*. the wo definitions are, for that matter, identical.

37 In our opinion, it would be difficult to define a "proper" weighting criterion in this case, as using the share of migrant over the total number of migrant appears to generate endogeneity problems, while any other criterion would be debatable.

the high heterogeneity across countries is bound to have different effects across all variables over time and must therefore be taken into account.

We have thus tried a second version of equation (2) above, adapted from Hatton (1995). This equation can be written as:

$$m_{i,t} = \alpha_0 + \alpha_1 ln\left(w_{i,t-1}/w_{h,t-1}\right) + \alpha_2 ln\left(e_{i,t-1}\right) + \alpha_3 ln\left(e_{h,t-1}\right) + \alpha_4 S_{i,t-1} + \alpha_5 d_{i,t} + \alpha_6 m_{i,t-1} + \alpha_7 \Delta\left(w_{i,t}/w_{h,t}\right) + \alpha_8 \Delta ln\left(e_{i,t}\right) + \alpha_9 \Delta ln\left(e_{h,t}\right) \quad (4)$$

where, differently from equation (3) above, the wage and activity variables are lagged one period, the dependent variable appears with one lag only, and the first differences of the three wage and activity variables are also introduced. The justification for having the first differences of the three variables given in HW (1998) was that the theoretical model can be rewritten "in the form of a simple first-order correction mechanism" and then estimated.[38]

Results for this version are shown in the second column of the Table 2. Once again, it appears that the model is not supported, as the only significant variables are the lagged dependent one and the network variable. Again, the estimation of (4) was done using a standard homogeneous panel-regression model, not the appropriate estimation strategy for the case at hand, as we argued above.

Given that most of the variables appear to be non-stationary and co-integrated, as it was also the case in Hatton (1995)[39], we thus estimated a third version of model (2) above, which can be interpreted as the "appropriate" estimating equation of Hatton (1995) model:[40]

38 But then, their theoretical specification had a first-differenced migration flow as the dependent variable, while the estimates presented in the paper had the migration flow variable in levels.

39 Even though, in that case, it was a one-equation co-integration regression.

40 See equation (10) in Hatton (1995, p. 410).

$$\Delta m_{i,t} = \alpha_0 + \alpha_1 ln\left(w_{i,t-1}/w_{h,t-1}\right) + \alpha_2 ln\left(e_{i,t-1}\right) + \alpha_3 ln\left(e_{h,t-1}\right) + \alpha_4 S_{i,t-2} + \alpha_5 d_{i,t} + \alpha_6 m_{i,t-1} + \alpha_7 \Delta\left(w_{i,t}/w_{h,t}\right) + \alpha_8 \Delta ln\left(e_{i,t}\right) + \alpha_9 \Delta ln\left(e_{h,t}\right) + \alpha_{10} \Delta S_{i,t-1} + \alpha_{11} \Delta d_{i,t} \quad (5)$$

where all variables appear both in levels and first differences and the dependent variable is the first difference of the migration rate. Results for this version are shown in the third column of Table 2. Once again, it appears that the model is not supported, as the only significant variables are the lagged dependent one and the network variable, both in levels and in first differences. For the estimation of (5) the same caveats hold, as this is a homogeneous panel-regression model, which is not appropriate for the case at hand.

Table 2 here

Given the results above, we consider that the proper estimation strategy would be that of a panel-regression model. A homogeneous panel model, however, would not be appropriate in this case, as we have clearly seen that migration to different countries followed different behaviors over time, reacting with specific coefficients of adjustment to the given set of variables, and should thus be treated separately. We thus adopted the Pooled Mean Group (PMG) approach by Pesaran, Shin and Smith (1999) for heterogeneous panels, as the PMG allows us to reconcile some of the migration model assumptions with the needs of panel-data regressions. In particular, we let short-term adjustments and convergence speeds to vary across destination countries, and impose cross-country homogeneity restrictions only on the long-run coefficients, considering equations (1) or (2) as long-run equilibrium relationships. There are good reasons to believe in common long-run coefficients across all countries, as migration determinants should eventually be the same. Conversely, there is no reason to assume that the speed of convergence to the steady state should be the same across countries (as in many studies based on Dynamic Fixed Effects (DFE) estimators). The latter assumption would be consistent with the standard migration model only if migration determinants were the same across countries. The error-correction version of model (1) or (2) is thus:

