

PROMOTING A COMMON UNDERSTANDING OF MIGRATION TRENDS



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Publisher: International Organization for Migration
47C Abu El-Feda Street, Zamalek
Cairo 11211 Egypt
Tel: +2 02 2736 5140/1
Fax: +2 02 2736 5139
E-mail: iomegypt@iom.int
Website: www.iom.int

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Michele Bruni



IOM Development Fund
DEVELOPING CAPACITIES IN MIGRATION MANAGEMENT

About the author



Michele Bruni's research has focused on the development of stock and flow models and their application to the analysis of labour market, migration, and more recently to the definition of a model to assess future labour needs and immigration flows and a new procedure to build demographic projections based on these estimates.

Michele Bruni has taught at the Universities of Calabria, Bologna and Modena and was a visiting professor at the University of Shanghai. He is a member of the Center for the Analysis of Public Policies, as well as the Faculty of Economics M. Biagi of the University of Modena.

For more than 20 years, he has participated as labour market expert in numerous European Union, Asian Development Bank and World Bank funded projects in Eastern Europe, Africa and South-East Asian countries. Presently, he lives in Beijing, where he is team leader and resident expert of the European Union-China Social Protection Reform Project.

He holds a Laurea in Political Sciences from the University of Florence and a PhD in Economics from the University of California, Berkeley.

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Executive summary

The primary goal of the paper is to propose a methodology to govern migration flows in an economically efficient and humane way. The proposal will introduce an alternative interpretation of economic migration flows that will allow for the classification of countries in potential departure and arrival countries, and more importantly to explain arrivals. The model will then be used – in substitution of the mechanical and unrealistic hypothesis that are presently adopted – to obtain a new procedure to jointly build labour market and demographic scenarios. The procedure will allow for the estimation of future labour needs and migration flows that will affect the European Union and countries characterized by the most significant declines in working-age population (WAP), as well as analyse the socioeconomic impacts of these migration flows. The same procedure will be done for Egypt, as a counter example of a country likely to send migrants. After discussing the extent to which migrations are the only possible solution to the structural lack of labour supply, the paper will present a detailed proposal on how to address, in a cooperative way, the mass migration that will take place from Africa to the European Union, both across the Mediterranean and increasingly through the Balkan countries.

The paper is structured in three parts and includes a set of annexes, which discuss topics relevant to the issue of migration.

PART 1

A NEW METHODOLOGY FOR JOINTLY BUILDING LABOUR MARKET AND DEMOGRAPHIC SCENARIOS

Migration theories

In the last 60 years, economists, sociologists, geographers and other social scientists have proposed numerous models to explain migration flows. They have built not only on the paradigms of their disciplines and on new approaches, but also on previous empirical work; more specifically the initial contribution by Ravenstein, the development of the push–pull analytical framework, and the descriptive approach of demographers who have continued to propose, albeit in an informal way, that migration flows are activated by a demographic growth not mirrored by coherent economic growth.

After reviewing the respective contributions of macro and micro neoclassical models, the dual labour market theory, and world-systems theory, this paper concludes that none of these models or theories can provide a tool that would allow to either define potential arrival and departure countries, or to forecast how many economic migrants will be attracted by arrival countries.

As a result, national and international statistical offices do not have reliable tools to forecast the migration balance and have had to resort to a default projection: tomorrow will be almost the same as today.

Demographic forecasts

The standard procedure for making demographic projections is based on three sets of independent assumptions regarding fertility, mortality and migration. This model also tacitly assumes that there is no interaction between fertility, mortality and migration and more generally between the economic and the demographic spheres.

These assumptions regarding fertility and mortality are acceptable in light of the fact that both are very slow variables. However, the most crucial hypothesis is that concerning migration, especially given the fact that the migration balance is becoming in many developed countries the most important determinant of demographic trends. According to the Population Division of the United Nations Department of Economic and Social Affairs (UN

DESA), after an initial drop, the migration balance of every country is expected to remain constant until 2050, and then is expected to progressively decrease. This assumption is highly debatable for a number of reasons. In the first place, it does not reflect the migration trend of the last 60 years. Secondly, it leads to very different outcomes in the 65 countries that are going to register a natural decline in WAP between 2015 and 2050 so that: (a) 17 countries will register a positive migration balance that will more than offset the decline in WAP; (b) 31 will register a migration balance that is positive, but insufficient to offset the natural decline; and (c) 17 (including China) will register a negative migration balance that will exacerbate their natural decline in WAP. This paper also shows that according to UN DESA, numerous countries will register an increase or a decline in WAP that would result in a very difficult, untenable, socioeconomic situation.

It will be argued that demographic projections should provide the necessary data for designing and implementing a vast array of structural policies from education and welfare to transport and infrastructure – and, last but not least, migration policies. However, to be capable of this, population projections need to be based on realistic assumptions and propose realistic results.

A new model to explain and forecast immigration flows

The idea proposed by this paper is that *migrations are demand driven in the presence of an unlimited supply of labour in the developing and least developed countries.*

The model is based on a stock-flow representation of the labour market in which the equilibrium requires that generational (first-time) entries into the labour force (the labour supply in terms of flows) are equal to the sum of generational exits from employment due to retirement and death and the number of additional jobs created by the economic system. In other words, the labour market is in a situation of flow equilibrium if the number of jobs created by the economic system in a given time interval is equal to the difference between generational entries into and generational exits from the labour force.

This analytical framework allows us to define two crucial situations: that of a structural shortage of labour (SSL) and that of a structural excess of labour (SEL). The first situation exists when the generational entries into the labour force (the generational supply of labour in terms of flows) remain lower than the entries into employment (the generational demand of labour in terms of flows) for a long time, and changes in the real wage cannot equate the two variables.

Conversely, a SEL exists when the gap between the demand and supply of labour is such that the economic system cannot create a sufficient number of jobs to close it. The countries that present an SSL are potential arrival countries, and those that present an SEL are potential departure countries. The model assumes that an SSL will necessarily end up attracting the number of migrants necessary to close the gap between labour demand and supply, given the presence of an unlimited supply of labour in SEL countries.

The relevance of this approach becomes evident when the enormous impact that the demographic transition will have on the evolution, structure and localization of the population of the planet during this century is considered; yet, this remains largely neglected by demographers and especially by economists, given their focus on financial phenomena rather than human factors.

The demographic transition

The “demographic transition” is defined as the passage from a “traditional” demographic equilibrium, characterized by high rates of fertility and mortality, to a “modern” demographic equilibrium, characterized by low rates of fertility and mortality. However, contrary to general expectations, the total rate of fertility has already dropped well below two children per woman in numerous developed and developing countries.

As it develops, the demographic transition at first leads to an increasing growth in the total population, which is then followed by an increase but a declining rate, and which finally leads to the total population starting to decline. The same trajectory is followed by WAP, which at a global level will probably start to decline at the beginning of the second half of the century, opening up a new economic era in which employment growth at the planet level will not be “required” anymore.

The central point for the discussion is that the demographic transition, over a period of almost 200 years, began in different countries at different moments in time. This has led to an increasing demographic polarization of the planet: an increasing number of countries in which WAP will dramatically decline (this is expected for 111 such countries in 2055), and a decreasing number of countries in which WAP will explode. According to the model, this demographic polarization creates the precondition for a growing amount of international migration.

A new procedure for jointly building labour market and demographic scenarios

The introduction of this model into the standard procedure for making demographic projections will result in a new procedure, the aim of which is to build labour market and demographic scenarios. The procedure is comprised of two stages.

The first stage projects WAP scenarios by taking into account on the one hand, the natural balance created by generational entries and exits, and on the other, alternative immigration flows hypothesized according to demographic trends, participative behaviour and economic growth, that is, by the interaction of the demographic and economic spheres.

The second phase enables us to project scenarios for the total population by following the standard procedure, namely by estimating the number of births (which reflects also the number of immigrated women and their total fertility rate (TFR)) and the number of the elderly.

This procedure therefore generates fully-fledged demographic scenarios based on demographic trends, alternative rates of labour market participation, and alternative rates of economic growth, as well as the usual hypotheses on fertility and mortality.

PART 2 THE SCENARIOS

Demographic trends in Europe

The second part of the paper highlights the fact that between 1950 and 2010, due to the progress of the demographic transition, Europe has moved from a situation of demographic growth created by the “natural balance” (the difference between births and deaths) to a situation of slow growth due only to the migration balance, while a related process of population ageing has been setting in. Another way to observe the phenomenon is in the fall of the TFR from 2.7 to 1.5 children per woman, while the net yearly average number of migrants has progressively increased from -200,000 to 1,850,000.

A similar trend has affected the 28 countries of the European Union, whose population represents a little more than two thirds of the total European population. The natural balance has declined from 2.9 million more births than deaths to a present value of around 100,000, while the migration balance became positive at the beginning of the 1970s, and between 1995 and 2010 has contributed by more than 80 per cent to the growth in total population.

An analysis of European Union countries does indicate some common elements, but in a rather nuanced context. More specifically, the TFR has been below the replacement level in all European Union countries since the end of the twentieth century, but the entry of different countries into this situation has been spread over a period of around 35 years: the first entry (Hungary) took place at the beginning of the 1960s and the last (Cyprus) at the end of the century, with the northern countries preceding the southern ones. As a result, the natural balance is still positive in 16 European Union countries, while in the other 12, it has been negative for quite a while, the oldest case being that of Germany. The migration balance is still negative in 7 countries, and positive in 21; 11 have witnessed a change in the sign of the migration balance, from negative to positive or vice versa, in this period.

European Union migrant stock

According to UN DESA in 2013, migrants comprise 10 per cent of the European Union population (51 million), a value that underestimates the number of immigrants that arrived in the last 40 years given that many of them have become

citizens of the country of arrival. Stock data shows that in the last 23 years, three quarters of population growth has been due to migrants. The increase peaked at the beginning of the century, while in the following years, the migration balance reflects the negative impact of the economic crisis that has heavily hit many European Union countries.

Given the different sizes and the different demographic and economic trends between European Union countries, migrants are concentrated in five countries, ranging between 19 per cent (Germany) and 11 per cent (Italy) of the migrant population in the European Union, with the United Kingdom, France and Spain having intermediate values. The same five countries account for almost 82 per cent of the increase in migrant stock registered between 1990 and 2013. The ranking here is different, however, with the growth of the migrant population driven by Spain at 24 per cent, followed by Italy and the United Kingdom at 18 per cent, Germany at 16 per cent and France at only 6 per cent.

Luxembourg is the country with the highest percentage of migrants as a share of its population (43.3%). Thirteen countries, including four of the big five (Germany, United Kingdom, France and Spain) register values between 10 and 20 per cent. At the lower end of the ranking are mainly Eastern European countries that are still predominantly departure countries.

The demographic future of Europe according to the standard projections

According to UN DESA between 2010 and 2100, Europe's total population is projected to decline by a little more than 100 million (13.7%), by 31 million in the first 40 years (-4.2%), and by 70 million between 2050 and 2100. This phenomenon will affect both European Union and non-European Union countries in Europe, but is projected to be much more pronounced in the latter. The population of the 28 European Union countries is projected to decline by only 31 million (-6.2%) as a result of a modest expansion of 6.1 million in the first period and a contraction of 37.2 in the second. In the non-European Union countries, the contraction is expected to be more pronounced in the first period than in the second (-37.1 million versus 33.2 million) for a total value of 70.3 million (-29.8%).

It must be emphasized that WAP, which plays a central role in the model, is projected to decline by a much higher amount, at around 150 million, comprised of 81 million in the European Union and 69 million in the countries that are not members of the European Union. This scenario discounts the fact that

according to UN DESA, the migration balance will not be in line with recent values, being projected to be at around 40 million between 2010 and 2050, and around 20 million in the following 50 years, generating a net total of around 60 million, with 50 million of this figure apportioned to the European Union.

The labour market situation

Between 2008 and 2015, the European Union's level of employment declined by 2.6 million as a balance between a loss of 6.3 in the first five years and a growth of 3.7 in the following two years. In the same period, WAP has progressively declined so that in 2015, its level was 5.1 million below that in 2008. As a consequence of these trends, the rate of employment declined in the first period and increased in the second, reaching a value slightly above that of 2008 (67.3% versus 67%).

It should be underlined that the decline of WAP represents an inversion of the previous positive growth that characterized the 1990–2008 period, which caused an increase in WAP of 16 million. This suggests that the dynamic of WAP is not only determined by natural demographic trends, but also, and increasingly, by the impact of economic trends.

The labour markets of European Union countries present a variety of extremely different situations, in addition to having followed very different evolutions over the last seven years. In 2015, the national rate of employment ranged from a maximum of 78.8 per cent registered in Sweden to a minimum of 51.8 per cent registered in Greece, while the rate of unemployment included a minimum of 4.7 per cent in Germany and a maximum of 25.3 per cent in Greece. Furthermore, if the five years of crisis in which the European Union's total employment declined by 2.8 per cent is considered, very different situations emerge. In nine countries, employment increased by 3 million, with record percentage values in Luxembourg (+19.7%) and Malta (10.3%), while 63 per cent of the growth took place in Germany. The other 19 countries registered a total decline in employment of 9.3 million. In six countries (Bulgaria, Croatia, Greece, Latvia, Portugal and Spain), the decline was in excess of 10 per cent, the two countries most hit being Greece (-23.1%) and Spain (16%). Almost two thirds of the jobs destroyed in this period were located in three countries: Spain (-3.3 million), Italy (-1.4 million) and Greece (-1 million). The 2015 data shows that almost all European Union countries have already emerged out of the crisis; only three (Austria, Finland, France) registered a decline in employment in the last two years.

Almost half of the 24.5 million unemployed in the European Union are concentrated in three countries (Spain, Italy and France). The highest unemployment rates are registered, in order, by Greece (25.3%), Spain (22.6%), Croatia (16.3%) and Cyprus (15.9%), while France, Italy, Portugal, Slovakia and Latvia also have a two-digit unemployment rate.

In conclusion:

- (a) The majority of European countries have exited the crisis and are on a path of employment recovery; and
- (b) It is evident that there is not yet a fully unified European economy and even less a unified European labour market.

Labour market and demographic scenarios, 2015–2030

A set of assumptions regarding labour market participation (constant or reaching a value of 75% in 2030), employment growth (constant, 6% and 12% over the 15-year period), and a 1.1 reactivity of the foreign labour supply to the European Union labour shortage, suggests that over the next 15 years, the European Union will need around 2.2 million migrants per year, the final value depending mainly on the rate of employment growth.

A basic point of the projection is that in spite of an inflow of migrants, the rate of unemployment will decline in all scenarios, the decline being positively related to employment growth and therefore also to immigration. Another very important result is that, contrary to what has been suggested by the standard methodology of demographic projection, a fertility rate below replacement level will lead to an increase in population and an even more pronounced increase in WAP, if we allow for migration as a response to the SSL that inevitably occurs. Moreover, since the size of the migration balance is directly related to the decline in WAP and the increase in employment, the rate of growth of WAP will also depend on the rate of economic growth. The increase in WAP, together with the increase in the number of births brought about by migrations and the natural process of ageing, will then produce an increase in total population. The report also shows that migration will reduce the inevitable ageing process set in by the demographic transition.

These results are supported by a series of case studies conducted for the European Union countries that will experience the most pronounced decline in WAP between 2015 and 2030: Germany, Italy, Poland, Spain, France and the United Kingdom. In spite of the very large differences between the six countries in terms of participation, employment and unemployment rates, projected decline in WAP and socioeconomic burden, the scenarios clearly show that for all of them, albeit to different degrees, a positive migration balance is not an option but a necessary condition to expand production and that, contrary to common belief, migration will contribute to improving the labour market situation, as well as reduce the ageing process and therefore lessen the increase in the socioeconomic burden.

This report proposes similar scenarios also for Egypt (a country that can be considered representative of other countries of the southern shore of the Mediterranean and more generally of Africa), but with the different purpose of estimating the excess of labour supply that will be generated in the next 15 years (under different assumptions of participation and employment growth), and therefore the emigration needs of the country. This allows us to analyse the impact of differing quantities of emigration on the main labour market and demographic variables. As was to be expected, emigration would not only have a beneficial effect on both the labour market and the demographic evolution of the country, but it is evident that emigration should also become a relevant labour market policy. An absence of emigration would result in growing unemployment, but more importantly would also produce a situation in which the “weaker” components of WAP (such as women and the less educated) would spend their life outside the labour market, creating an explosive social situation.

PART 3

THE MANAGEMENT OF MEDITERRANEAN MIGRATION FLOWS: A PROPOSAL

Before discussing how the European Union countries and the countries on the southern shore of the Mediterranean should act in order to tackle, in an economically efficient and humane manner, the symmetrical problem of a structural shortage and SEL that will affect them in the course of this century, this paper briefly reviews the literature on the most relevant impacts of migration, mainly on arrival countries, but also on departure countries.

The impact of migration on arrival countries and departure countries

Contrary to the common beliefs of politicians and citizens, the literature supports the idea that there is very little in the way of adverse labour market effects produced by migrants in arrival countries, and it finds only minor labour market displacement effects, even after very large migrant flows. Some larger effects have been found with regard to the less educated sector of the population or earlier migrants, that is, the closest substitutes on the labour market to the new migrants. It has also been shown that migration has a positive effect on growth, especially if the majority of migrants are highly skilled.

Finally, there is a general agreement that migrants have a positive financial impact. This has also emerged in a series of recent studies conducted, among others, in Germany, the United Kingdom and Italy. In the case of Germany, Bonin concludes that in 2012, the 6.6 million immigrants present in Germany created a net gain of EUR 3,300 each, with a total of 22 billion (2014). Moreover, Germany will continue to gain in the future since over the course of their lives, migrants will pay the State more than they will receive in transfer payments. Finally, it is argued, in a rather reductive vein from the author's perspective, that Germany should accept 200,000 migrants every year, 20 per cent low skilled, 50 per cent medium skilled and 30 per cent high skilled. The proposal is that the net gain produced by the migrants should be used to finance the training of new young migrants.

In the case of the United Kingdom, a paper by Dustman and Frattini (2014) shows that migrants in the United Kingdom are not a drain on the country's finances and pay out far more in taxes than they receive in State benefits, so much so that between 2001 and 2011, their net fiscal contributions amounted to GBP 35

billion. Another very thought-provoking point made by the Dustman and Frattini paper is that migrants also provide savings for the taxpayer by bringing with them educational qualifications paid for by their countries of origin. According to the authors, between 1995 and 2011, European migrants endowed the United Kingdom labour market with an amount of human capital that would have cost GBP 14 billion had it been produced through the British education system, and non-European migrants provided human capital that would have cost more than GBP 35 billion.

Recent studies show similar results in the case of Italy. A survey paper by Stefania Gabriele (2012) reaches the conclusion that the fiscal contribution of migrants is positive, and that this undoubtedly assists the Italian pension system. Estimates suggest that the positive role of migrants will continue also in the long run, but it is clear that this will depend on the capacity of the system to promote the integration of migrants into the regular labour market. Some rough computations have very recently been put forward by the Leone Moressa Foundation, which show that in 2012, Italian residents born abroad contributed EUR 16.3 billion to the Italian budget, while the total amount paid towards them by Italy was EUR 12.6 billion.