$$\Delta m_{i,t} = \alpha_0 - \theta\left(m_{i,t-1} - \beta_1 ln\left(w_{i,t-1}/w_{h,t-1}\right) - \beta_2 ln\left(e_{i,t-1}\right) - \beta_3 ln\left(e_{h,t-1}\right) - \beta_4 S_{i,t-2} - \beta_5 d_{i,t}\right) + \alpha_7 \Delta\left(w_{i,t}/w_{h,t}\right) + \alpha_8 \Delta ln\left(e_{i,t}\right) + \alpha_9 \Delta ln\left(e_{h,t}\right) + \alpha_{10} \Delta S_{i,t-1} + \alpha_{11}$$

We estimated (6) above using the panel-regression PMG estimator.[41] Table 3 Column 1 reports the estimation result for the long-run coefficients – the vector error-correction accounting for co-integration, i.e. the component in brackets – and their average (across equations) short-run counterparts (coefficients are shown on the row, *z*-statistics are in parentheses). As the Table show, the estimated panel-regression model derived from the standard migration model finally seems to show some explanatory power of the variation in emigration, most variables are significant and their coefficients generally have the expected signs, with one relevant exception: the home activity level as measured by employment. Overall, wage ratios, foreign activity levels and networks seem to have had a positive effect on Italian migration in the long run, as expected, together with domestic employment levels, which is not in line with the model. In the short run, there are notable differences, although the coefficients should be taken with care, as they average out potential differences in the speed of adjustment across countries. The estimated "speed of convergence", the estimated α_1 coefficient is equal to 4.6, which implies a very slow convergence to the long-run equilibrium level.

Table 3 here

41 Using the XTPMG.ADO procedure for Stata as proposed by Balckburne III and Frank (2007).

Even though the model seems to be partially supported, the sign and value of the home activity coefficient appears to be mystifying. As we delved on this, we looked at alternative definition of the activity variables, to see whether it was an issue of mis-specification or "wrong" data. As no annual employment level data are available for most countries for the period, activity variables are all constructed by interpolating employment level figures, which are usually derived from decennial census data, with some variable representing the level of economic activity. Yet, as it turns out, interpolation methods are not neutral. While a simple linear trend would introduce an obviously spurious smooth behavior over time, other interpolation methods may give rise to spurious volatility. The issue somehow leads to what we expect such "activity" variable to express. If we interpolate employment levels with a variable representing the short-run behavior of the business cycle or GDP, then it will show the typical volatility of short-run variations in the level of economic activity. If we interpolate employment levels with the cumulative stock of GDP variations, for instance, then it will reflect the long-run growth of the economy. True, the ideal employment level or activity variable needed in our case would be a variable of *demand for labor*, which is not necessarily shown in employment data.[42] in the absence of a good proxy for the demand for labor, we have to rely on variables describing the level of activity.

Among the various alternative specification we tried, we tested the model with two activity variables constructed by interpolating employment levels with the cumulative growth of GDP. Results are shown in Table 3 Column 2. As it turns out, the estimated model is even less convincing than in the previous case, some of the signs are wrong and the variables are not significant.

42 A (small) country might have very high employment rates but a very low demand for labor. It may have very high employment rates growth rates but a very small size of the economy (think of a country at the beginning of the development process).

What this show is that this whole exercise appears to be extremely sensitive to how the variables are treated, how the time-series are derived, and the implications thereof. Overall, these results seem to confirm that the model, in the various specifications, is validated only under certain assumption and not in full. The results are certainly not robust to data specification. Contrary to what both Hatton (1995) and the relevant literature stemming from his contribution has claimed, we can therefore state that the standard migration model is not supported in the Italian case for the period before the Great War.

In the specifications we have estimated, Italian migration seems to be explained by wage differentials, foreign activity levels, network effects – the stock of previous migrants – , and not by the level of domestic activity. Italian migration remains mystifying.

Given the time-series properties of the variables, a simple OLS model estimation would be clearly incorrect. The aggregated one-equation specification of model (1) or (2) – all migration to all countries at once – would also be incorrect, as it would not account for the fundamental substitution effect among destination countries: if the salary of country A relative to country B falls, it would be more convenient migrate to country B as opposed to country A. A one-equation aggregated model would also be prone to spurious correlations.[43] On the other hand, various specifications of the panel-regression model show that, generally speaking, the model is not validated and that a more satisfactory explanation has to be found for the Italian migration flows observed between 1876 and 1915. Moretti (1999) and Faini and Venturini (1995) failed to explain Italian migration and yet, in their case, one could argue that it is was because of the limited coverage of their migration data – three or four destinations countries at the most -- and the

43 Consider the simple case of two receiving countries only, A and B, with only one explanatory variable, the wage rate. While the overall (aggregate) migration flow might be growing, it can well be the case that the wage rates might not be increasing, and yet the correlation with the "aggregate" wage rate (a sum) be positive. This can also be shown by looking at the covariance (and the correlations): the covariance of X with Z+Y can be positive even if the covariances of X and Y and X and Z are negative.

improper treatment of the data series. This is not our case, as our data cover 16 countries and we duly account for non-stationarity and co-integration. Differently from previous studies, when we adopt a heterogeneous panel-regression model allowing for both stationarity and non-stationarity in the variables, results are more encouraging, albeit still unsatisfying.

Yet, whether the model fails due to improper model specification or to the poor quality of the data, is to be discussed. Certainly, Italian migration must have had some proper *economic and socio-demographic* determinants, given the poor living conditions and the surplus underemployed rural labor of the time in Italy. The problem might therefore lie in the data we used. Large shares of the rural labor force were actually not properly employed and wage labor was only a little share of total employment. Industry was still quite underdeveloped, and the industrial wage rate, albeit for low-skill jobs, might have not been the real alternative for many rural laborers in excess supply. The alternative, for many, was probably between subsistence and anything outside Italy, albeit of an unskilled type. In short, one problem might lie in the wage rate variable we have used for Italy, which comes from Williamson (1995). Either a rural wage or some different composite measure might be more appropriate.

A second issue concerns the type of migration. By aggregating all migration flows to the various countries, we put together those who migrate to the US to work in the mines with those who migrate to Argentina to work in the fields and with those who go to Great Britain to work in the textile industries. Some jobs were permanent, some jobs were seasonal. Some transfers were paid by Governments, others were quite dangerous and risky. Some of the migrants came from poor internal rural areas in Italy, some others came from the cities. Some migrants were land owners looking for a job that would give them an additional income to accumulate and go back home, some others were wage laborers that did not plan do go back. In short, by aggregating over migration flows by origin (in Italy) and by profession and age and other demographic characteristics, we lose the nuances and flatten out the differences.

So, the question is: why does the model keeps failing for Italy, but does not fail for other countries? The answer, in our opinion, lies more in the nature of Italy as a unified country (at that time). When we look at emigration from, say Piedmont, we see that flows are different and differently motivated from the flows from, say, Sicily. Those who migrated from Piedmont were not similar – in economic and demographic terms – to those who migrated from Sicily. Those who migrated in the first two decades – from 1876 to 1895 – were not similar to those who migrated in the last two decades – from 1896 to 1915 –. Those who went to the US were not similar – in economic and demographic terms – to those who went to France or Australia. These effects cannot be accounted for by network variables like the one we have used, nor by wage rates or employment levels. What counts most seems to be local economic and living conditions.

In short, we can say that the heterogeneity that appears to be so important for the receiving countries, is possibly going to be an important explanatory factor of the differences in migration flows from the different parts of Italy to different countries at different times.

Also, that Italian migration outflows to specific countries are quite uncorrelated to domestic employment levels is clearly apparent even at first sight. Just as an example, consider the migration flows to the US and to Argentina and how they compare to the Italian employment level. Even when we account for Italian resident population – and we look at migration *rates* –, there appears to be no correlation between migration and employment.[44]

44 Migration rates as measured in terms of resident population may be taken as indirect measures of excess labor supply.

Graphs 2 here

Even considering that these are too aggregated measures of migration, whereby skilled workers are pooled with unskilled ones, it is evident that the (lack of) correlation might therefore be very spurious. In this sense, it would be useful to dis-aggregate migration flows by profession or sector. Aggregate national data might be a problem, too, as migration flows differed by area and region of origin over time. This point was also stressed by Hatton and Williamson (1998) .