The impact of emigration on departure countries has attracted much less interest and attention. The most debated topic is the brain drain. However, different evaluations have been proposed, certainly on the basis of different assumptions. The capacity of remittances in boosting the economy of departure countries will depend on their use. If they are used for consumption purposes, as is often the case, remittances provoke an increase in the price level and in imports, as well as an overvalued exchange rate. Therefore, the problem is that of devising policies in order to divert remittances to productive purposes.

Some final observations

From the author's perspective, this literature presents a major problem insofar as it considers economic migration only on the basis of its economic advantages and disadvantages. This paper argues that in fact migration represents a necessity for both arrival and departure countries, a structural phenomenon that is going to be with us for a very long time as a result of the growing demographic polarization between an increasing number of countries that will be affected by an SSL, and a declining number of countries that will be affected by an SEL.

Once this is taken into account, it is seen that migration is a relevant (perhaps the only?) solution to the problem of providing the arrival country with the workforce necessary for economic growth (without forgetting that migrants are also an important source of new entrepreneurship). Above all, migrants can also contribute to the increase in total fertility that is necessary to move towards the equilibrium in WAP, the only long-term solution to the SSL. In assessing the role of migrants in arrival countries, the focus should therefore move from evaluating the advantages and disadvantages of migration flows, to that of estimating the quantitative and qualitative needs for foreign labour, and of defining the correct way to manage the unavoidable migration flows in an efficient, economically correct and human way.

Before discussing how to properly manage migrations across the Mediterranean basin, the paper analyses whether migration is the only possible answer to the SSL. At the theoretical level, the answer is obviously no – theoretical alternatives exist but the question is: are they feasible and sufficient?

Alternatives to migration

The paper considers two alternatives: (a) reducing economic growth in order to avoid immigration; and (b) adopting industrial and labour market policies aimed to make the available WAP sufficient enough to reach the desired rate of growth.

The first strategy would consist of obtaining an increase in well-being (for the purposes of this study, this is identified as GDP per capita) using only the local labour force. The example of Germany shows that in order to reach a rate of growth in GDP per capita by, for example, 20 per cent in the next 15 years, the rate of growth in productivity should exceed that GDP by around 16 percentage points, that is, the expected percentage decline in WAP. Empirical evidence shows that no country has ever accomplished such a feat (an increase in productivity in excess of the increase in production) and that in the long run, all advanced and developing countries have increased their employment level.

The paper then discusses the measures that could be activated in order to reduce labour demand and/or increase labour supply. Increasing productivity and delocalizing production are typical examples of the first type of measure; increasing labour market participation, restructuring the phases of life, and increasing labour mobility between European Union countries are examples of the second strategy.

The paper argues that all these policies can reduce the need for migrants but that, in presence of an SSL, as in the case of European Union countries, they cannot be the solution.

Conclusions and the proposed response

The final part of the paper recapitulates the main thesis that migrations are produced by a structural lack of local labour supply in the presence of an “unlimited” supply of labour in developing and underdeveloped countries. Since the demographic transition that is now affecting all countries in the world will almost certainly determine an increasing demographic polarization, international migration flows will most probably increase.

One of the epicentres of this phenomenon will be the Mediterranean, which divides developed countries that will be affected by a growing structural need of labour and developing countries that will register a growing SEL. The intermediate scenario suggests that from now until 2030, the European Union will need on average 2 million non-European Union migrants per year. At the same time, the Middle East and North Africa (MENA) countries, with Egypt being a prominent example, will be affected by a SEL above the 2 million needed by the European Union. This demographic situation would make it, if not impossible, certainly extremely difficult for sustainable economic growth in the former countries and would result in poverty and social unrest in the latter. In conclusion, for both European Union and MENA countries, migration seems to be not an option but a necessity.

The present paper represents the first step of a process that should lead to a cooperative management of migration flows between the southern and northern shores of the Mediterranean, with an aim to better plan for and maximize the potential of demand-driven migrations.

The second step would be the construction of a high-level political understanding that: (a) migrations flows in increasing numbers are unavoidable since they originate from an SSL; (b) migrations will have a positive impact at the socioeconomic level on both arrival and departure countries; and (c) migration will contribute to the security of the Mediterranean area because radicalism finds a fertile soil in unemployment, poverty and a lack of job opportunities or socioeconomic prospects.

This process should promote interventions to assist countries across the Mediterranean to better plan for and maximize the potential of demand-driven migration. To this end, the programme foresees three outcomes that correspond to three subsequent phases of implementation, with each building on the cooperation created during the previous steps to achieve higher degrees of mutually beneficial long-term results. These are as follows:

- (a) European and potential sending countries across the Mediterranean agree on realistic forecasting methods for their respective labour migration needs;
- (b) European and potential sending countries coordinate evidence-based labour migration policy and mechanisms through a Labour Migration Observatory; and
- (c) Labour migrants are actively matched to job opportunities in Europe through a Placement Centre with access to labour market information in both sending and receiving countries.

Annexes

The paper includes a set of annexes that discuss issues concerning migration:

- (a) Demographic and labour market scenarios for six European Union countries;
- (b) The institution of an Education Migration Fund in charge of reimbursing the expenditure by departure countries in the education of migrants through agreed-upon investment in education, the fundamental factor in economic growth and social development;
- (c) The link between economic development, migration and the social burden that affects the countries in the last phase of the demographic transition in which WAP is declining;
- (d) The necessity of understanding that the only solution to migration is a demographic trend coherent with economic growth, both in arrival and departure countries and the role that migration can play in reaching this solution; and
- (e) The possibility that the structural need for foreign labour could provide a more humane and less costly solution to the problem of refugee camps.

Introduction

Migration has become a dominant aspect of the European scene and is now at the centre of a confused political debate. An increasing number of European Union countries are adopting restrictive measures that are threatening one of their most important achievements – the borderless Schengen area. At the same time, an unprecedented number of people, many of whom are women and children, are dying while crossing the Mediterranean waters and the militarized borders of the Balkans.

The dominant view spread every day by all media and largely accepted by experts and politicians is that what we are witnessing is a massive escape from war, famine and lack of job opportunities, an invasion of people that are not needed and causing serious social and economic problems. This interpretation is used by European Union countries to justify not only the adoption of restrictive measures but also financial support to build new and bigger refugee camps outside the borders.

The irrational fear created by the massive and desperate exodus of hundreds of thousands of people from war zones is cancelling the memory of the exodus, of the capacity to take care of the 15 million refugees created by World War II; but more importantly is blurring the real issue, the fact that during this century, the European Union countries – together with all the other countries in the last phase of the demographic transition – will need hundreds of millions of migrants to continue along the path of economic growth and social development.

The goal of the paper is to introduce this alternative long-run vision of migration flows based on the idea that economic migrants, as well as refugees, are, and have been, historically pulled by countries characterized by the presence of a structural lack of labour supply and sustain this position by jointly built labour market and demographic scenarios.

The aim is to provide a theoretical and empirical background more suitable to identify the policy measures necessary to govern international economic migration flows in an economically efficient and more humane way, starting from the perspective that they are necessary for arrival countries, beneficial to both arrival and departure countries, and that they will inevitably increase to unprecedented values over the next 30 to 40 years.

THE STRUCTURE OF THE PAPER

The paper is organized into three parts. The first part will discuss migration theories, projection methodologies and an alternative procedure for jointly building demographic and labour market scenarios. In the second part, this report presents alternative demographic and labour market scenarios for the European Union countries and Egypt that well represents the potential departure countries. In the third and final part, this report will discuss how to manage migration flows in order to make them beneficial to both departure and arrival countries.

The theoretical analysis

It will be shown that the adoption of mechanical and unrealistic hypotheses by national and international statistical institutes as a basis for demographic projections is due to the lack of a migration model capable of explaining as well as forecasting migration flows from the perspective of arrival countries. In turn this situation is as a result, on the one hand, of the descriptive nature of demography, and on the other, of the basic assumptions of the prevailing economic paradigm.

This report will then argue that the projections proposed by the Population Division of the United Nations Department of Economic and Social Affairs (UN DESA) present contradictory results stemming from the use of mechanical assumptions on migration not linked to the demographic and economic dynamic,

and from there, will discuss why the demographic representation of the planet's future is unrealistic from a socioeconomic perspective.

The critical analysis of the projections made by UN DESA will make evident that the only way to avoid these shortcomings is to base demographic projections on a formal model capable of explaining and forecasting immigrations flows.

The model, based on a stock-flow approach to labour market analysis, allows for the presence of structural disequilibria between labour demand and supply. In this approach, both a structural shortage of labour (SSL) and a structural excess of labour (SEL) are possible as a result of mainly demographic trends, as well as economic events. The model posits that countries characterized by an SSL attract migrants from countries with an SEL. In substance, migration is demand driven in the presence of an unlimited international supply of labour. Both the SSL and the SEL are the result of the interaction in the labour market between the demographic sphere that affects the supply of labour, and the economic sphere that affects the demand.

The migration model will then replace the hypotheses used by UN DESA to produce a new procedure for jointly building labour market and demographic scenarios. In the model, the level of population will depend on the number of migrants that in turn is related to demographic trends, the changes in the rate of participation in the labour market and in the level of employment.

Finally, an analysis of the demographic transition that is by now affecting every country in the world will show that the planet is inevitably moving towards a growing demographic polarization that will witness the co-presence of an increasing number of countries characterized by SSL and a declining number of countries that will have SEL. According to the model, this polarization will inevitably provoke migration flows of unprecedented size.

Although the opinion expressed in this paper is the most probable outcome of the planet's demographic and economic situation, two possible alternative paths that could be followed by the countries affected by a massive decline in potential labour supply will be discussed: (a) the delocalization of production; and (b) the progressive reduction of the production level, as well as their relative viability, advantages and disadvantages.

The empirical study

In this section, the report will present labour market, migration and demographic scenarios for the European Union and Egypt based on the migration model and the new procedure for jointly building labour market and demographic scenarios.

Policy suggestions

The last part of the paper will be dedicated to proving that, if properly managed, migrations can be advantageous both to arrival and departure countries. However, a series of important steps must be taken.

The first step is to recognize that in an increasing number of countries, mass migration is unavoidable if these countries decide to continue along a path of economic growth. The second is that the structural nature of the phenomenon makes it possible to build reliable scenarios of the quantitative need for foreign labour over a 15–20 year horizon, while within a shorter time scale, it is possible to articulate the need for foreign labour by educational level and typology of training. The third is to recognize that migration flows, and a strong cooperation in managing them, will benefit not only departure countries, but also arrival countries as well.

This should represent the starting point for a cooperative approach between departure and arrival countries to manage migration flows in a rational and more humane way.

PART 1

The theoretical analysis

INTRODUCTION

The need to design and promote effective policies concerning migration, labour market and demographics justifies the strong demand to produce reliable forecasts of migration flows. These are fundamental in understanding the extent to which international population movements can counter the reduction in labour force and ageing populations that affect many developed and developing countries.

Even a cursory analysis of available projections and demographic scenarios indicates there is still much work to be done to develop accurate forecasting models. The shortage of coherent models has been justified by pointing out that migration is a phenomenon characterized by a much higher level of uncertainty than the purely demographic components of population change.

It is argued that the inability to accurately forecast migration flows is due to a lack of appropriate theories. Despite the abundance of alternative and overlapping approaches produced by practitioners in all the social sciences, the empirical propositions that can be derived from the available models cannot “explain” the trend and direction of international migration flows, and are unable therefore

to make reliable forecasts.¹ The author suggests that this is due to the ideological foundation of these theories, which has stood in the way of asking the main question: Can we produce a model explaining the number of people that has arrived in developed countries and forecast their future number?

This will enable us to analyse one of the main consequences of this situation – the adoption by national and international statistical institutions of procedures for projecting demographic trends that are based on mechanical assumptions of what future migration flows will be (that is, on assumptions that are not related to the economic and demographic dynamic). This has led to projections that propose, for many countries, a demographic situation that appears highly unrealistic given their socioeconomic implications.

The only way to avoid such shortcomings is to adopt a model capable of explaining and forecasting migrations flows and more specifically, arrivals. The second part of the chapter will present such a migration model. The model is based on a stock-flow approach to labour market analysis that allows for the presence of structural disequilibria between labour demand and supply. The model posits that countries characterized by SSL attract migrants from countries with SEL. Both situations result from the interaction in the labour market between the demographic sphere that affects the supply of labour, and the economic sphere that affects the demand.

MIGRATION THEORIES

At the beginning of a seminal survey of migration theories by Massey et al. (1993), the authors noted:

The emergence of international migration as a basic structural feature of nearly all industrialized countries testifies to the strength and coherence of the underlying forces. Yet the theoretical base for understanding these forces remains weak. The recent boom in immigration has therefore taken citizens, officials, and demographers by surprise, and when it comes to international migration, popular

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1 Obviously, it is assumed that migration, and more specifically immigration, can be explained, which implies that a model can be proposed and tested. For a different opinion based on the idea that migration cannot be forecast, see Arango (2000), while a recent evaluation report promoted by the Government of United Kingdom speaks of inherent uncertainty about future migration flows compounded by the intrinsic errors in the data (G. Disney et al., 2015).

thinking remains mired in nineteenth-century concepts, models, and assumptions. At present, there is no single coherent theory of international migration, only a fragmented set of theories that have developed largely in isolation from one another, sometimes but not always segmented by disciplinary boundaries.²

After more than 20 years, the situation has not significantly changed. The only point in which studies concerning migration seem to agree is that migrations are much more difficult to explain and forecast than other components of population change, and this is not only from a lack of data.³

In the meantime, the size of economic migration flows has notably increased, while the phenomenon has become increasingly complex and articulated: South–North migrations are now paralleled by South–South migrations and at the same time, an increasing number of countries are affected by arrival, departure and transit flows. Finally, in an increasing number of countries, migrations are becoming the most important component of population dynamics.

This chapter will provide a short and certainly only partial survey of the literature on migration.⁴ The objective is not so much listing all available theories on the origin, determinants and directions of migrations flows, but rather, an effort to assess what different approaches can explain, as well as what they do not explain, in order to understand whether they can play a role in forecasting migration flows, while suggesting correct migration policies.

A survey of the literature

Migration is a multifaceted phenomenon and therefore has been addressed by many social disciplines. Geography, demography, economics and sociology have paid special attention to the quantitative aspects of migration. In view

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Recalling Arango (2000), Bijak (2010) and Kupiszewski (2103), the recent evaluation report commissioned by the Migration Advisory Committee note that: “Migrations are at present too fragmented and too vague to be able to support forecasting, besides being used as possible justifications for the construction of argument-based scenarios taking selected push and pull factors into account.” (Disney et al., 2015, p. 23).

3 According to UN DESA: “International migration is the component of population change that is most difficult to project. ... the movement of people across international borders, which is often a response to rapidly changing economic, social, political and environmental factors, is a very volatile process.” (UN DESA 2015, p. 40)

4 The paper will not survey the literature on forecasting methods based on purely statistical procedures since in order to elaborate policy measures to govern migration flows, we need explanations and not numbers. For a recent survey of the literature on these procedures, see Disney et al., 2015.

of this paper's objective, the attention will be on these disciplines and more specifically, on the main families of models proposed by economists. Moreover, this survey will cover only those theories that address the causes of economic migration and not those that account for its perpetuation. This is as a result of the proposed model, which emphasizes that we are in the early stages of a century that will be characterized by mass migrations of unprecedented size.

The ancestors

Towards the end of the nineteenth century, an analysis of the available census data (mainly British) led Ernst Georg Ravenstein (Ravenstein, 1885, 1889), a German-English geographer and cartographer, to outline a number of empirical generalizations that were concerned with internal⁵ rather than international migration.⁶ Although Ravenstein's contribution has been appraised in different ways by the following studies of migration, there can be no doubt that they were foundational for the field for subsequent analyses.

The first part of the twentieth century was dominated by the push–pull analytical framework. In this approach, migration is driven by a set of push factors operating from the region or country of origin (such as poverty, unemployment, landlessness, rapid population growth, political repression, low social status, poor marriage prospects and desertification), and pull factors operating from the place or country of destination (such as better income and job prospects, better education and welfare systems, land to settle and farm, good environmental and living conditions, and political freedom). This approach was formalized by Everett Lee (1966), who also took into consideration the intervening factors that might impact the decision to migrate. He argued that variables, such as distance, physical and political barriers, and having dependants, can impede or even prevent migration. He pointed out that the migration process is selective because differentials, such as age, gender and social class affect how persons respond to push–pull factors, and these conditions also shape their ability to overcome intervening obstacles. Furthermore, personal factors, such as a person's education, knowledge of a potential receiver population, family ties and the like can facilitate or impede migration.

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5 A model capable of explaining migration flows should apply equally to internal and international migrations.

6 (a) Migrants move mainly over short distances; those going longer distances head for the great centres of industry and commerce; (b) Most migration is from agricultural to industrial areas; (c) Large towns grow more by migration than by natural increase; (d) Migration increases along with the development of industry, commerce and transport; (e) Each migration stream produces a counter-stream; (f) Females are more migratory than males, at least over shorter distances; males form a majority in international migration; and (g) The major causes of migration are economic.

DEMOGRAPHY

In a recent article, Philippe Fargues (2011) has pointed out a curious paradox: “international migration theory does not put much emphasis on demography and demographic theory simply ignores international migration.”⁷

In fact, the most relevant and complete surveys of migration theory, including the one by Massey et al. (1993), do not mention demography or demographers. The first reason could be that these surveys have been written by economists and, despite continuous discussions on the need to adopt multidisciplinary approaches, the boundaries between demography and economics remain pronounced. Thus, practitioners of the two disciplines, often dealing with the same issues with similar tools, are unable to work together. However, the main reason is that demographers have never produced formalized models of migration.

The main objective of demography is to describe and explain the evolution of populations, the main tool being demographic accounting that considers, on the one hand, the contribution of natural events (births and deaths), and on the other, the role of migrations. Therefore, migration is not only a basic component in the toolkit of demographers,⁸ but it has always represented a major field of demographic analysis, and demographers are still the leading authority in this field, at least from the viewpoint of politicians.

However, in keeping with the mainly descriptive nature of their discipline, demographers have never proposed fully fledged migration models, and instead have analysed migration flows mainly from the supply side, paying attention mostly to the reasons that determine departures and focusing very little on the choice of the country of destination.

Although there are many different positions present in the literature, the general consensus is that migration flows are activated by a demographic growth that is not mirrored by economic growth. Moreover, given the hypothesis of demographic equilibrium, that is still at the basis of transition theory, at least for demographers working at the empirical level, the labour market consequences of a structural decline in the working-age population (WAP) have been considered only very recently and have been generally set aside with rather cursory arguments.

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7 See also Keeley (2000) and Bruni (2008).

8 See Fargues (2011).

Neoclassical models

Economists are latecomers to the study of migration; they entered the field recently in the 1950s. Given the predominant role of the neoclassical paradigm, their first proposed models were rational choice models.