If domestic employment levels can be taken as an indicator of labor demand – the "push" factor – then there should be a perfectly negative correlation between the flow of emigrants and the employment level at home.[45] The same considerations may apply in this case, too, whereby more dis-aggregated data might provide a different picture more in light with our theoretical expectations.

Given this evidence, it is apparent that we have reasons to expect that the simple theoretical explanation – that migration simultaneously responds to wage differentials, higher employment level abroad and lower employment levels at home – cannot simply hold for Italy as a whole, even with a proper treatment of the time-series at hand. The traditional "pull" and "push" factors cannot be held responsible, on the whole, for the huge migration outflows that Italy witnessed between 1876 and 1915. True, as the literature on Italian economic development has shown, migration occurred at an early time of industrial development, and yet not quite simultaneously. If industrial development was the driving force for increased internal labor demand and internal migration, than why did migration pick up exactly at a time when Italian GDP was taking off?

45 The same holds for domestic employment growth rates, which are certainly not more correlated with migration flows than levels.

Another issue is the treatment of the network effects. While it is documented that such effects are always fundamental in determining the direction of migration flows, it is the empirical modeling of such effects that is often unsatisfactory. As Hatton (1993) argued, lagged flow values are not good indicators, and stock values should also be considered instead. On the other hand, lagged values account for the high serial correlation in the series and should not be dismissed entirely.

5. Conclusions

The main conclusions of the paper can be summarized as follows. What we have called the "standard" migration model – best exemplified by Hatton (1995) and Hatton and Williamson (1998) – is only partially validated for the Italian migration over the 1876-1915 period. We have estimated 11 migration equations for 11 different destinations simultaneously, using a variety of panel-regression models and yet, the model specification only appears to be (partially) supported in the heterogeneous case, when accounting for co-integration in the series. As the problem does not appear to be one of improper treatment of the time-series properties of the data, we conclude that there can be two reasons for such failure: that we have used and constructed the "wrong" data series and that the model specification is inappropriate. As the heterogeneous panel regression models confirms, it is the heterogeneity in the migration flows – by country, and thus possibly by area or region, by sector of employment or by social and professional status and what else – that counts.

In sum, the question remains: why does the simple migration model function for many countries but not in the Italian case? The answer, in our opinion, lies in the disaggregation that has to be made, both at the geographical level – migration determinants are different by area: emigration greatly varied across regions – , at the time level – flows changed over time – and at the level of composition of the migrant pool – not all migrants were equal by economic and demographic characteristics –. This is all matter for future research.

Italian emigration must have had specificities that are not account for in the standard "aggregate" model. "Italians migrated to a much wider variety of destinations than did emigrants from any other European country", as Hatton and Williamson (1998) stated, which adds to the diversity of migration flows. Also, the answer to Hatton and Williamson (1998) question cited above: "To what extent can Italian emigration be explained by the same economic and demographic forces?" seems to be, in our opinion: "only to a partial extent, there must be something else." The model could not fully account for the surge in Italian emigration after the 1890s, and the key to the answer might be that that is not a true representation of the increased flow of migrants *settling permanently abroad* as they tended to go back.[46]

In the literature, it is said that "rising European emigration was driven chiefly by natural population increase, industrialization and the rising emigrant stock itself".[47] In our opinion, these are not *explanations.* Why was there a rising population? The population surplus, which started much earlier particularly in rural areas, was faced with an agrarian crisis, low productivity in agriculture, low agricultural salaries and higher food prices, all factors that are not reflected in the aggregate nation-wide variables we have used in testing the model. That "rising per-capita income releases the poverty constraint", as Faini and Venturini (1994) claimed, cannot be taken as a factor for increasing migration. What the dis-aggregated data seem to show is that the segmentation across Italian regions and across different destinations is not due to the North-South dualism, but

46 An estimated third of all Italian emigrants went back home, i.e. they did not settle abroad. "Net migration" , i.e. the difference between the outflow and the inflow, fell after 1900. "Italian emigration was accompanied by a rising tide of return migration", pointed Hatton and Williamson (1998, p. 95): of course, Italians emigrated in order to earn money and go back, not in order to settle. So this was already a difference in motivations.