The macroeconomic model

In this approach, inspired by a seminal article by Lewis (1954), labour migration is explained by the process of economic development, and international migration is related to the global supply and demand for labour (Ranis and Fei, 1961; Sjaastad, 1962; Todaro, 1969). Nations with scarce labour supply and high demand will have high wages that pull immigrants from nations with a surplus of labour. The movements of labour, mirrored by movements of capital in the opposite direction, lead to a situation of equilibrium between the two labour markets and to the end of migration flows. It should be added that in later versions of this theory, capital includes human capital, and therefore the model allows for the movement of highly skilled people towards countries with an excess of labour.

The individual approach

At the micro level, the decision to migrate is the result of individual rational comparison (a cost-benefit calculation) between the net economic outcome of remaining in the country of residence, and the economic outcome to be expected by moving to another country (Todaro, 1969, 1976, 1989; Todaro and Maruszko, 1987; Borgias, 1990).⁹ Total migration flows are the sum of individuals who have made the decision to migrate where the expected discounted net returns are greatest over some timescale.

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9 As Massey et al. (1993) explain in detail: "Potential migrants estimate the costs and benefits of moving to international locations and migrate to where the discounted net returns are greater over some time horizon. Net returns in each future period are estimated by taking the observed earnings corresponding to the individual's skills in the destination country and multiplying these by the probability of obtaining a job there. These expected earnings are then subtracted from those expected in the community of origin (observed earnings there multiplied by the probability of employment) and the difference is summed over a time horizon from 0 to n , discounted by a factor that reflects the greater utility of money earned in the present than in the future. From this integrated difference the estimated costs are subtracted to yield the expected net return to migration." (op. cit., p. 434)

The new economics of labour migration

In an effort to make the neoclassical model more realistic, the new economics of labour migration assumes that the decision to migrate is not taken by individuals, but by families or households, and that the decision is taken in a context characterized by missing information or imperfect markets (Katz and Stark, 1986; Lauby and Stark, 1988; Stark and Taylor, 1989, 1991; Stark, 1984, 1991; Stark and Bloom, 1985; Stark and Levhari, 1982; Stark, Taylor and Yitzhaki, 1986; Stark and Yitzhaki, 1988; Taylor, 1986). In this situation, the migration of some family members is aimed not only at maximizing expected income, but migrations are also a way to diversify risks and loosen constraints associated with market failures. These groups of models show that a wage differential is not a necessary condition for international migration to occur and that international migration can continue when wage differentials have been eliminated, while economic development within sending regions need not reduce the pressure for international migration.

Dual labour market theory

According to this approach, migration is not determined by rational decisions made by individuals or households, but “stems from the intrinsic labour demands of modern industrial societies” (Massey et al., 1993:440). According to Piore (1979), migrations are determined by the presence in advanced industrial societies of a chronic and unavoidable need for foreign labour due to their dualistic structure: they have a primary market of secure, well-remunerated work and a secondary market characterized by low wages, unstable conditions and a lack of reasonable prospects for upward mobility. Put more simply, the segmented labour-market theory argues that migrants are recruited to fill these secondary jobs that are necessary for the overall economy to function but are avoided by the native-born population.

World-systems theory

In this sociological approach, international migration is a by-product of global capitalism, and is a natural outgrowth of the disruptions and dislocations that inevitably occur in the process of capitalist development (Castells, 1989; Morawska, 1990; Massey, 1989; Petras, 1981; Portes and Walton, 1981; Sassen, 1988, 1991; Wallerstein, 1974). The penetration of capitalist economic relations into peripheral non-capitalist societies, and more specifically in agriculture, mining and industry, contributes to the creation of populations that are socially and economically uprooted, and of a mobile labour force that is displaced

from the land, with a weakened attachment to local communities and that is subsequently prone to migration. At the same time, capitalist investment creates strong material and cultural links with core countries, leading to transnational movements that are especially likely to occur between former colonial powers and their former colonies.

A critical assessment of migration theories

As was correctly observed by Massey et al. (1993), in comparing different migration theories, the real issue is not that of indicating which is the correct one, but of sifting out their empirical content, and the empirical predictions that can be verified.

Massey et al. (1993) elaborated a series of empirical propositions derived from the main theories of migration, but the authors' silence concerning the results obtained in the empirical tests clearly suggests that they do not lead to any clear conclusion.

In fact, these tests have not only verified some propositions, but very often also their opposite, while in other cases the necessary data was not available. This situation is not surprising given that different sets of hypotheses can lead to different or even opposite conclusions, each capturing only one aspect of "reality".

The fact is that if the models based on these assumptions can suggest with some approximation which countries are or will become departure countries, they cannot for both theoretical and empirical reasons (Bruni, 2008), produce quantitative predictions. Above all, they cannot forecast the most important variable for policymakers: how many people will arrive in each destination country in the medium-long term (or more correctly what will be the migration balance).

The lack of a generally accepted and satisfying theory of migration has notable consequences. In the first place, those in charge of designing and implementing migration policies (broadly defined) find themselves in a state of increasing uncertainty and confusion. Governments continue to perceive migrations mainly from a security perspective, failing to understand the structural nature of the phenomenon and the necessity to devise long-term strategies. At the same time, the continuous growth of migration flows, together with the politically sensitive nature of the phenomenon, contribute to making the situation

even more drastic, while international organizations are unable to propose appropriate solutions.

Secondly, while the role of the migration balance is becoming crucial in determining population change in the economically and politically dominant countries, national and statistical offices do not have reliable tools with which to forecast the migration balance and therefore to build the reliable projected scenarios necessary for designing medium- and long-term policies in many vital areas, such as education, health, retirement, pensions and infrastructures.

Finally, the lack of reliable demographic scenarios, based on a clear understanding of the mechanisms that produce them, makes the policy issue even more critical since it can lead to a very dangerous standstill or even push policymakers in directions that are counterproductive.

Demographic forecasting

Numerous international organizations and national statistical institutes produce demographic forecasts with very similar methodologies. The analysis will focus on the methodology followed by the most representative and influential – the Population Division of UN DESA.

The United Nations methodology

The demographic projections produced by UN DESA¹⁰ are based on the meta-hypothesis that the three main variables that determine population trends (births, deaths and migrations) can be forecasted independently from each other and independently from the economic sphere.

Fertility and mortality are variables that change at a slow rate, and the methodology adopted by statistical institutions (both national and international) to forecast them over a medium period appears reasonable and acceptable. Much more debatable are the assumptions regarding migrations.¹¹

10 The Population Division published its first set of world population estimates and projections in 1951. Starting in 1990, the World Population Prospects have been regularly updated every two years. The 2012 Revision, on which this study is mainly based upon, presents population estimates and projections for 230 countries and areas, as well as for 32 geographical regions, major areas and development groups (UN DESA, 2013a).

11 For a detailed analysis of the last assumptions adopted by UN DESA, see UN DESA, 2015.

The assumptions regarding fertility and mortality

Beginning with the 2010 Revision, fertility has been forecast using a probabilistic approach and fertility patterns are generated by taking into account not only national trends, but also the tendencies of countries within the same region, as well as the global trend. Finally, and more interestingly, the last three revisions have returned to the equilibrium hypothesis upheld by the classical formulation of transition theory: while the 2008 projections incorporated the assumption that fertility would converge towards the below-replacement level of 1.85 children per woman in all the countries of the world, since the 2010 Revision, fertility has been assumed to converge towards 2.1 children per woman.

Life expectancy is forecast progressively to increase from a present value of 70.5 years to 83.2 years in 2100.¹² Moreover, the growth in life expectancy will be negatively correlated to the initial value. During the 2010–2015 period, the difference in life expectancy between most developed countries and least developed countries was quite high (16.2 years). According to the Population Division, the difference between the two groups of countries is expected to decline progressively to reach 10.6 years at the end of the century.¹³ The inter-country spread, however, will remain quite wide with values between a maximum of 94.2 years for Martinique and Italy and a minimum of 70.2 years for Sierra Leone.¹⁴

The assumptions regarding migration

Due to the situation of migration theory as outlined earlier,¹⁵ UN DESA has adopted a purely mechanical approach to projecting the migration balance of each country. It assumes that for the next 40 years, after a sharp drop in the present period, the migration balance will remain substantially constant and will then progressively decline to half of its value by the end of the century (UN DESA, 2015).

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12 Here, and in the following paragraphs the most recent data published by UN DESA; UN DESA, 2015 is used.

13 As in all the other projections, an underlying assumption is that the economic and social ranking of the countries will not change. History shows that in 90 years, many things can happen, with China and the Gulf countries providing sound examples of completely unexpected developments.

14 Forty seven countries are expected to break the 90-year mark, with Europe averaging 88.5 years.

15 An additional factor might be that projections are made by demographers who are often characterized by what might be called a *horror theoriae*.

The difficulty in finding a reasonable and acceptable solution to the problem of projecting migration is shown by the fact that between 2000 and 2015, the Population Division proposed four different approaches to migration: (a) the “replacement migration” approach;¹⁶ (b) the constant approach followed by a drop to zero after 2050; (c) the constant approach followed by a progressive decline to zero from 2050 to the end of the century; and (d) the constant approach followed by a progressive decline to half of 2050 in the last 50 years of the century.

The replacement approach, the most daring and innovative but also the most controversial, was the object of a special report presented at the annual meeting of the Population Association of America, held in Los Angeles in March 2000 (UN DESA, 2000). The report begins with the following considerations:

- (a) In the next few decades, the population will decline and the ageing process that characterizes all developed countries will accelerate;¹⁷
- (b) The fertility rate will probably increase, but it is extremely improbable that it will go back to the value of 2.1 children per woman that guarantees the stability of the population level; and
- (c) At the same time, it is a common goal of all countries to reduce mortality.

The obvious and unavoidable conclusion of the report was that only international migration could modify the tendency to demographic decline and ageing.

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16 The concept of replacement migration was not new in demographic literature, but the Population Division Report (UN DESA, 2000) gave it an unprecedented prominence. The report defines replacement migration as “the international migration that would be needed to offset possible population shortages, i.e. declines in the size of population, the decline in the population of working age, as well as to offset the overall ageing of population”. McNicoll (2000) explains: “The replacement in replacement migration is of births by immigrants, the implicit assumption being that recruitment to population by immigration is an equivalent process to recruitment by birth. In an individualistic economic calculus, the difference may indeed be immaterial- or with a selective admission policy, even in migration’s favor, since it is the parents of taxpayers of other countries who have borne the cost of migrants’ education. But for the society rather than for the economy, the two models have very different implications.”

17 The research covered eight countries (Italy, France, Germany, the United Kingdom, the United States, the Russian Federation and Republic of Korea) and two regions (Europe and the European Union).

The report proposed a series of alternative scenarios for the period up to 2050. The three most interesting scenarios presented the net migration balance necessary to keep the following: (a) total population constant at the highest level reached during the period; (b) WAP constant at the highest level reached during the period; and (c) the ratio between the elderly and WAP constant. The scenarios also showed the impact of migration on the main demographic indicators.

The results were striking. For instance, the report showed that in order to keep WAP constant at the 2000 level, the European Union would need (between 2000 and 2050) 179 million migrants, including 19.6 million in Italy and 24.3 million in Germany, while the need of Japan was estimated at 32.3 million. Some of the qualitative results were even more thought-provoking. The report showed that keeping WAP constant would tend to recreate a demographic equilibrium, which in time would eliminate the need for foreign labour. However, the price to be paid was the creation of a multi-ethnic society on a scale never before experienced by a developed country.

The report, which had the courage to clearly indicate the unavoidable implication of present demographic trends, was the object of much criticism, some of which was unwarranted.

In the first place, it was observed that the report, presented as a purely demographic exercise, was in fact promoting a very precise policy solution to the demographic deficits of industrialized countries – mass migration (McNicoll, 2000). With a degree of sarcasm, Coleman (2002) wrote: “In 2000, the prospect of demographic salvation from population ageing by migration was awakened among the credulous by a report from the United Nations Population Division on “Replacement Migration”. ... The impression given was that substantial increases in immigration, some of them astronomical, were the only option in many cases to prevent declining population, declining workforce and declining “potential support ratio.”

Other criticisms addressed the assumption that a declining total population, a declining WAP and an ageing population are problems in and of themselves.¹⁸

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18 Coleman (2000), for instance, states: “[A]ging is not necessarily a bad thing because societies today and in the future can better cope with a lower support ratio by increasing labor productivity.” While according to McNicoll (2000): “[T]he definition of ageing as a problem is not simply driven by the fact that population is getting older, but also by the ways in which we have organized institutions in the society that relate to aging.” Other authors noted that there are economic situations in which population decline can be a positive element, while the solution proposed by the United Nations might cause a mass exodus from developing countries, depriving them of their most qualified human resources.

With respect to a possible deficit of labour supply, almost all those who intervened in the debate expressed the belief that increases in productivity and labour force participation were viable solutions. However, the most fundamental criticism concerned the fact that the report relied on only one instrument to solve all demographic disequilibria – migratory flows.

Finally, the deepest concerns were directed at the social and political sustainability of migratory flows to the degree that was suggested by the report.¹⁹

The Population Division returned to more standard assumptions regarding future migration flows after there were no favourable views concerning the report's methodology. In the 2004 long-term projections (UN DESA, 2004), the Population Division distinguished between a short-term period (up to 2050) and the very long-term period (2050–2300). For the former, the future level of migration flows²⁰ would reflect past migration estimates and public policy towards migrants.²¹ For the long-term period, the solution was even simpler: "Reasonable assumptions about long-range international migration are difficult to make. Essentially as a default, zero net international migration per country is assumed beyond 2050."

In this case, UN DESA did not wait for the reaction of the leading demographers, but instead a series of papers, authored by external experts, were incorporated in the report.²² The only author who considered the assumptions regarding migration to be realistic was Caldwell (2004): "This would have seemed nonsensical 20 years ago, but growing resistance by the electorates of many developed countries to new settlers suggests that the assumption could be close to the truth." However, he then went on to observe: "[S]ome countries with persistent below-replacement fertility may seek immigrants to stabilize their numbers."

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19 Coleman (2000) voiced the fear: "Any population with sub-replacement fertility, attempting to maintain a given population size through immigration, would accordingly acquire a population of predominantly, eventually entirely, immigrant origin. Populations can only adopt this solution to stabilize the numbers at the risk of the loss of their original identity."

20 However, UN DESA made it clear that it had proceeded case by case, country by country, without following any standard model, and introducing little change with respect to the past "except where current patterns reflect unusual events unlikely to be repeated, such as the return of refugees to a specific country".

21 The approach was illustrated with some examples. For instance: "... the United States, which receives the largest number of immigrants, is estimated as having 6.3 million net migrants in 1995-2000 and is projected to have only slightly fewer, 5.5 million, in 2045-2050. China and Mexico lose the largest net number of net migrants in 1995-2000 and also in 2045-2050."

22 The papers cover a vast array of topics, some rather unusual for demographers, such as the fascinating paper on understanding the emotions of the population in 2300 (Basu, 2004). While at least one paper was entirely devoted to fertility (Birg, 2004), which had a relevant role in many others, no paper was devoted specifically to the hypothesis on migration.

All the other interventions expressed a negative evaluation. Coleman (2004) observed, for example: “Given the long-term nature of these projections, it is a surprising assumption and one with particular influence on the developed world, both in Europe and in Northern America, where for decades net inward migration (immigration) has been making substantial contributions to population numbers.”

Tim Dyson flatly stated that the UN DESA assumption of zero migration after 2050 was unrealistic. He considered it “likely that demographic and economic differentials will continue to operate far beyond the year 2050 to promote, for example, migration from regions like West Asia and North Africa to regions like Europe and North America” (2004). Westoff (2004), having highlighted that “the assumption of zero international migration seriously reduces their usefulness for developed countries”, voiced what seemed to be a shared opinion: the assumption of zero migration after 2050 did not have any reasonable alternative. The point was made very clearly by Paul Demeny (2004). He argued that the assumption of zero migration flows after 2050 was adopted because “the United Nations demographers ... felt helpless in arriving at numerically specifiable migration rates that could be grounded in the experience of past patterns of international migration”. As already pointed out, Demeny concluded by observing that critics of the United Nations’ assumptions “would have a standing only if they could propose a more acceptable set of assumptions”. In substance, there was almost total agreement that the decline of migration to zero was not a realistic hypothesis, but a lack of viable alternatives left the Population Division with no alternative.

The 2008 Revision, which covers the period up to 2050, adopted the standard “short-term” assumption of keeping international migration flows constant at around the average value registered during the previous 10 years (UN DESA, 2009).

In the 2010 Revision, the time horizon was pushed up to the end of the century, a middle ground between previous short-term and long-term projections. It was therefore necessary to find a new strategy for the migration hypothesis. The decision was to abandon the rather awkward, abrupt drop to zero of migration flows by the middle of the century, but maintain the idea that migration flows will become less and less important, progressively declining to zero by the end of the century. This assumption that was maintained in the 2012 Revision was changed again in the last revision (2014), which assumes that the migration balance will decline to half the 2050 value.

Projections, forecasts and hypotheses

UN DESA has clearly stated on more than one occasion that (long-term) projections are not forecasts, and nobody should expect the population to reach the projected levels. “Any demographic projections, if they go 100, 200, or 300 years into the future, are little more than guesses.” They represent “extrapolations of current trends”. They show what paths the population would follow if, and only if, historical trends continue. Since nobody can expect this to happen, projections have two objectives. The first one is to make the implications of the present demographic trends evident, which “can only be seen by looking far enough into the future”. The second one is “to facilitate thinking about how to prepare for it (the future), but also to encourage action to modify this path, to make it more favourable, if that is possible, for collective welfare” (UN DESA, 2004).

It would, however, seem reasonable to expect demographic projections not to be simple exercises, but to provide the population data necessary for designing and implementing a vast array of structural policies in such areas as education, welfare, transport, infrastructure and migration itself. However, in order to do so, population projections need to be based on more than educated guesses and mechanical assumptions.

From a socioeconomic perspective, only realistic assumptions²³ can generate projections that are reliable and plausible. The following paragraphs will show that:

- Not only do UN DESA assumptions on migration not reflect past trends, but they produce results that are not coherent with the demographic evolution; and
- For many countries, the projections are highly unrealistic from a socioeconomic perspective.

Given the increasing importance of demographic trends, this makes evident the need to base demographic projections on realistic assumptions concerning migration, which can be achieved only by employing a realistic model.

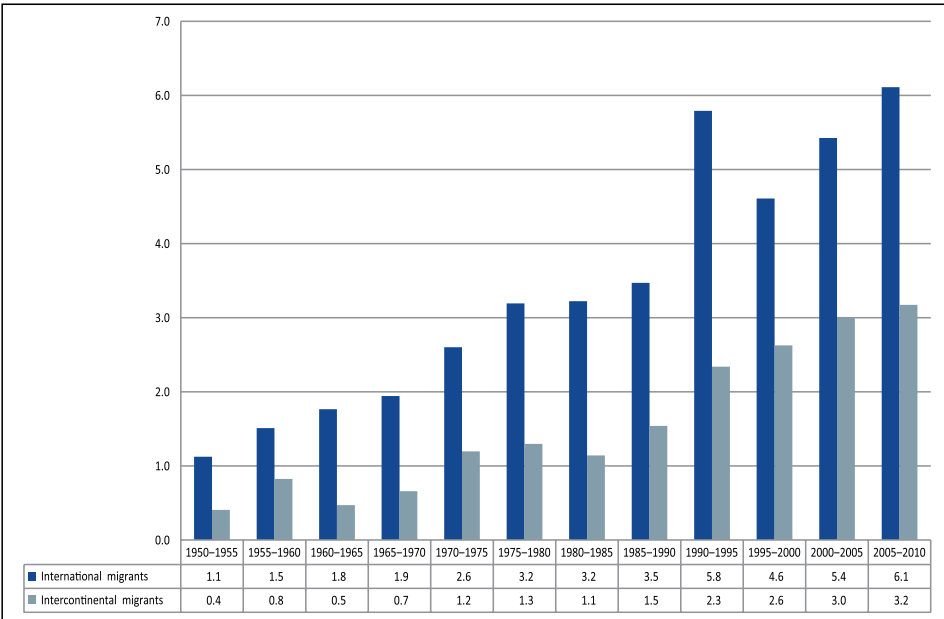
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23 The opposite opinion was held by Friedman (1953).

Migration trends: 1950–2010

In the last 60 years, three main tendencies have characterized international migration flows:²⁴

- (a) A substantial increase in the level of migration: the size of international migrations has been steadily increasing since the 1950s (with the exception of the peak produced by the fall of the Berlin Wall and the subsequent temporary decline) from a yearly average value of 1.1 to 6.2 million (Graph 1);

Graph 1: Number of international migrants and intercontinental migrants, from 1950–1955 to 2005–2010



Note: Average yearly values are in millions.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

24 In the following part of the report, the data of the 2012 Revision has been used, given that the 2014 Revision has been made in a moment of demographic turmoil.

- (b) An increase in the percentage of intercontinental flows from 6.7 per cent, between 1950 and 1960, to 33.7 per cent between 2000 and 2010 (Table 1);

Table 1: Number of arrival and departure countries; positive, negative and net migration balance by continent and area; 1950–1960 and 2000–2010

	Number of countries	Number of countries with positive migration balance	Number of countries with negative migration balance	Positive migration balances	Negative migration balances	Net migration balance
1950–1960						
Africa	56	14	28	0.7	-1.7	-1.0
Asia	51	21	23	3.6	-2.4	1.2
Europe	40	13	27	2.2	-6.4	-4.2
South America and Caribbean	38	11	22	1.4	-2.2	-0.8
New World Countries	4	4		5.0		5.0
Oceania	11	2	9	0.0	-0.1	-0.1
Total	200	65	109	12.9	-12.8	0.1
Intercontinental flows	200			6.7		
2000–2010						
Europe	40	27	13	20.1	-1.8	18.3
New World Countries	4	4	0	15.3		15.3
Asia	50	21	27	14.2	-30.6	-16.4
Gulf countries	6	6		8.7		
South America and Caribbean	37	8	28	0.4	-11.6	-11.2
Africa	55	16	36	3.9	-10.2	-6.3
Oceania	10	2	5	0.0	-0.2	-0.1
Total	196	78	109	53.9	-54.3	-0.4
Intercontinental flows				33.7		

Note: Some countries register a zero migration balance. Values are in millions.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

- (c) Very significant changes in the geographical structure of both arrival and departures flows. Between 1950 and 1960, the New World Countries (NWC: Canada, the United States, Australia and New Zealand) were the main pole of attraction of international migration flows. They received around half a million migrants per year, that is, 38.7 per cent of the total. Western Europe (France and Germany, but also Switzerland, Belgium and Sweden) represented the second pole of attraction; Brazil, Argentina and Venezuela represented the third. Fifty years later, the situation had radically changed. Europe had become the main area of arrival, while the countries of the Gulf region were the third largest arrival area after the NWC. Eastern and Central Asia, especially Southern Asia, Central and Southern America, Northern, Eastern and Western Africa were now the areas that provided labour to the rest of the world.

Moreover, numerous countries have moved from being affiliated as departure countries to arrival countries. In the last 40 years, only in Europe has the sign of the migration balance changed from negative to positive: first in Portugal, Spain, Italy and Greece, around the middle of the 1970s, and then, among others, in the Russian Federation, in the Czech Republic, in Hungary, Ireland, Malta, Slovenia and Cyprus, while in the Republic of Moldova it has changed from positive to negative.

Finally, the migration balance is becoming more and more important in determining demographic trends since in many countries, the natural balance has become marginal or even negative. In conclusion, historical data clearly show that the direction of migration flows can completely change even during a very short interval.

Migration trends and demographic trends: Some contradictory results

According to UN DESA, between the period of 2015 and 2050, in absence of migration, 65 countries will register a decline in WAP. Of the 65 countries, 37 are in Europe, 14 in Asia, 9 in the Caribbean and Latin America, and 1 in Africa. They include also the four NWC (Bruni, 2014).

At the beginning of the period, almost 2 billion people are expected to be working age in the countries considered and represent 41.3 per cent of the world's WAP (Table 2). In the following 35 years, in the absence of migration, these countries will register a contraction in WAP of almost 350 million (-17.4%), and their share is projected to decline to 27.3 per cent.

Table 2: World's WAP; countries where WAP is expected to decline and increase; 2015–2050

	Working age population			
	Absolute value		2015–2050	
	2015	2050	Absolute change	% change
65 countries where WAP is expected to decline	1,989	1,642	-346.3	-17.4
64 countries	973	781	-191.7	-19.7
China	1,016	861	-154.6	-15.2
Countries where WAP is expected to increase	2,828	4,386	1,558.3	55.1
World WAP	4,817	6,029	1,212.0	25.2

Note: Absolute values are in millions.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

In the other countries, WAP is expected to increase by 1.56 billion (+55.1%). It should be emphasized that in 2015, the WAP of China amounts to more than 1 billion and represents more than half in proportion of the countries with declining population. It will continue to be more than half in 2050 when its relative weight to the global WAP will be down to 14.3 per cent (see Table 3).

Table 3: WAP; Relative weight in the countries where WAP is expected to decline and increase; 2015 and 2050

	Working age population	
	Percentage composition	
	2015	2050
65 countries where WAP is expected to decline	41.3	27.2
64 countries	20.2	13.0
China	21.1	14.3
Countries where WAP is expected to increase	58.7	72.8
World WAP	100.0	100.0

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The decline in WAP is heavily concentrated: China accounts for 45.3 per cent, and the first five (China, the Russian Federation, Japan, Germany and Thailand) account for 69.4 per cent; if the next four (Italy, Republic of Korea, Ukraine and Spain) are added, the 80-per cent mark is passed.

If the percentage decline is considered, Qatar is first with 45.3 per cent, followed by Hong Kong, China with 40.7 per cent and Macao, China with 36.1 per cent. In another 11 countries, the percentage decline is above 30 per cent (Table 4).

Table 4: Natural balance between 2015 and 2050

		Natural balance				
		Abs. value	% comp	Cum. %		% change
1	China	-154,599.1	45.3	45.3	Qatar	-45.3
2	Russian Federation	-28,311.4	8.3	53.6	Hong Kong SAR	-40.7
3	Japan	-23,534.6	6.9	60.5	Macao SAR	-36.1
4	Germany	-17,749.8	5.2	65.7	Germany	-33.1
5	Thailand	-12,647.8	3.7	69.4	Ukraine	-32.9
6	Italy	-11,872.4	3.5	72.9	Portugal	-32.5
7	Republic of Korea	-10,495.1	3.1	76.0	Slovenia	-32.3
8	Ukraine	-10,318.5	3.0	79.0	United Arab Emirates	-31.8
9	Spain	-9,275.2	2.7	81.7	Bulgaria	-31.1
10	United States	-8,046.8	2.4	84.1	Italy	-30.8
11	Poland	-6,878.7	2.0	86.1	Japan	-30.7
12	Canada	-4,541.8	1.3	87.4	Spain	-30.2
13	United Kingdom	-4,310.4	1.3	88.7	Channel Islands	-30.0
14	France	-2,709.0	0.8	89.5	Greece	-30.0
15	United Arab Emirates	-2,378.1	0.7	90.2	Singapore	-29.9
16	Portugal	-2,254.6	0.7	90.9	Republic of Korea	-29.2
17	Greece	-2,156.1	0.6	91.5	Belarus	-29.1
18	Hong Kong SAR	-2,127.4	0.6	92.1	Hungary	-28.9
19	Cuba	-2,080.9	0.6	92.7	Russian Federation	-28.6
20	Hungary	-1,913.9	0.6	93.3	Malta	-27.8
21	Belarus	-1,898.6	0.6	93.8	Austria	-27.7
22	Czech Republic	-1,857.4	0.5	94.4	Croatia	-26.9
23	Netherlands (the)	-1,703.8	0.5	94.9	Switzerland	-26.4
24	Serbia	-1,656.3	0.5	95.4	Czech Republic	-26.4
25	Austria	-1,552.1	0.5	95.8	Thailand	-26.0
26	Bulgaria	-1,477.8	0.4	96.3	Cuba	-25.9
27	Switzerland	-1,383.5	0.4	96.7	Poland	-25.8
28	Australia	-1,151.4	0.3	97.0	Serbia	-25.1
29	Singapore	-1,131.3	0.3	97.3	Latvia	-23.6
30	Belgium	-1,017.6	0.3	97.6	Bosnia and Herzegovina	-22.8

31	Croatia	-766.1	0.2	97.9	Lithuania	-22.4
32	Qatar	-695.3	0.2	98.1	The former Yugoslav Republic of Macedonia	-21.8
33	Bosnia and Herzegovina	-604.7	0.2	98.2	Republic of Moldova	-21.6
34	Slovakia	-570.0	0.2	98.4	Estonia	-21.5
35	Republic of Moldova	-546.5	0.2	98.6	Luxembourg	-20.3
36	Sweden	-500.9	0.1	98.7	Bahrain	-19.9
37	Finland	-478.3	0.1	98.8	Canada	-19.4
38	Lithuania	-468.4	0.1	99.0	Cyprus	-17.7
39	Slovenia	-448.4	0.1	99.1	Aruba	-17.1
40	Denmark	-384.0	0.1	99.2	Netherlands (the)	-15.6
41	The former Yugoslav Republic of Macedonia	-326.6	0.1	99.3	China	-15.2
42	Latvia	-318.1	0.1	99.4	Slovakia	-14.7
43	Norway	-255.3	0.1	99.5	Mauritius	-14.5
44	Puerto Rico	-212.1	0.1	99.6	Belgium	-14.4
45	Bahrain	-204.7	0.1	99.6	Montenegro	-14.2
46	Estonia	-180.4	0.1	99.7	Finland	-14.0
47	Armenia	-160.1	0.0	99.7	Barbados	-11.5
48	Macao SAR	-154.3	0.0	99.8	Denmark	-10.8
49	Cyprus	-140.0	0.0	99.8	United Kingdom	-10.7
50	Mauritius	-130.0	0.0	99.8	Curaçao	-9.7
51	Trinidad and Tobago	-84.2	0.0	99.9	Trinidad and Tobago	-8.8
52	Malta	-80.6	0.0	99.9	Sweden	-8.4
53	Democratic People's Republic of Korea	-72.1	0.0	99.9	Puerto Rico	-8.4
54	Luxembourg	-70.8	0.0	99.9	Martinique	-8.4
55	Montenegro	-60.4	0.0	99.9	Norway	-7.9
56	Channel Islands	-32.5	0.0	100.0	Armenia	-7.6
57	Ireland	-30.5	0.0	100.0	Australia	-7.6
58	New Zealand	-28.7	0.0	100.0	France	-6.7
59	Barbados	-22.8	0.0	100.0	United States	-3.8
60	Martinique	-22.3	0.0	100.0	Ireland	-1.0
61	Aruba	-12.2	0.0	100.0	New Zealand	-1.0
62	Azerbaijan	-11.0	0.0	100.0	Bahamas	-0.6
63	Curaçao	-9.7	0.0	100.0	Democratic People's Republic of Korea	-0.4
64	Chile	-9.2	0.0	100.0	Azerbaijan	-0.2
65	Bahamas	-1.6	0.0	100.0	Chile	-0.1
Total		-341,123.9	100.0		Total	-17.4

Other countries	1,558,465.5			55.1
World	1,212,037.8			25.2

Note: Ranking by absolute value and by percentage incidence on the WAP in 2015.
Source: Elaboration on UN DESA data (UN DESA, 2013a).

What about migration? The Population Division assumes that up until the year 2050, migrations will continue at a level just below the present level, without taking into account demographic trends. This mechanical assumption leads to migration trends that do not reflect the trends in WAP.

The 65 countries with declining WAP can in fact be classified into three different groups (Table 5). The first group includes 17 countries in which the forecast positive migration balance of 66 million will more than offset a natural decline of WAP by 26 million; the second group includes 31 countries in which the migration balance is nil or positive, and 27 million migrants will only partially offset a negative natural balance of 138 million. Finally, in the third group of countries, which includes China and another 16 countries, a negative natural balance of 155 million is compounded by the emigration of 10 million people.

Table 5: Three groups of countries with a negative natural balance of WAP by level of migration balance and total balance; 2015–2050

	Natural balance	Migration balance	Total balance	Migration balance/ Natural balance
Group 1	-25,714	65,668	39,954	-255.4
Group 2	-138,187	26,167	-112,020	-18.9
Group 3	-27,114	-3,329	-30,443	12.3
Total	-191,015	88,506	-102,509	-46.3
China	-154,599	-10,500	-165,099	6.8
Total	-345,614	78,006	-267,608	-22.6

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The first group (Table 6) includes countries that are very diverse both in terms of size (from the small Curaçao with a WAP of 100,000 people, to the United States with 210 million) and geographical distribution.²⁵ The total natural decline in WAP represents only 7.4 per cent of the total decline registered by the 65 countries considered, but they are expected to receive 71 per cent of the total positive migration balance.

As a consequence, the natural balance will be almost 40 million, producing an increase of around 11 per cent of the initial WAP. Percentage increases above average will be registered, among others, by Australia (26.9%), New Zealand (16.9%), Norway (15.3%), Sweden (15.2%) and the United States (12.8%).

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25 All continents are represented with the exception of Africa.

Table 6: First group of countries' natural balance of WAP, migration balance and total balance between 2015 and 2050

		Natural balance	Migration balance	Total balance	WAP % growth
1	Australia	-1,151	5,250	4,099	26.9
2	Bahamas	-2	38	36	13.7
3	Canada	-4,542	7,100	2,558	10.9
4	Chile	-9	210	201	1.6
5	Macao SAR	-154	175	21	4.8
6	Curaçao	-10	24	14	14.4
7	Denmark	-384	525	141	4.0
8	France	-2,709	3,600	891	2.2
9	Ireland	-30	350	320	10.4
10	Luxembourg	-71	95	24	6.9
11	New Zealand	-29	525	496	16.9
12	Norway	-255	750	495	15.3
13	Singapore	-1,131	1,200	69	1.8
14	Sweden	-501	1,400	899	15.2
15	United Arab Emirates	-2,378	3,426	1,048	14.0
16	United Kingdom	-4,310	6,000	1,690	4.2
17	United States	-8,047	35,000	26,953	12.8
	Total	-25,714	65,668	39,954	10.7

Note: Values are in thousands.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The majority of countries in the second group (the largest) are in Europe (17) and Asia (9) (Table 7). This group includes the six countries with the largest natural decline in WAP after China: the Russian Federation, Japan, Germany, Thailand, Italy and the Republic of Korea. In the 35 years under consideration, the WAP of these six countries will decline by 104 million and that of the group by 138 million. Ahead of this massive reduction in WAP (which will seriously affect the labour supply), UN DESA envisages a total migration of 26 million that will cover less than one fifth of the decline. Therefore, the WAP of this group of countries is projected to decline by 112 million, which is 22.5 per cent of the 2015 value (497 million).

Table 7: Second group of countries' natural balance of WAP, migration balance and total balance between 2015 and 2050

		Natural balance	Migration balance	Total balance	Migration balance/ Natural balance
1	Aruba	-12	4	-8	-32.8
2	Austria	-1,552	1,050	-502	-67.7
3	Azerbaijan	-11	0	-11	0.0
4	Bahrain	-205	131	-74	-64.0
5	Barbados	-23	14	-9	-61.3
6	Belgium	-1,018	700	-318	-68.8
7	Channel Islands	-32	26	-6	-80.1
8	Hong Kong SAR	-2,127	1,050	-1,077	-49.4
9	Croatia	-766	0	-766	0.0
10	Cyprus	-140	130	-10	-92.9
11	Czech Republic	-1,857	1,050	-807	-56.5
12	Democratic People's Republic of Korea	-72	0	-72	0.0
13	Estonia	-180	0	-180	0.0
14	Finland	-478	350	-128	-73.2
15	Germany	-17,750	3,200	-14,550	-18.0
16	Greece	-2,156	650	-1,506	-30.1
17	Hungary	-1,914	525	-1,389	-27.4
18	Italy	-11,872	4,350	-7,522	-36.6
19	Japan	-23,535	1,750	-21,785	-7.4
20	Malta	-81	35	-46	-43.4
21	Mauritius	-130	0	-130	0.0
22	Netherlands (the)	-1,704	350	-1,354	-20.5
23	Portugal	-2,255	700	-1,555	-31.0
24	Qatar	-695	297	-398	-42.7
25	Republic of Korea	-10,495	1,400	-9,095	-13.3
26	Russian Federation	-28,311	4,000	-24,311	-14.1
27	Slovakia	-570	105	-465	-18.4
28	Slovenia	-448	140	-308	-31.2
29	Spain	-9,275	3,500	-5,775	-37.7
30	Thailand	-12,648	660	-11,987	-5.2
31	Other non-specified areas	-5,874	0	-5,874	0.0
	Total	-138,187	26,167	-112,020	-18.9

Note: Values are in thousands.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The third group (Table 8) includes China and 16 other countries, with 12 in Europe (including Poland and Ukraine) and 4 in the Caribbean (including Cuba). The countries and territories in this group are characterized by the fact that the decline in WAP is expected to be paralleled by a negative migration balance. In consequence, the WAP is projected to decline by 16.3 per cent in China and by 30.4 per cent in the other 16 members of the group, with five countries above average, including Bulgaria with a world record value of -38.5 and Ukraine at -33.8 per cent.

Furthermore, the situation at the country level is highly differentiated. The percentage of replacement by migration is above 50 per cent in eight medium–small countries with a maximum of 93 per cent in Cyprus; it is between 25 and 50 per cent in nine countries that include Spain and Italy. For the other big countries in this group, the replacement level is much lower: 18 per cent for Germany, 14.1 per cent for the Russian Federation, 13.1 per cent for Republic of Korea, and only 7.4 and 5.2 per cent for Japan and Thailand respectively.