47 See eg. Hatton and Williamson (1998, p. 98).

to the existence of segmented labor markets and segmented emigration streams. This also shows up in the different motives of Italian emigrants. Just by looking at the profiles of migrants we see the connections with temporary emigration and high return rates.

These are all different directions that future research will have to explore to come up with a convincing, robust and reasonable explanation of Italian emigration in the period before the Great War. A first step was needed, yet: testing the standard aggregate model and see how much of the overall flows it can explain. Not much, not all, it seems.

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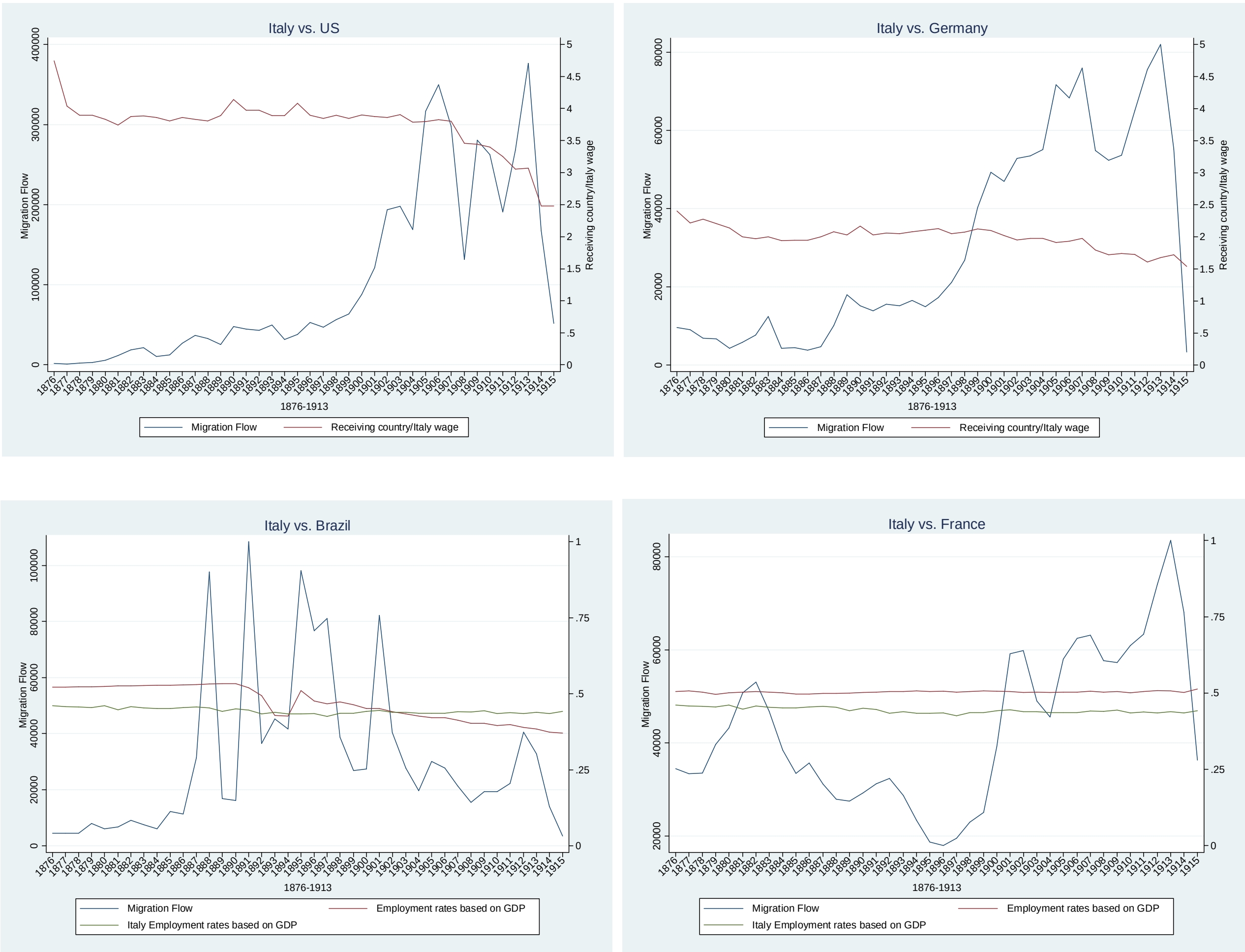
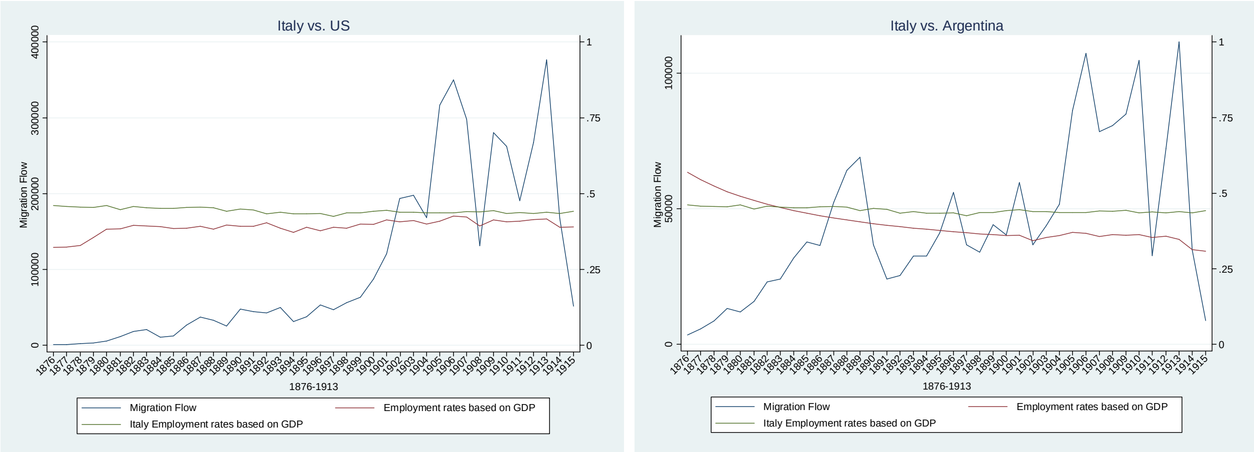
Annex I