As a consequence, many countries and territories, including the largest ones, are projected to register a dramatic decline in WAP. In 11 countries, the decline will be in excess of 20 per cent, the ranking being led by Japan at 28.4 per cent, followed by Germany at 27.1 per cent, Republic of Korea at 25.3 per cent, and Thailand at 24.7 per cent, with the Russian Federation at 24.6 per cent.

Table 8: Third group of countries and territories' natural balance of WAP; migration balance and total balance between 2015 and 2050

		Natural balance	Migration balance	Total balance	Natural balance	Migration balance	Total balance
		Absolute values			% change in WAP due to:		
1	China	-154,599	-10,500	-165,099	-15.2	-1.0	-16.3
2	Armenia	-160	-200	-360	-7.6	-9.4	-17.0
3	Belarus	-1,899	-70	-1,969	-29.1	-1.1	-30.2
4	Bulgaria	-1,478	-350	-1,828	-31.1	-7.4	-38.5
5	Poland	-6,879	-267	-7,146	-25.8	-1.0	-26.8
6	Republic of Moldova	-546	-302	-848	-21.6	-11.9	-33.5
7	Ukraine	-10,318	-280	-10,598	-32.9	-0.9	-33.8
8	Latvia	-318	-20	-338	-23.6	-1.5	-25.1
9	Lithuania	-468	-40	-508	-22.4	-1.9	-24.4
10	Bosnia and Herzegovina	-605	-35	-640	-22.8	-1.3	-24.1
11	Montenegro	-60	-18	-78	-14.2	-4.2	-18.5
12	Serbia	-1,656	-700	-2,356	-25.1	-10.6	-35.7

		Natural balance	Migration balance	Total balance	Natural balance	Migration balance	Total balance
		Absolute values			% change in WAP due to:		
13	The former Yugoslav Republic of Macedonia	-327	-35	-362	-21.8	-2.3	-24.2
14	Cuba	-2,081	-780	-2,861	-25.9	-9.7	-35.6
15	Martinique	-22	-4	-26	-8.4	-1.5	-9.9
16	Puerto Rico	-212	-123	-335	-8.4	-4.9	-13.3
17	Trinidad and Tobago	-84	-105	-189	-8.8	-11.0	-19.8
	Total	-27,114	-3,329	-30,443	-27.0	-3.3	-30.4

Note: Values are in thousands.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The different and contradictory trends of the migration balance that emerge regarding countries that will be affected by a contraction of WAP are paralleled by the fact that the demographic projections of many countries are untenable from a socioeconomic perspective.

Table 9 represents the countries and territories that are expected to register the highest expansion and reduction rates of WAP. The values range from record increases between 5 and 11 times in African countries like the Niger, Zambia, Mali, United Republic of Tanzania, Burundi and Uganda, to declines of more than 50 per cent in Mongolia, Bahrain, Uruguay and Costa Rica. In order to keep the employment rate constant, the percentage increase or decline in the number of jobs must be equal to that of WAP. In the Niger, and in all the other countries listed in the left side of the table, this would require an economic expansion far in excess even of the record growth rates achieved by China in the last 30 years,²⁶ while for the countries on the right side, the employment level should be reduced by an amount between 30 and 60 per cent.

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 26 The author does not share the opinion that population growth in itself can be an engine of economic growth, and he strongly believes that population growth of these amounts will only foster unemployment and poverty.

Table 9: WAP countries and territories with the largest positive and negative percentage change between 2010 and 2100

	Countries with largest positive variation of WAP	% variable	Countries with largest negative variation of WAP	% variable
1	Niger	1182.1	Mongolia	-58.0
2	Zambia	840.5	Bahrain	52.4
3	Mali	620.4	Uruguay	-52.2
4	United Republic of Tanzania	512.9	Costa Rica	-51.6
5	Burundi	509.6	Ukraine	-46.5
6	Uganda	502.0	Belgium	-42.3
7	Nigeria	472.2	San Marino	-41.2
8	Malawi	466.1	San Salvador	41.0
9	Somalia	460.0	Western Sahara	-40.6
10	Chad	439.9	Thailand	-38.9
11	Tajikistan	418.6	Sierra Leone	-38.8
12	Kuwait	401.2	Albania	-38.3
13	Madagascar	398.7	Djibouti	-36.9
14	Angola	397.9	Comoros	-36.2
15	Burkina Faso	384.4	Japan	-33.7
16	Mozambique	367.4	Ireland	-31.9
17	Senegal	349.2	Qatar	-31.7
18	Democratic Republic of the Congo	321.5	Poland	-31.7
19	Honduras	301.8	Germany	-31.5
20	Côte d'Ivoire	301.4	Jamaica	-31.4

Source: Elaboration on UN DESA data (UN DESA, 2013a).

Forecasting labour market trends: A review of the literature

Economists have not been able to agree on the relationship between demographic and economic variables. The only point on which there is a general agreement is that the supply of labour does depend mainly on the level and trend of WAP. As a result, the demographic projections produced by UN DESA and other institutions in many instances represent the starting point for forecasting labour market variables.

Around 10 years ago, the European Union funded a long-term projection for the labour force of its 25 member countries (Carone, 2004). Around the same time, a series of analyses regarding population dynamics, international migration and labour force²⁷ were carried out by the Central European Forum for Migration Research (CEFMR) in Warsaw.²⁸ More recent projections were made by Elke Loichinger (2014) of the International Institute for Applied System Analysis.

The European Union labour market projections

The goal of the European Union project was to provide a technical background against which to evaluate the impact of ageing populations on national budgets. After summarizing the main labour market trends²⁹ that had characterized European Union countries and analysing their causes,³⁰ the paper went on to give projections for the labour force, employment and unemployment for the period of 2003–2050. It must be emphasized that this study represents a typical case in which future labour market projections are based on an existing demographic projection.³¹ Therefore, the author accepts that the labour market is influenced by demography, but does not consider the labour market to influence population trends in turn. In order to project the future employment and labour force, the study adopts the following causal sequence:

Working-age population-> Labour force-> Unemployment-> Employment

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- 27 From the author's point of view, the most important papers are the following: Bijak, Kupiszewski and Kicingier (2004), Bijak et al. (2007), Bijak (2006), and Bijak, Kupiszewska and Kupiszewski (2005).
 - 28 The complex, differentiated and very thorough research carried on by CEFMR was funded mainly by the Foundation for Population, Migration and Environment.
 - 29 A decline in the participation rates of males in the 60–64 age group; an increase in female participation rates; and a decline in the presence of young people (aged 15–24) in the labour market, while the male participation rates in central age groups (25–54) remain the highest, with values of around 90 per cent.
 - 30 These changes have been caused by the following: (a) social factors (longer periods spent in schooling and vocational training, changes in women's role in households); (b) demographic factors (the decline of fertility rates and the consequent changes in the age structure of the population); (c) institutional factors (changes in the age of retirement); and (d) economic factors (rates of unemployment, average income by household, the share of part-time employment in total employment, the weight of the service sector).
 - 31 In this case, it is based, on the Economic Policy Committee – Ageing Working Group projection, a variant of a Eurostat projection (Eurostat, 2005). There are two basic differences with the Eurostat projections: for European Union countries, life expectancy converges to the average value; Germany and Italy migratory balances have been increased and brought to 200,000 and 150,000 per year, respectively. At the European level, in the 45 years of the projections, the total number of migrants reaches more than 42 million, which corresponds to a yearly average value of 937,000. It is then assumed that the European average fertility rate will increase from 1.6 to 1.66. However, for some new member countries, such as Poland, Hungary, Slovenia, Latvia and Lithuania, whose fertility rates are now at around 1.2 to 1.3, it is assumed that they will reach a value of 1.6 in 2050.

Therefore, in order to compute the labour force, the study projects the rates of participation by sex and single age groups from 2004 to 2050.³² These values are then multiplied by the corresponding WAP age groups.³³ As a result of the WAP trends, the labour force is expected to decline by around 9 per cent, from 212 to 195 million by 2050.

This methodology assumes that the unemployment rates of each country will converge to the NAIRU³⁴ values estimated by the Directorate General for Economic and Financial Affairs of the European Commission. According to these estimates, the average unemployment rate of the EU25 will decline from 8.7 per cent in 2005 to 6.1 per cent in 2025.³⁵ The 2025 values are then assumed to remain constant until 2050.³⁶

Labour force and unemployment are then used to compute the level and structure by age group of employment and the specific rates of employment. The results parallel those for the labour force, as the methodology underlying the projection makes demographic trends dominant. Between 2003 and 2050, total employment is expected to decrease by 10.1 million.³⁷ The following must be emphasized:

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- 32 The projection employs a cohort-component methodology that keeps the rates of entry and exits constant and equal to the average value of the 1998–2003 period. This determines an autonomous growth of female participation due to the fact that cohorts of old women with low participation rates are substituted by cohorts of young women with higher participation rates. Moreover, the procedure of estimation includes a corrective mechanism that takes into account the progressive increase of the average rate of entry and the most recent reforms of the pension system.
 - 33 Between 2003 and 2050, the EU25 average participation rate is expected to increase by around 6 percentage points (from 69.6% to 75.5%). In EU15 countries, the increase should average 5.7 points, and in EU10 countries, it should average at 6.4 points. The differential between the two country groups would therefore decline from 5 to 4.3 points.
 - 34 NAIRU stands for *non-accelerating inflation rate of unemployment*. It refers to the level of unemployment below which inflation would accelerate.
 - 35 The unemployment rate of EU15 is projected to decline from 7.7 per cent to 6 per cent and that of EU10 from 13.8 per cent to 6.4 per cent.
 - 36 Country datas show the impact of the convergence hypothesis. In 2005, unemployment rates fell between a maximum of 18.7 per cent in Poland and a minimum of 3.5 per cent in the Netherlands; three countries (Slovakia, Lithuania and Spain) had values above 10 per cent and in another seven (Sweden, Denmark, United Kingdom, Ireland, Luxemburg, Cyprus and Austria), unemployment rates were equal to or below 5 per cent. In 2025, the range will be between a maximum of 7 per cent in 10 countries and a minimum of 3.2 per cent in the Netherlands. It has also been agreed that EU15 countries with unemployment rates above the chosen average (Germany, Greece, Spain, France, Italy and Finland) will converge to a value of around 7 per cent in 2015. For the EU10 countries, the convergence period is extended until 2025. Finally, it has been agreed to keep constant the unemployment rates of Cyprus, Hungary and Slovenia, which were already below the target value.
 - 37 More precisely, 6.8 million in EU15 countries and 3.9 million in EU10 countries.

- (a) This happens in spite of the fact that the average rate of participation in the European Union is projected to increase by 5.9 percentage points to reach the notable value of 75.5 per cent;
- (b) The overall balance is the result of an initial phase of employment expansion of 21.5 million, and of a following phase of contraction of 31.6 million; and
- (c) The countries most affected by the phenomenon are obviously the same as those which present a more pronounced reduction of WAP and labour force (LF). Among EU15 countries, Spain (-22.5%), Greece (-21.6%), Portugal (-21.4%), Italy (-19%) and Germany (-18%) are expected to lose an average 18.7 of their 95.3 million employed in the peak years; among EU10 countries, the Czech Republic (-27.4%), Latvia (-27.3%), Slovakia (-26.6%), Estonia and Slovenia (both -23%) are expected, taken together, to lose 2.8 million of the 10.7 million employed in the peak years.

The author of the report highlights the fact that under the current policy framework, the Lisbon target of an employment rate of 70 per cent will be missed in 2010, but reached in 2015 by the EU15 and in 2020 by the EU25, while the target for female employment is projected to be met in 2010.³⁸ Surprisingly, the author does not draw attention to the fact that the European Union is projected to lose more than 1 million jobs per year between 2025 and 2050.

The CEFMR labour market projections

After an extremely thorough review of migration theories, forecasting models and econometric methodologies, the CEFMR has produced a labour market projection for 27 European countries³⁹ based on the MULTistate POPulation model for multiLEvel Systems model.⁴⁰ The base scenario, the most probable one according to the authors of the projection, is characterized by the following conclusions:

- 38
For older workers, employment is projected to increase sharply by 19 percentage points from 40 per cent in 2004 for the EU25 to 47 per cent by 2010 and 59 per cent in 2025. This is well in excess of the 50 per cent Lisbon target, which is projected to be reached by 2013.
- 39 The sample includes 25 European Union countries (with the exception of Malta, Cyprus and Croatia) and two European Free Trade Association countries (Switzerland and Norway).
- 40 The model – a multiregional model that combines the features of two methodological traditions of forecasting population dynamics: geographic and demographic – was originally created by Kupiszewski and Kupiszewska (1998). It describes “[the] population as a system, and migration as a link between elements thereof”.

- (a) The overall total population of the 27 countries under study will hardly change over the following 50 years, increasing from the 2002 value of 494.1 million to 494.9 million by 2052;
- (b) This demographic stability is to a large extent due to migration from other parts of the world. During the 50 years that the forecast covers, 58.5 million people are expected to migrate to the countries in question (on average: 1.2 million persons per year). The almost 32 million descendants that they are expected to generate will more than compensate for a natural decline in the total population that is forecast to be of around 16 per cent;
- (c) While total population is expected to remain substantially stable, a very pronounced ageing process will be paralleled by a notable decline in WAP; and
- (d) The decline in WAP will provoke in its turn a decline in labour force by almost 10 per cent; therefore, the labour force will decline by around 23 million (from 233 to 210 million). The study emphasizes that in the absence of migration from outside the area considered, the labour force would decline by 65 million, that is, by 28 per cent.

The final part of the paper emphasizes that the underlying problem of the study is measuring the deficit in the population size and distortion of age structure. In this respect, the paper suggests that there are three theoretical possibilities for reducing the demographic imbalances that emerged in the scenarios: two are of a demographic nature (migration and fertility), and the third is a labour market measure (increasing participation), which are not to be seen as exclusive. Increasing migration or labour force participation can be at least partially effective in keeping under control the demographic and labour market imbalances only if the two measures are used jointly. For what relates to fertility, the paper concludes that only a long-term increase in fertility patterns might bring in the demographic change necessary for reducing the process of ageing populations. This conclusion is based on the Lesthaeghe and de Kaa (1986) consideration that the recent fertility change has occurred due to changes in the values, aims and preferences of women and families.

The final paper to be considered is by Loichinger (2015), which covers 26 European Union countries for the period 2008–2053. The novelty of this paper is that besides sex and age, this projection also considers educational levels. The implication is that the labour force is projected as usual on the basis of demographic projections, but that these are differentiated not only

by sex and age, but also by educational level. The main conclusion is that the labour force will decline, but less so than in previous projections. This is due to the fact that, not surprisingly, the educational level will increase in all the countries considered independently by economic development, and labour force participation increases with the level of education.

A model for explaining and forecasting migrations flows

The analysis has shown that the weakest point of existing demographic scenarios is represented by the hypotheses regarding migrations. This comes at a time in which migration flows are becoming the crucial element in explaining the demographic trends of many countries. Therefore, in order to produce more reliable demographic and labour market projections, a model that is able to explain migration flows is needed, a model that, as already shown, is missing both in the demographic and economic literature.

The model proposed is based on the idea that migrations are determined by the presence of SSL in the countries more advanced along the path of the demographic transition (generally the most developed ones), in the presence of an unlimited supply of labour in the countries that are still in the initial phase of the demographic transition (Bruni, 2008, 2009, 2012a). To explore and develop this idea, the following are needed:

- (a) An approach to labour market analysis that allows for structural disequilibria between labour demand and labour supply; and
- (b) An analysis of the impact of the demographic transition on the demographic structure of the planet.

A stock-flow model of the labour market

The standard neoclassical model does not provide an analytical framework suitable for understanding many basic events and mechanisms of the labour market, including migrations. For instance, the neoclassical model does not explain the following: (a) how different generations succeed each other in the labour market; (b) why the transition from education to work is easier for certain generations than for others; (c) why certain educational levels make finding a job more probable than others; and (d) why certain emigration countries have become immigration countries.

The reasons are many. It is enough to recall that the neoclassical model of the labour market is based upon a production function, in which labour (L) is a

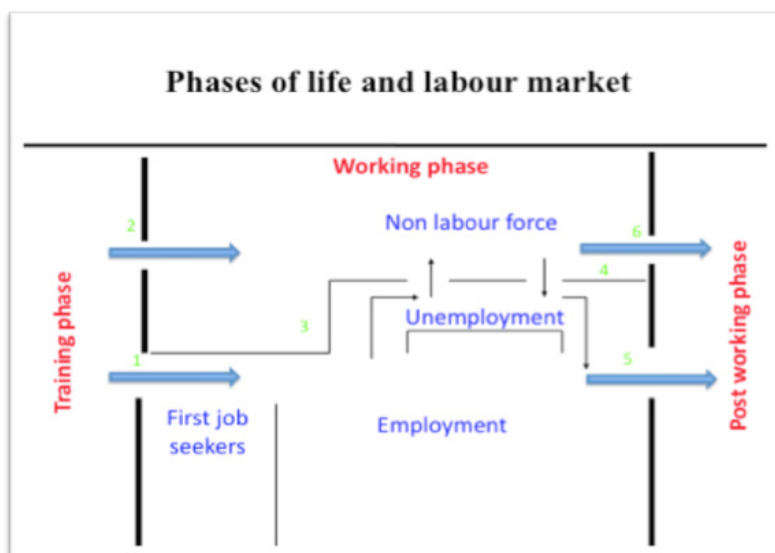
variable factor and does not represent individuals and their history, but labour services. Moreover, the model has a built-in equilibrium mechanism based on the idea that changes in the real wage are always sufficient automatically to equate labour demand and supply.

All this suggests that in order to explain migrations, a flow variable, the necessary model should: (a) include not only stock variables, but also flow variables; (b) portray real individuals acting in real time; and (c) allow for the possibility of structural disequilibria between labour demand and supply, that is, disequilibria that cannot be solved by changes in the real wage, but require long-term adjustments in WAP and/or in the production level.

Figure 1 provides a simplified representation of human life and population. It can also be used to represent a stock-flow model of the labour market (Bruni, 1988, 1993).

From an economic perspective, human life can be divided into three phases that define three corresponding subpopulations: (a) the training phase and the population in the training phase; (b) the working phase and the WAP; (c) the post-working phase and the post-working phase population. From a labour market perspective, WAP includes other subpopulations relevant for labour market analysis: labour force as differentiated into employment, unemployment and first-job seekers, and the non-labour force. These populations are the main stock variables of the model.

Figure 1: Stock flow representation of the labour market



Source: Author's own elaboration.

If an interval of time is considered, the arrows in the figure are given life. They represent the flow variables that measure people moving from one condition to another (from one population to another) in any given time interval.

In any given time interval, the flow variables determine the quantitative and qualitative changes registered by the related stock variables:

- (a) Births and deaths determine the natural dynamic of total population;
- (b) The number of people turning 15, the number of people turning 65, and the deaths registered in working age determine the natural dynamic of WAP; and
- (c) Entries and exit flows determine the level, structure and trends of employment and the labour force.

The following can now be defined:

- (a) Generational entries into the labour force as the “labour supply in terms of flows” (*LSF*); and
- (b) Generational entries into employment as the “labour demand in terms of flows” (*LDF*).

Generational entries into employment are determined by the sum of two components: (a) the increase in the employment level (additional demand, *AD*); and (b) the definitive exits from employment due to retirement and deaths taking place in the 15–64 age bracket (replacement demand, *RD*).

The level of *AD* is determined by the rate of growth of production (*Y*), by the real wage (*W*) and technological innovation (*T*):

$$[1] AD = AD(Y, W, T)$$

AD can be positive or negative, depending on the phase of the economic cycle. *RD* represents the major component of the *LDF*. As previously seen, *RD* measures entries into employment due to the need to replace people exiting definitively from employment as a result of retirement or death. It is influenced by the retirement laws and their modifications, as well as by the economic cycle that influences workers’ expectations. However, its main determinant is the age structure of the employed (*ASE*). Therefore, its value tends to change slowly through time. A simple specification of the supply function can be the following:

$$[2] \text{ RD} = \text{RD}(\text{ASE}, t; \text{INR})$$

where t represents time, and INR is a parameter that tries to capture the effect of institutional norms and rules.

Moving now to the supply side, entries into the labour force are the sum of two components: (a) the primary labour force constituted by all breadwinners, typically men but also a growing number of women who see work as the normal outcome of their training phase and consider labour market participation both as a right and as a duty; and (b) the secondary labour force, represented mainly by students and homemakers, whose participation fluctuates with the economic cycle. Therefore, it can be assumed that the entries of primary workers are determined by entries in the WAP (and therefore by the number of births that took place at a time $(t - n)$, where n is the average duration of the training phase. Entries of secondary workers will be determined by the perceived probability of finding a job, which can be measured by the LDF, given the norms and values that define the social role of women (INRW).

$$[3] \text{ LSF} = \text{LFS}(\text{WAP}, \text{LDF}; \text{INRW})$$

Therefore, the labour market is in a state of flow equilibrium if the LSF is equal to the LDF, that is, if generational entries into the labour force are equal to generational entries into employment:

$$[4] \text{ LSF} = \text{LDF}$$

$$\text{LSF}(\text{WAP}, \text{LDF}; \text{INRW}) = \text{AD}(\text{Y}, \text{W}, \text{T}) + \text{RD}(\text{ASE}, t; \text{INR})$$

In other words, the labour market is in a state of flow equilibrium if the number of jobs created by the economic system, in a given time interval, is equal to the difference between generational entries into the labour force and generational exits from employment:

$$[5] \text{ AD} = \text{LSF} - \text{RD}$$

It is evident that such an equilibrium solution is not normally achieved, with disequilibrium being the norm. When demographic trends are not highly relevant, cyclical oscillations determine fluctuations in unemployment. Empirical evidence shows, as will be documented, that the demographic transition is producing gaps between labour demand and labour supply that cannot be closed by changes in the real wage and are the main cause of the increase in

international migrations that have characterized the last 60 years.

The migration model

If entries into the labour force remain largely lower than generational exits from employment for a long time, changes in the real wage do not suffice to equate labour demand and labour supply; conversely, if entries into the labour force largely exceed generational exits from employment (RD) for a long time, the local economy cannot produce the number of additional jobs necessary to close the gap.

The presence of countries at different stages of the demographic transition leads to the co-presence of countries that present an SSL supply and countries that present an SEL supply. The first group of countries presents a potential need for foreign labour, and they are therefore potential arrival countries, while the second group presents a migratory potential, and is therefore constituted by potential departure countries.

The model assumes that SSL supply will necessarily attract the migrants necessary to close the gap between labour demand and supply, given the presence of an unlimited supply of labour in the countries in the initial phase of the demographic transition. In effect, migrations are *pulled* by a labour demand that largely exceeds the local supply, but need the presence of SEL supply in other countries. The model does therefore forecast that countries with SSL supply will present a positive migration balance, and that the size of the balance will be in line with their employment needs.

Using a simplified stock approach, total employment needs (TEN) can be defined as the difference between the change in labour supply (ΔLS) and the change in labour demand (ΔE) in a given time period, where labour demand and supply are here defined in terms of stock:

$$[6] \text{ TEN} = \Delta LS - \Delta E$$

The change in labour supply will be determined by the change in WAP, and by the change in the rate of participation:

$$[7] \Delta LS = [(RoP_t * \Delta WAP) + (\Delta RoP * WAP_{t+1})]$$

The change in the employment level will depend on economic growth and on the employment income elasticity (ϵ):

$$[8] \Delta E = t (\Delta Y/Y)_{t+1} * \epsilon$$

Therefore:

$$[9] TEN = [(RoP_t * \Delta WAP) + (\Delta RoP * WAP_{t+1})] - t (\Delta Y/Y)_{t+1} * \epsilon$$

A negative value indicates that the local labour supply is not sufficient to satisfy the demand. If the situation persists, it will determine the inflow of migrants. Their number will normally exceed the TEN, because a relevant and an increasing number of them will come with or will be followed by family members. Therefore the migration balance (MB) will be equal to:

$$[10] MB = b * TEN$$

At the beginning of the migration phase, *b* will probably just be equal to 1, but as the migration becomes more structural, the value of *b* will progressively increase up to values between 1.4 and 1.5 (Bruni, 2009).

Demographic transition, population dynamics and demographic polarization

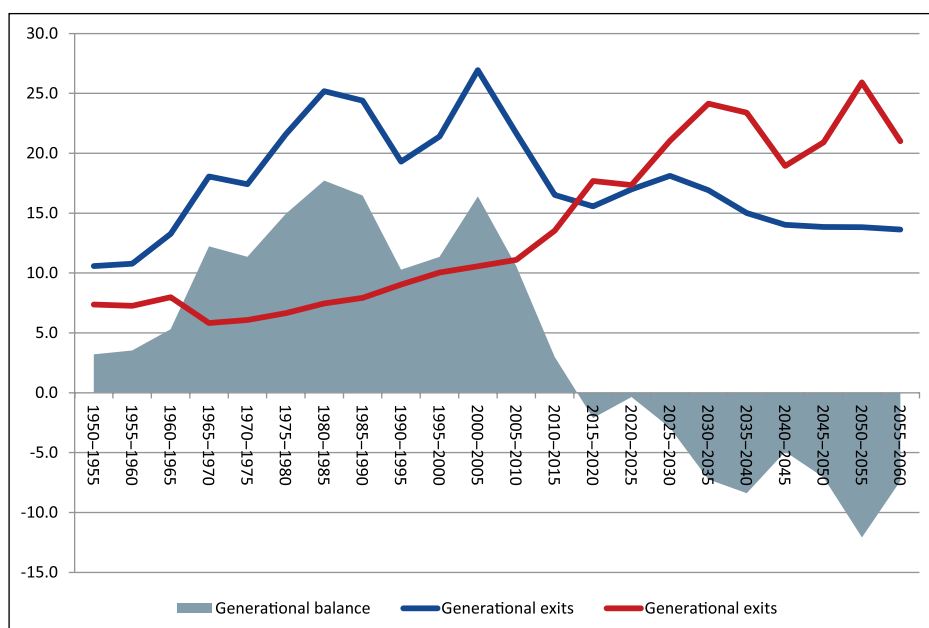
The demographic transition is defined as the passage from a “traditional” demographic equilibrium, characterized by high rates of fertility and mortality, to a “modern” demographic equilibrium, characterized by low rates of fertility and mortality. Therefore, it is generally assumed that the decline in the total fertility rate (TFR) would stop at around 2.1 children per woman, which assures a stable population. As a matter of fact, the TFR has already dropped well below 2 in numerous developed and developing countries, producing a negative natural balance.

The demographic transition is ignited by a decline in the mortality rate, mainly due to improvements in hygiene and its impact on the infant mortality rate. In the first phase, total population increases at an increasing rate. After around 30 years, fertility starts to decline so that the number of births progressively approaches the number of deaths. In this second phase, total population continues to increase, but at a decreasing rate. Finally, the number of births becomes smaller than that of deaths and the total population starts to decline.

The demographic transition has the same impact on WAP as it does on any other subpopulation. In the first phase, generational entries into WAP expand, while generational exits remain constant and WAP increases at increasing rates. In the

second phase, generational entries decline, while generational exits increase, so WAP continues to grow, but at a declining rate. The moment arrives when generational exits exceed generational entries and WAP starts to decline. This process is well exemplified by China where the demographic transition has proceeded at a very fast pace (Bruni, 2013, 2014). As is shown by Figure 6, the first phase ended in 1975, while the second will end before 2020.

Graph 2: China's WAP; generational entries, generational exits and natural balance; from 1950–1955 to 2055–2060



Note: Average yearly values are in millions.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

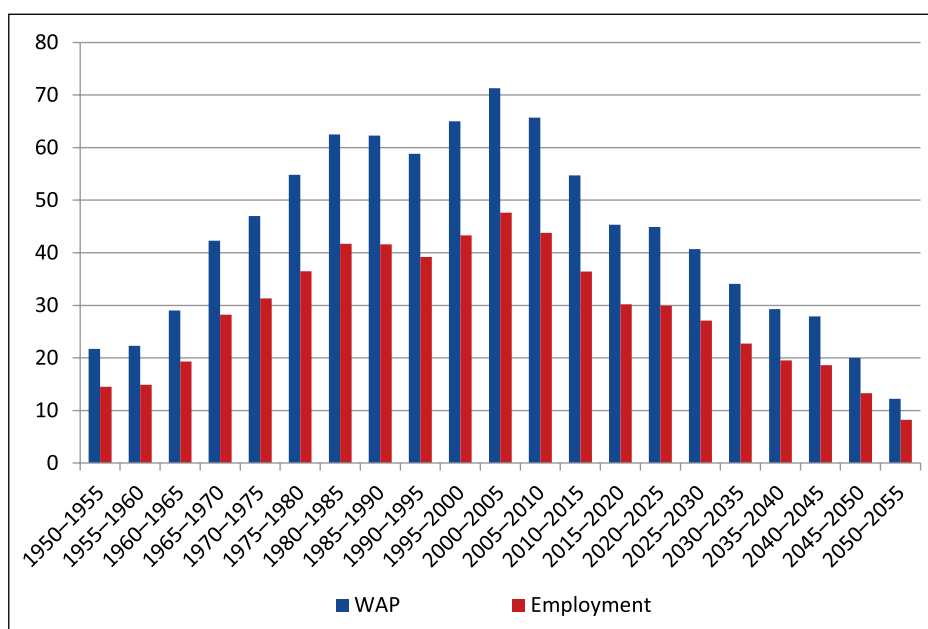
The critical acceptance of this “theory” has led demographers to conclude that the demographic transition produces the following:

- (a) A decline in total population;
- (b) An even more pronounced decline in WAP; and
- (c) An increasing ageing phenomena.

These conclusions are certainly valid for the planet as a whole. As is shown by Graph 3, the yearly increase in the world's WAP reached a maximum in the

2000–2005 period with an average yearly value of more than 71 million. In that period, in order to keep the rate of employment (RoE) constant at, say, 66 per cent, the world economy would have had to create almost 50 million jobs per year. Since then, the growth of WAP has been declining and, according to the medium variant scenario of UN DESA, should be down to around 12 million by the middle of the century, so the yearly need for additional jobs will go below the “marginal” value of 10 million. The author estimates that the negative trend will continue and WAP will soon start to decline.⁴¹

Graph 3: Yearly average growth of WAP and number of additional jobs needed to keep the RoE constant at 66 per cent; from 1950–1955 to 2050–2055



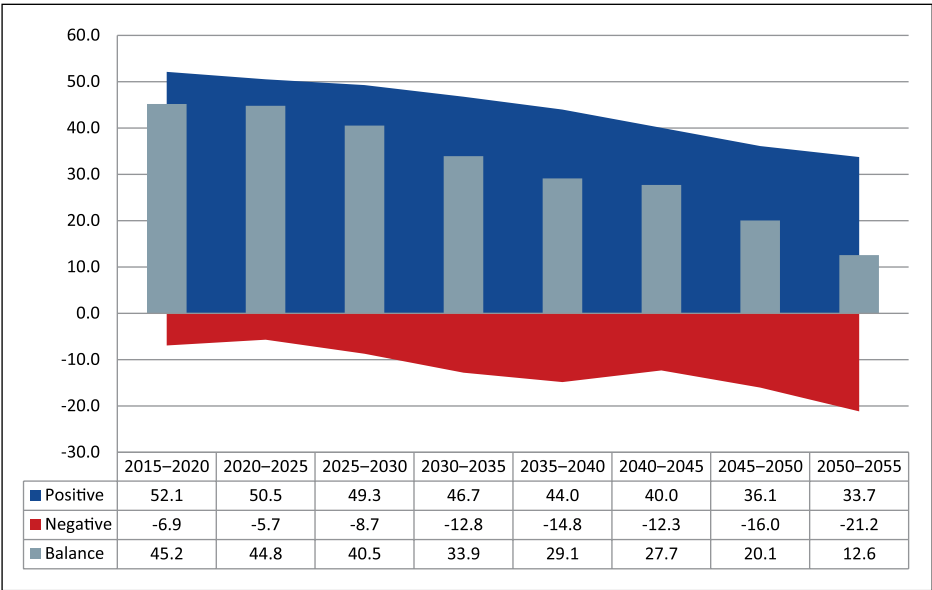
Source: Elaboration on UN DESA data, (UN DESA, 2013a).

The decline in the growth of world WAP will be determined by both a reduction

⁴¹ This was also the opinion of UN DESA until 2010. In fact, the 2010 World Population Prospects assumed that the TFR would converge, from above or from below, to 1.85 in all countries of the world (UN DESA, 2011). The implication was that the world population would start to decline during this century. In the 2012 Revision, this assumption was changed, and it was now assumed that the TFR would converge to 2.1. This new hypothesis, in line with the demographic tradition, projects the convergence of world population towards a stable value of around 11 billion for the end of the century (UN DESA, 2013a).

in the national positive balances (from 52 to 34 million) and an increase in the national negative balances (from 7 to 21 million) (Graph 4).

Graph 4: World's WAP; sum of national positive balances and negative balances; from 2015–2020 to 2050–2055



Note: Values are in millions.
Source: Elaboration on UN DESA data (UN DESA, 2013a).

It should, however, be emphasized that the demographic transition began in different countries at different moments in time, over a period of almost 200 years. This is the cause of an increasing demographic polarization of the planet: the co-presence of an increasing number of countries where WAP will dramatically decline, and a decreasing number of countries where WAP will explode. By now, more than 50 countries, mainly in Europe and Asia, are characterized by a declining WAP. In the absence of migration, their number is expected to increase to 111 by 2055, when the phenomenon will be present in every continent, with only Africa lagging behind (Table 10).

Table 10: Countries with declining WAP in 2015–2020 and 2050–2055; total number and percentage incidence over the total

	Total number of countries	Number and percentage of countries with negative changes in WAP		
		2015–2020	2050–2055	
		Absolute value		%
Africa	57	0	7	12.3
Asia	51	10	39	76.5
Europe	40	37	39	97.5
North America	2	2	2	100.0
Caribbean	17	4	9	52.9
Central America	8	0	4	50.0
South America	13	0	7	53.8
Oceania	13	1	4	30.8
Total	201	54	111	55.2

Source: Elaboration on UN DESA data (UN DESA, 2013a).

Table 11 shows the sum of the changes in the level of WAP that will be registered in Africa, Asia, Europe, Latin America, NWC (Canada, United States, Australia and New Zealand) and other Oceania countries, classified in positive and negative, and the relative balance for the period 2015–2055.

Table 11: World and continents' sum of positive and negative national balances and continental balances; 2015–2055

	2015–2020	2020–2025	2025–2030	2030–2035	2035–2040	2040–2045	2045–2050	2050–2055	Total
Africa									
Positive	92.3	105.4	117.7	126.6	133.1	137.8	141.9	146.3	1,001.0
Negative	0.0	0.0	0.0	0.0	0.0	-0.2	-0.8	-0.8	-1.9
Balance	92.3	105.4	117.7	126.5	133.0	137.6	141.1	145.5	999.1
Asia									
Positive	139.9	124.3	110.1	92.0	74.9	53.4	32.4	18.4	645.4
Negative	-14.3	-7.4	-21.2	-44.4	-53.3	-37.8	-52.7	-80.1	-311.3
Balance	125.6	116.9	88.9	47.5	21.6	15.6	-20.3	-61.7	334.1

	2015– 2020	2020– 2025	2025– 2030	2030– 2035	2035– 2040	2040– 2045	2045– 2050	2050– 2055	Total
Europe									
Positive	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.4
Negative	-18.5	-17.1	-18.3	-17.7	-19.2	-20.0	-19.4	-16.0	-146.4
Balance	-18.4	-17.0	-18.3	-17.7	-19.2	-19.9	-19.4	-16.0	-146.0
NWC									
Positive	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.3
Negative	-1.8	-3.8	-3.5	-1.3	-0.7	-0.8	-2.3	-2.8	-16.9
Balance	-1.8	-3.8	-3.5	-1.3	-0.5	-0.7	-2.3	-2.8	-16.5
Latin America									
Positive	27.5	22.0	17.6	14.4	10.9	8.1	5.5	3.3	109.4
Negative	0.0	-0.2	-0.6	-0.6	-1.0	-2.8	-5.0	-6.2	-16.4
Balance	27.5	21.8	17.0	13.8	9.9	5.3	0.5	-2.9	93.0
Other Oceania countries									
Positive	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	5.9
Negative	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balance	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	5.9
World									
Positive	260.6	252.5	246.3	233.7	219.9	200.2	180.5	168.7	1,762.4
Negative	-34.7	-28.5	-43.7	-64.1	-74.2	-61.7	-80.2	-105.8	-492.9
Balance	225.9	224.0	202.6	169.7	145.6	138.6	100.3	62.8	1,269.5

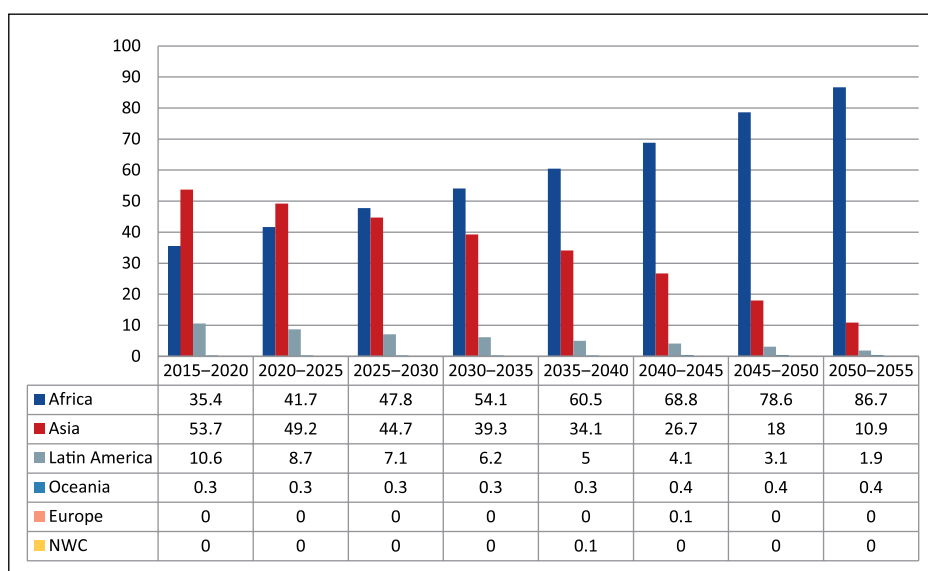
Source: Elaboration on UN DESA data (UN DESA, 2013a).