Graph 1: Gross Migration from Italy.

Sources. Migration flows: Annuario Statistico delle Migrazioni (serie). Wage ratios: Authors computation from Williamson (1995). Employment rates: Authors computation from National Censuses



Graph 2:Employment and Migration

Sources. Migration flows: Annuario Statistico delle Migrazioni (serie). Wage ratios: Authors computation from Williamson (1995). Employment rates: Authors computation from National Censuses

Annex II

	Italian Migration			
	1876-1885	1886-1995	1896-1905	1906-1915
Migration flow				
Total	706906	1558975	3156893	5002895
Europe				
-Share of total Emigration (%) -	*0.53*	*0.35*	*0.28*	*0.23*
Benelux	2053	2261	6108	9031
France	286104	396239	406780	503639
Germany	71208	127986	434765	586005
Iberia	6765	6814	6992	7547
Scandinavia	302	844	975	1883
UK	5419	5976	23521	34643
Oversea				
-Share of total Emigration (%) -	*0.47*	*0.65*	*0.72*	*0.74*
Argentina	175699	414425	489549	716042
Australia	990	2261	6108	9031
Brazil	69535	216559	450954	503539
Canada	1198	7557	23227	116585
US	87633	377068	1305801	2377006

Table 1: Italian migration

Migration Rate per thousands 1878-1913

m_t	Hatton & Williamson 1999	m_t	Hatton & Williamson 1994	Δm_t	Differences & Levels
Costant	0.991	Costant	0.230	Costant	-0.234
	(1.19)		(0.21)		(-0.87)
$Ln(W_f/W_h)_t$	0.268	$Ln(W_f/W_h)_{t-1}$	0.229	$Ln(W_f/W_h)_{t-1}$	0.017
	(1.30)		(1.23)		(0.53)
$Ln(e_f)_t$	0.106	$Ln(e_f)_{t-1}$	0.027	$Ln(e_f)_{t-1}$	-0.048
	(0.45)		(0.12)		(-0.87)
$Ln(e_h)_t$	1.171	$Ln(e_h)_{t-1}$	0.349	$Ln(e_h)_{t-1}$	-0.239
	(1.34)		(0.28)		(-0.78)
Δpop_{t-15}	-10.877				
	(-1.46)				
M_{t-1}	0 .653 ***	M_{t-1}	0.785 ***	M_{t-1}	-0.028 **
	(13.93)		(17.48)		(-1.91)
M_{t-2}	0.175 **				
	(2.40)				
$Network_{t-1}$	0.0007 **	$Network_{t-1}$	0.001 ***	$Network_{t-2}$	0.0001 *
	(1.99)		(2.60)		(1.71)
1901-1913	0.123 *				
	(0.081)				
C_t	-0.00002	C_t	-0.00002	C_{t-1}	-0.00007
	(-1.52)		(-1.55)		(-0.30)
		$\Delta Ln(W_f/W_h)_t$	0.920	$\Delta Ln(W_f/W_h)_t$	0.077
			(1.42)		(1.48)
		$\Delta \ln(e_f)_t$	0.711	$\Delta \ln(e_f)_t$	0.152
			(0.94)		(0.85)
		$\Delta \ln(e_h)_t$	1.565	$\Delta \ln(e_h)_t$	-0.364
			(1.28)		(-0.58)
				ΔC_t	-0.142
					(-0.28)
				$\Delta Network_{t-1}$	0.055 ***
					(5.40)
Obs	374		374		374
Groups	11		11		11
R^2	0.83		0.82		0.83

Table 2: Homogeneous panel approach. *, and ***, are 10,5 and 1 per cent significance level respectively.**

Migration Rate 1978-1913 Emp on GDP GME				Migration Rate 1978-1913 Emp on GDP Growth GME			
Convergence Coefficient				Convergence Coefficient			
M_{t-1}	-0.046 *			M_{t-1}	-0.036 *		
	(-1.79)				(-1.90)		
Long Run Coefficients		Short Run Coefficients		Long Run Coefficients		Short Run Coefficients	
$Ln(W_f/W_h)_{t-1}$	6.565 **	$\Delta Ln(W_f/W_h)$	0.856	$Ln(W_f/W_h)_{t-1}$	6.772 *	$\Delta Ln(W_f/W_h)$	0.873
	(2.38)		(1.25)		(1.85)		(1.28)
$Ln(e_f)_{t-1}$	12.012 *	$\Delta Ln(e_f)$	1.417 *	$Ln(e_f)_{t-1}$	9.660	$\Delta Ln(e_f)$	0.921 **
	(1.65)		(1.77)		(1.49)		(2.04)
$Ln(e_h)_{t-1}$	19.913 **	$\Delta Ln(e_h)$	0.032	$Ln(e_h)_{t-1}$	14.681	$\Delta Ln(e_h)$	-0.113
	(2.19)		(0.08)		(1.33)		(-0.32)
$Network_{t-2}$	0.006 *	$\Delta Network$	0.038	$Network_{t-2}$	0.006 *	$\Delta Network$	0.038
	(1.89)		(2.04) **		(1.91)		(2.09) **
C_{t-1}	-0.289	ΔC	-3.232	C_{t-1}	-0.465	ΔC	-9.564 *
	(-0.32)		(-1.19)		(-0.43)		(-1.92)
		Costant	18.851			Costant	27.351
			(2.00)				(1.87)
N° of areas			11				11
Observation			385				385
Log likelihood			1037.55				1036.31

Table 3: Heterogeneous panel approach. *, and ***, are 10,5 and 1 per cent significance level respectively.**

Alma Mater Studiorum - Università di Bologna
DEPARTMENT OF ECONOMICS

Strada Maggiore 45
40125 Bologna - Italy
Tel. +39 051 2092604
Fax +39 051 2092664
http://www.dse.unibo.it