On the one hand, almost all the countries in Asia and other Oceania countries present positive changes in WAP over the entire period. On the other hand, all European countries, as well as the NWC, present negative balances. Both Asia and Latin America present a progressive decline of the positive values and a progressive increase of negative values.

The following two figures show the relative contribution of each continent to the positive (Graph 5) and negative (Graph 6) world values in the eight five-year periods between 2015 and 2055.

At the beginning of the period, the greatest contribution to WAP growth came from Asia, which counted for 53.7 per cent of the total, followed by Africa with 35.4 per cent, and Latin America with 10.6 per cent. After 40 years, in the absence of migration, Africa's contribution is expected to reach almost 87 per cent with Asia down to 10.9 per cent, and Latin America to 1.9 per cent (Graph 5).

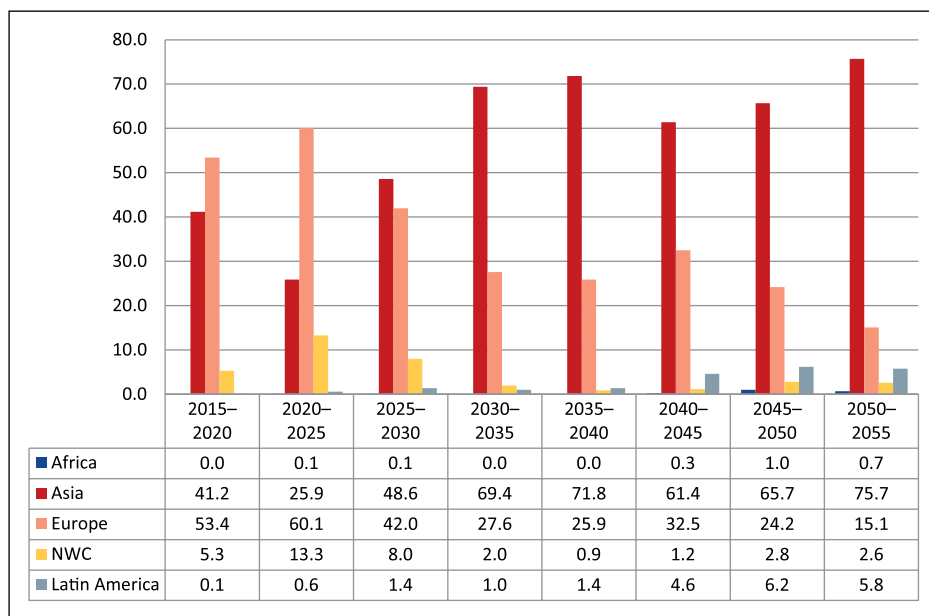
Graph 5: World's positive balances of WAP; percentage contribution of continents and areas with respect to the sum of the national positive changes; from 2015–2020 to 2050–2055



Source: Elaboration on UN DESA data (UN DESA, 2013a).

On the other hand, between 2015 and 2020, the decline in WAP will be concentrated in Europe (53.4%) and Asia (41%), with a marginal contribution of the NWC (5.3%). The weight of Europe will peak in the following period and will then progressively decline, while that of Asia will progressively increase; this trend is mainly due to China, whose size in terms of the world's value will increase from 27.3 to 56.2 per cent (Graph 6).

Graph 6: World's negative balances of WAP; percentage contribution of continents and areas with respect to the sum of the national negative changes; from 2015–2020 to 2050–2055



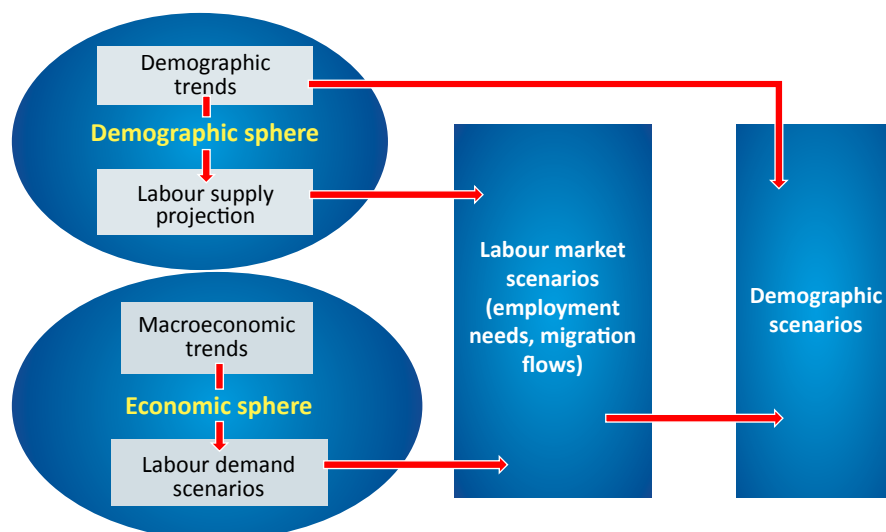
Source: Elaboration on UN DESA data (UN DESA, 2013a).

The previous data therefore suggests that some massive transformations in the level and direction of international migration flows are to be expected.

A new procedure for jointly building labour market and demographic scenarios

The new procedure for constructing scenarios that is being re-proposed here (Bruni, 2012a) can be divided into two phases (Figure 2).

Figure 2: Procedure for jointly building labour market and demographic scenarios



Source: Author's own elaboration.

The first phase is the estimation of the migration model that has just been presented. This should be done in two steps. In the first step (the demographic path), the projection of WAP represents the prerequisite for estimating alternative scenarios of labour supply based on different rates of participation by sex and age group. In the second (the economic path), alternative scenarios of labour demand are estimated on the basis of different rates of economic growth and employment-income elasticity. The two paths merge to produce alternative scenarios of labour shortage (employment needs) and migration balances, and therefore of WAP.

The second phase allows the projection of scenarios for the total population following the standard procedure, that is, by estimating the number of births (via the number of women of fertile age and following hypotheses regarding fertility) and the number of elderly (based on hypotheses regarding the specific rates of mortality).

This procedure does therefore produce fully fledged demographic scenarios based on the demographic trend, alternative rates of labour market participation and alternative rates of economic growth, as well as the usual hypotheses concerning fertility and mortality.

PART 2

The scenarios

DEMOGRAPHIC TRENDS IN EUROPE AND IN THE EU28

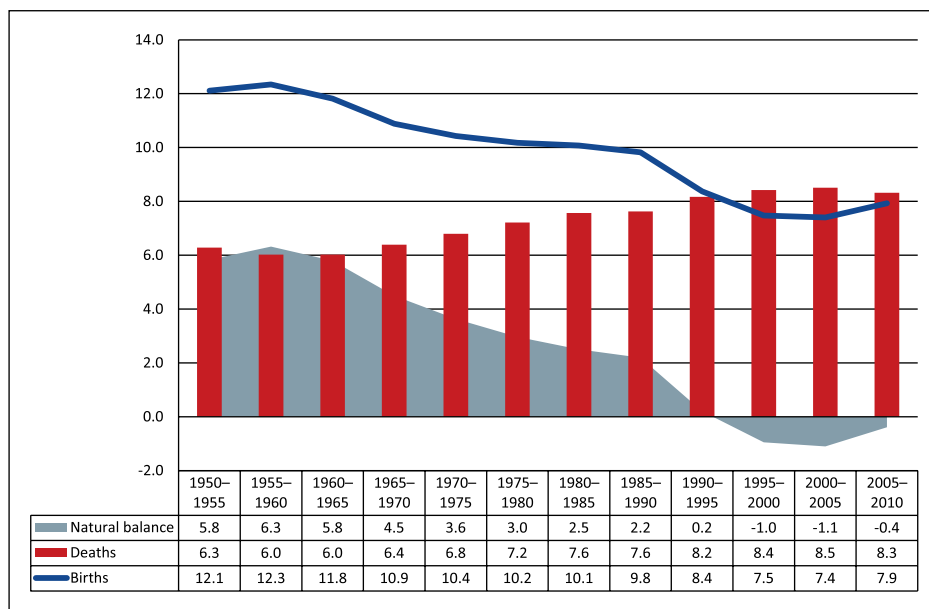
Europe⁴²

In 1950, the total population of Europe amounted to around 549 million. In the following 60 years, it increased by 191 million (34.8%), reaching a record level of 740 million.

One part of the story is told by Graph 7, which shows the progressive decline of the average annual number of births from an initial value of 12.1 million to a minimum of 7.4 million at the beginning of the century. At the same time, the number of deaths increased from 6.3 million to 8.5 million. It should be noted that between 2005 and 2010, births registered a small increase and deaths a small decline: there is not enough information to understand whether this is a transitory phenomenon or the beginning of a new trend. As a consequence, the natural balance of the total population progressively declined from almost 6 million to a negative value of -1.1 million to then to -0.4 million.

.....
42 According to UN DESA, Europe includes 48 countries. However, data are not available for 9 micro-States. Therefore, this report's definition of Europe covers the 28 European Union countries and 11 non-European Union countries: Belarus, the Republic of Moldova, the Russian Federation, Ukraine, Iceland, Norway, Albania, Bosnia and Herzegovina, Montenegro, the former Yugoslav Republic of Macedonia and Switzerland.

Graph 7: Europe's births, deaths and the natural balance; 1950–2010

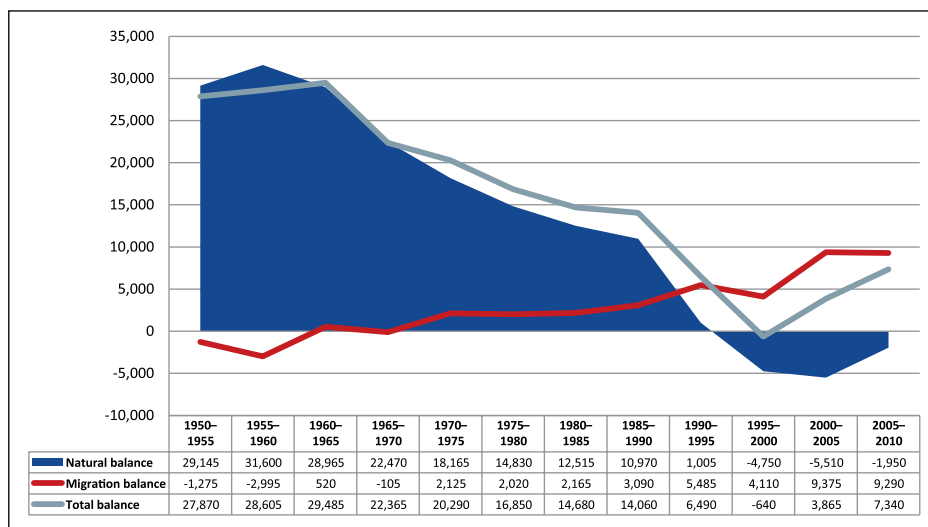


Source: Elaboration on UN DESA data (UN DESA, 2013a).

The decline in the natural balance is paralleled by a progressive increase in the arrival of migrants. More specifically, until the beginning of the 1970s, Europe had been exporting labour (almost 4 million people had left between 1950 and 1970). Since then, the migration balance has been positive and has progressively increased, averaging a yearly value of almost 2 million in the first 10 years of the century (Graph 8).

Due to these opposing trends of the natural balance and of the migration balance, since the beginning of the century, the European population has been growing only as a result of the inflow of migrants.

Graph 8: Europe's natural balance, migration balance and total balance; 1950–2010



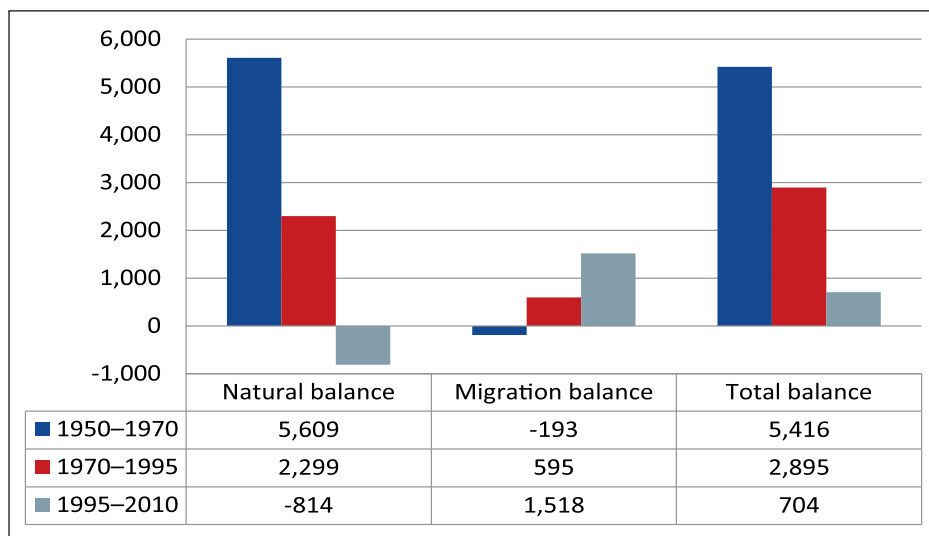
Source: Elaboration on UN DESA data (UN DESA, 2013a).

Three phases clearly emerge (see Graph 9):

- In the first (1950–1970), the total population increased at a yearly average of 5.4 million, while the migration balance was negative;
- In the second (1970–1995), the yearly absolute growth of the population (total balance) declined to 2.9 million, one fifth of which was due to the migration balance; and
- In the third (1995–2010), the yearly average growth of the population went down to 0.7 million as a result of a negative natural balance of -0.8 million and a positive migration balance of +1.5 million.

In conclusion, Europe moved from a situation of a sustained demographic growth produced by the natural balance, to a situation of slow growth due only to the migration balance. Graph 9 makes clear the decline in the rate of growth of the European population and the opposite trends of the natural balance and the migration balance.

Graph 9: Europe's natural balance, migration balance and total balance; the three phases registered between 1950 and 2010



Source: Elaboration on UN DESA data (UN DESA, 2013a).

As a result of the decline in fertility, the new generations became smaller and smaller, while the average duration of life progressively increased. This obviously had an impact on the age structure of the population. While the percentage of those in working age did slightly increase between 1950 and 2010 (+3 percentage points), the share of the elderly more than doubled in that time period (from 8 to 16.3%) and that of the young declined from 26.3 per cent to 15.4 per cent (Table 12).

Table 12: Europe's total population by main age group; percentage composition in 1950 and 2010

Total population				
	Percentage composition			
	0–14	15–64	65+	Total
1950	26.3	65.7	8.0	100.0
2010	15.4	68.3	16.3	100.0
Difference	-10.9	2.6	8.3	

Source: Elaboration on UN DESA, 2013a.

Another compelling way to synthesize the previous observations and more specifically the two phenomena that have dominated the demographic trends of Europe is provided by Table 13, which shows the values of the TFR and of the migration balance (MB). At the beginning of the 1950s, the TFR was around 2.7 children per woman; it then declined below the replacement rate of 2.1 children per woman in the middle of the 1970s and has since remained well below the replacement level. In the same period, the MB changed from negative to positive at the beginning of the 1970s, and since then, its value has progressively increased from an average yearly value of around 425,000 to 1,850,000 in the first 10 years of the new century.

Table 13: Europe's total fertility rate and migration balance

	TFR	MB
1950–1955	2.7	-1,273
1955–1960	2.7	-2,995
1960–1965	2.6	521
1965–1970	2.4	-106
1970–1975	2.2	2,125
1975–1980	2.0	2,018
1980–1985	1.9	2,164
1985–1990	1.8	3,088
1990–1995	1.6	5,487
1995–2000	1.4	4,112
2000–2005	1.4	9,373
2005–2010	1.5	9,288

Source: Elaboration on UN DESA data (UN DESA, 2013a).

This would seem to suggest that migrations are negatively related to natural demographic trends, that people will move where total population declines. As previously shown, fertility and migration are connected, but in a more complex way.

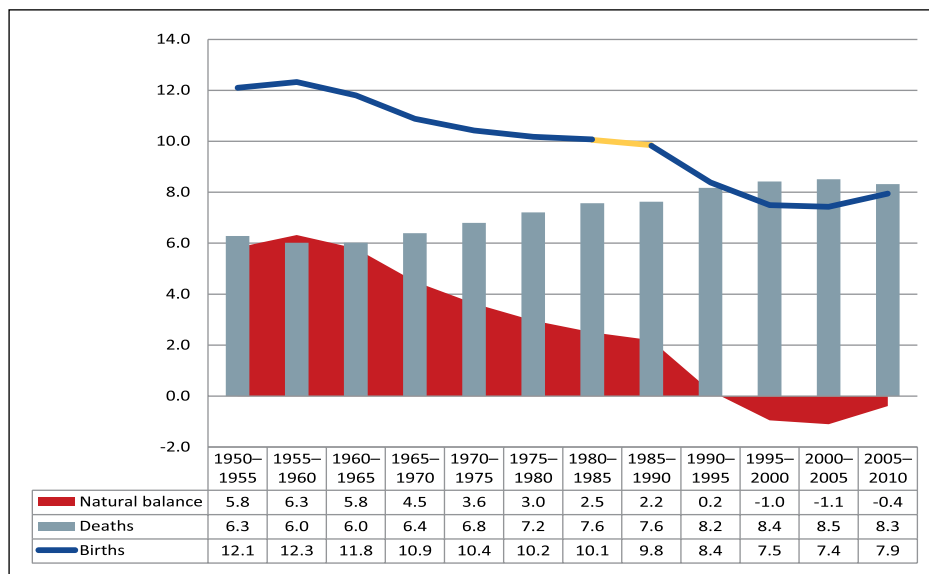
The European Union

In 2010, the total population of the 28 countries that today constitute the European Union amounted to 504 million, registering an increase by 127 million (+33.6%) when compared to 1950. Therefore, the ratio between the 28 European Union countries and the total European population has remained constant at around 68 to 69 per cent.

The European Union's demographic trends are similar to those of Europe (Graph 10). More specifically:

- (a) The number of births has progressively declined from an initial yearly average value of 6.9 million to a historical minimum of 4.7 million annually at the beginning of the century. There was a slight increase to 4.9 million annually in the following five-year period. Deaths increased from 4 million annually to a maximum of 4.75 million between 1990–1995 to then slightly decline. The interaction of these trends has brought the natural balance down from 2.9 million per year to 93,000 (between 2005 and 2010). The following period seems to register an increase in the natural balance, but also in the case of the European Union, it is too early to state that what is being witnessed is an inversion of the previous trend.

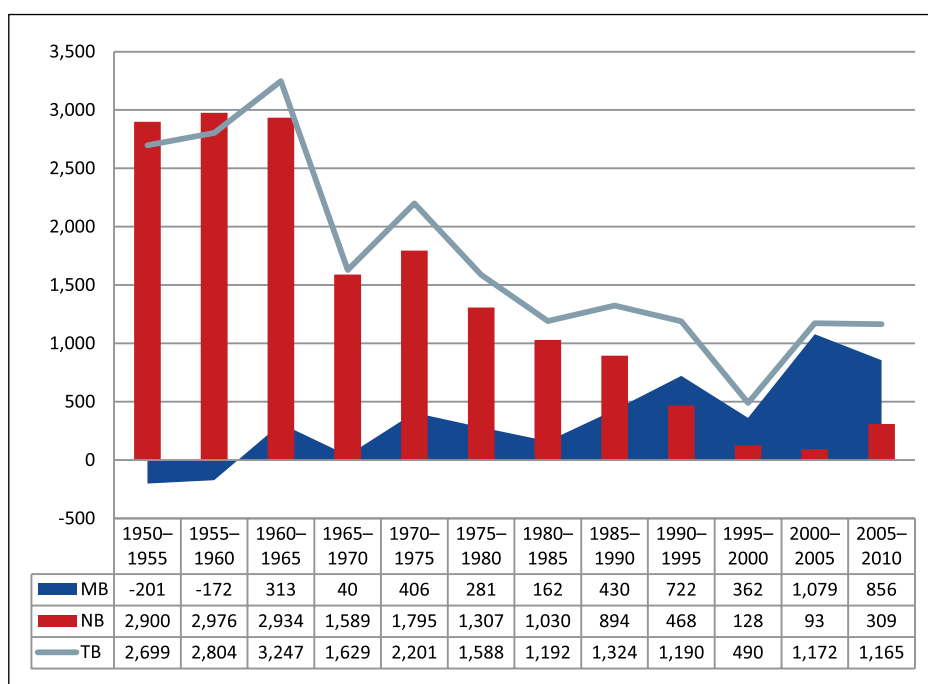
Graph 10: European Union's births, deaths and the natural balance; 1950–2010



Source: Elaboration on UN DESA data (UN DESA, 2013a).

- (b) The migration balance changed from a negative to a positive sign at the beginning of the 1960s and presents an overall positive trend that is however characterized by cyclical oscillations (Graph 11).

Graph 11: European Union's natural balance, migration balance and total balance; 1950–2010



Source: Elaboration on UN DESA data (UN DESA, 2013a).

- (c) Given the opposite trends of the natural balance and the migration balance, the role of migrations has become more and more important in explaining the total change in population. Between 1960 and 1995, migration represented around 19 per cent of the total population growth, a percentage that increased to 81 per cent between 1995 and 2010.

The ageing process in the European Union has been slightly more pronounced than that of Europe (Table 14).

Table 14: European Union's total population by main age group; 1950 and 2010

Total population				
	Percentage composition			
	0–14	15–64	65+	Total
1950	25.2	66.0	8.8	100.0
2010	15.6	67.0	17.4	100.0
Difference	-9.6	1.0	8.6	

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The single countries of the European Union

When moving from the European Union level to the country level, the situation becomes much more differentiated and complex.

Since the end of the twentieth century, the TFR of all 28 European countries has been below the replacement level of 2.1 children per woman. This implies that in the absence of migration, all European Union countries would end up experiencing a population decline. The first country to enter this situation was Hungary in 1960–1965, followed by Croatia in the next five years, and then between 1970 and 1975 by a series of mainly northern countries (Austria, Belgium, Denmark, Finland, Germany, Luxembourg, the Netherlands, Sweden and the United Kingdom), followed by Estonia, France and Italy. Another eight countries, this time mainly in the south and in the east, reached this level of the replacement level in 1980–1985; five more (the catholic Republic of Ireland and four countries of Eastern Europe) at the beginning of the 1990s, and finally Cyprus before the end of the century (Table 15).

Table 15: European Union countries by year in which the TFR declined below the replacement level

1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1990–1995	1995–2000
Hungary	Croatia	Austria, Belgium, Denmark, Finland, Germany, Luxembourg, the Netherlands, Sweden, United Kingdom	Estonia, France, Italy	Bulgaria, Czech Republic, Greece, Lithuania, Malta, Portugal, Slovenia, Spain	Ireland, Latvia, Poland, Romania, Slovakia	Cyprus

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The negative trend of the TFR is reflected, albeit in an imperfect way, by the negative trend of the natural balance. From this perspective, two groups of countries can be identified:

- In the first group of 16 countries (Austria, Belgium, Cyprus, Denmark, Finland, France, Greece, Ireland, Luxembourg, Malta, the Netherlands, Norway, Poland, Slovakia, Sweden, United Kingdom), the natural balance has been progressively declining, but is still positive; and
- In the second group of 12 countries, the natural balance has already been negative for quite a while: Germany (since 1965–1970), Hungary (since 1980–1985), Bulgaria, Croatia, Czech Republic, Estonia, Italy, Latvia (since 1990–1995), Lithuania, Romania and Slovenia (since 1995–2000), Portugal (since 2005–2010).

If the migration balance from this perspective will finally be considered, the following four groups of countries can be distinguished:

- Departure countries (countries whose migration balance has been negative for the whole period or a great part of it): Bulgaria, Croatia and Romania;
- Arrival countries (countries whose migration balance has been positive for the whole period or a great part of it): Austria, Belgium, Denmark, France, Germany, Luxembourg, the Netherlands, Sweden and the United Kingdom;
- From departure to arrival countries (countries whose migration balance has changed from negative to positive since 1970): Cyprus, Finland, Greece, Hungary, Ireland, Italy, Malta, Portugal, Slovakia, Slovenia and Spain; and
- From arrival to departure countries (countries whose migration balance has changed from positive to negative): Estonia, Latvia, Lithuania and Poland.

The migrant stock

In the middle of 2013, the international migrant stock present in the EU28 amounted to 51 million and represented almost 10 per cent of the total population. Women were 51.8 per cent of the total, up from a value of 49.9 per cent in 1990 (Table 16).

Table 16: EU28's migrants and total population by sex; 1990 to 2013

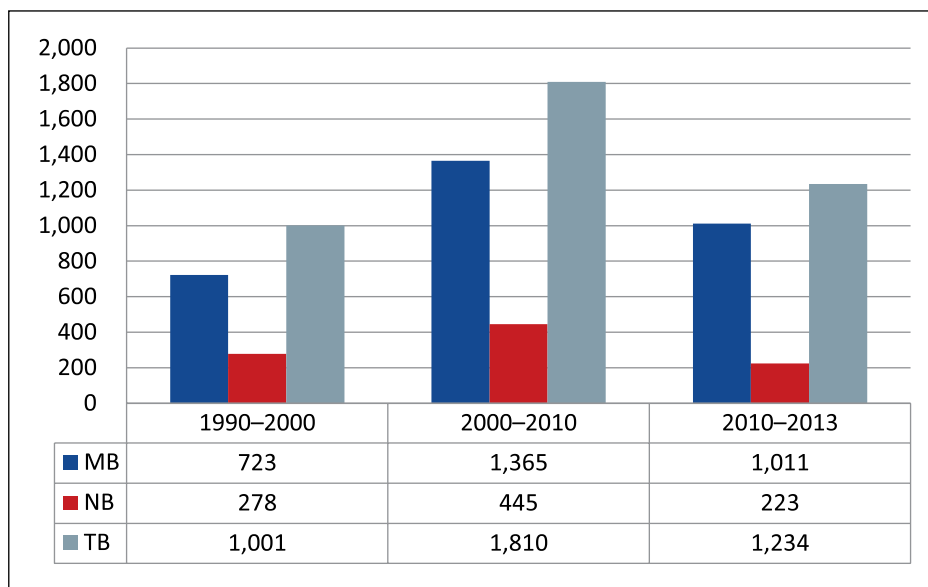
	1990	2000	2010	2013
Migrants				
Male	13.4	16.5	23.1	24.4
Female	13.3	17.4	24.5	26.2
Total	26.7	34.0	47.6	50.6
Population				
Male	232.2	237.3	246.9	249.0
Female	245.5	250.4	258.9	260.5
Total	477.7	487.7	505.8	509.5
Migrants/population				
Male	5.8	7.0	9.4	9.8
Female	5.4	7.0	9.5	10.1
Total	5.6	7.0	9.4	9.9

Note: Absolute values are in millions.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

The average yearly increase in the number of migrants peaked at the beginning of the century and subsequently declined, remaining however above 1 million per year (Graph 12). It should be emphasized that the role of migration in explaining total population growth has progressively increased from 72.2 per cent at the end of the century to a present value of almost 82 per cent. In effect, over the last 23 years, three quarters of the increase in European Union's population growth has been due to migrants. A recent slowing in the influx of migrants to the European Union may be due to the financial crisis around one decade into the 2000s.

Graph 12: EU28's natural balance, migration balance and total balance;
1990–2000, 2000–2010 and 2010–2013

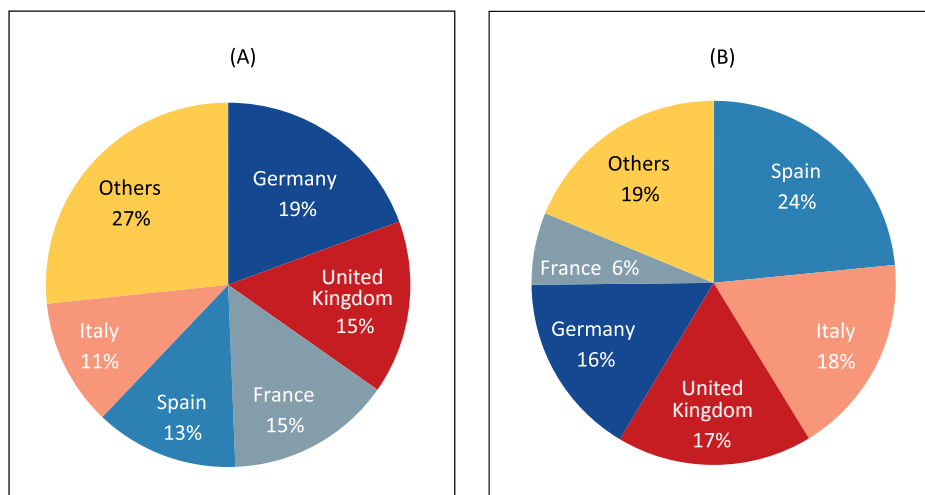


Note: Yearly average values are in thousands.

Source: Elaboration on UN DESA data (UN DESA, 2013a).

Almost three quarters of the migrants are concentrated in five countries – Germany, the United Kingdom, France, Spain and Italy – with each country registering between 19 per cent and 11 per cent of the total international migrant stock in the European Union (Graph 13). The same five countries account for almost 82 per cent of the increase in the migrant stock registered between 1990 and 2013. The ranking is however different here, with Spain first accounting for 24 per cent of the positive migration balance, followed by Italy and the United Kingdom with 18 per cent, Germany with 16 per cent and France with only 6 per cent (Graph 13).

Graph 13: EU28's percentage distribution of the migrant stock in 2013 (A), and percentage distribution of the migration balance registered in the 1990–2013 period (B)



Source: Elaboration on UN DESA data (UN DESA, 2013a).

If the percentage of migrants within the population is to be considered, the picture is quite different (Table 17). In this case, Luxembourg leads with 43.3 per cent of its total population. Thirteen countries register values between 10 and 20 per cent: together with four of the big five (Germany, the United Kingdom, France and Spain), Austria, the Netherlands and Belgium are also here. In six countries, including Denmark, Italy, Greece and Portugal, the percentage of migrants is between 5 and 10 per cent. At the bottom of the ranking, mainly Eastern European countries that are still mainly departure countries.

Table 17: EU28 countries by migrant stock as a share of total population, 2013

Countries	%	Countries	%
Luxembourg	43.3	Denmark	9.9
Croatia	17.6	Italy	9.4
Estonia	16.3	Greece	8.9
Ireland	15.9	Portugal	8.4
Sweden	15.9	Malta	8.0
Austria	15.7	Finland	5.4
Latvia	13.8	Lithuania	4.9
Spain	13.8	Hungary	4.7
United Kingdom	12.4	Czech Republic	4.0
Germany	11.9	Slovakia	2.7
Netherlands (the)	11.7	Poland	1.7
France	11.6	Bulgaria	1.2
Slovenia	11.3	Romania	0.9
Belgium	10.4	Cyprus	0.1

Source: Elaboration on UN DESA data (UN DESA, 2013a).

THE DEMOGRAPHIC PROJECTION BY UN DESA

According to UN DESA, the twenty-first century will return Europe to a phenomenon that had seemed long gone – a dramatic demographic decline. Obviously, the reasons for this phenomenon are very different from those of the past; it will no longer be disease, famine and war that create this, but the choice of parents to have, on the average, a number of children below the replacement level.

In absence of migration, in the next 35 years, the population of Europe is projected to decline by 73 million (-9.9%) from the present value of 738 million to 666 million. This is the result of a very pronounced decline of the WAP (-118 million, -23.9%), a relevant decline of the children (-18 million), and a large increase in the number of elderly people, which is expected to increase by 62 million. As a consequence, the percentage of people who are working age will register a dramatic reduction (from 66.7% in 2015 to 56.3% in 2050), while the percentage of the elderly will increase from 17.6 to 28.9 per cent.

Table 18: Europe, European Union and non-European Union countries' total population by main age group; 2015, 2050

	Total	0–14	15–64	65+	Total	0–14	15–64	65+
2015								
	Absolute values				Percentage composition			
EU28	505	78	330	97	100.0	15.5	65.3	19.2
Non-EU	234	38	163	33	100.0	16.3	69.6	14.1
Europe	738	116	492	130	100.0	15.7	66.7	17.6
2050								
	Absolute values				Percentage composition			
EU28	465	65	254	146	100.0	14.0	54.5	31.5
Non-EU	202	34	122	46	100.0	16.7	60.5	22.8
Europe	666	99	375	192	100.0	14.8	56.3	28.9
2015–2050								
	Absolute values				Percentage composition			
EU28	-40	-13	-76	50	-7.9	-16.8	-23.2	51.2
Non-EU	-33	-5	-41	13	-14.0	-12.0	-25.2	39.1
Europe	-73	-18	-118	62	-9.9	-15.2	-23.9	48.0

Note: Absolute value and absolute change are in millions.

Source: Elaboration on UN DESA data (UN DESA, 2015).

European Union and non-European Union countries will be characterized by similar trends, but with some notable differences. The decline in total population will affect both European Union and non-European Union countries, but is projected to be much more pronounced in the latter: in fact, the population of the European Union countries is expected to decline by 7.9 per cent (-40 million), while the population of non-European Union countries by 14 per cent (-33 million). European Union countries are already older than non-European Union countries with the percentage of the elderly population at 19.2 per cent in the European Union versus a value of 14.1 per cent in non-European Union countries. While ageing will take place in both areas, the difference between European Union and non-European Union countries will increase; in 2050, the percentage of the elderly is projected to be 31.5 per cent in the European Union and 22.8 per cent in non-European Union countries.

Non-European Union countries have a larger share of people who are of working age, and the difference with the European Union will slightly increase from 4.3 per cent to 6 per cent, but the more important fact is that WAP will decline by 76 million (-23.2%) in the European Union and by 41 million (-25.2%) in non-European Union countries.

In European Union countries, the decline is heavily concentrated: Germany alone accounts for 22.3 per cent; the first four countries (Germany plus Italy, Spain and Poland) for 62.1 per cent; the first seven (the first four plus Romania, the United Kingdom and France) for almost three fourths. With respect to the percentage decline, four countries will register a decline above 30 per cent, 13 above 20 per cent, while in only four, the decline will be below 10 per cent (Table 19).

Table 19: WAP of European Union countries; absolute change and percentage change; 2015–2050

		WAP		WAP	
		Abs. change		% change	
1	Germany	-17,019	22.3	Portugal	-33.5
2	Italy	-12,310	16.1	Spain	-33.2
3	Spain	-10,150	13.3	Italy	-32.2
4	Poland	-7,965	10.4	Germany	-32.0
5	Romania	-3,774	4.9	Greece	-31.7
6	United Kingdom	-3,513	4.6	Bulgaria	-30.7
7	France	-2,521	3.3	Hungary	-29.9
8	Portugal	-2,262	3.0	Poland	-29.7
9	Greece	-2,226	2.9	Slovenia	-29.0
10	Hungary	-1,992	2.6	Romania	-28.8
11	Czech Republic	-1,949	2.5	Czech Republic	-27.6
12	Netherlands (the)	-1,834	2.4	Slovakia	-27.6
13	Austria	-1,462	1.9	Croatia	-27.4
14	Bulgaria	-1,443	1.9	Latvia	-26.6
15	Belgium	-1,071	1.4	Austria	-25.5
16	Slovakia	-1,063	1.4	Lithuania	-24.2
17	Croatia	-770	1.0	Cyprus	-23.2
18	Finland	-518	0.7	Malta	-22.4
19	Lithuania	-465	0.6	Estonia	-21.2
20	Sweden	-421	0.6	Luxembourg	-19.6
21	Denmark	-419	0.5	Netherlands (the)	-16.6
22	Slovenia	-403	0.5	Finland	-14.9
23	Latvia	-345	0.5	Belgium	-14.6
24	Estonia	-182	0.2	Denmark	-11.5
25	Cyprus	-141	0.2	United Kingdom	-8.4
26	Ireland	-93	0.1	Sweden	-6.9
27	Luxembourg	-77	0.1	France	-6.3
28	Malta	-62	0.1	Ireland	-3.0
Total		-76,449		Total	-23.2

Source: Elaboration on UN DESA data (UN DESA, 2015).

It is observed that at the present rate of participation, the decline in WAP would determine a reduction in the European Union's labour force of around 57 million, which corresponds to a yearly average of 1.6 million.

As seen in the period 2015–2050, all European countries are projected to register a decline in WAP. In spite of this, in the same period, the total net inflow of migrants to Europe is projected to be only around 30 million

(UN DESA, 2015); that is 26.3 per cent of the decline in WAP (Table 20). More specifically, the migration balance of European Union countries is projected to be 25.3 million and that of non-European Union countries to be 5.5 million, which represent 33.1 and 13.4 per cent of the decline in WAP respectively.

Table 20: Migration balance for Europe, European Union and non-European Union countries; sum of positive, negative and total national migration balances; 2015–2050

	Migration balance		
	EU28	Non-EU	Europe
Sum of positive balances	27.2	6.2	33.3
Sum of negative balances	-1.3	-0.8	-2.4
Total balance	26.0	5.4	30.9
Total balance as % of the decline in WAP	-33.1	-13.4	-26.3

Note: Values are in thousands.

Source: Elaboration on UN DESA data (UN DESA, 2015).

The analysis of the national values confirms the consequences of mechanical assumptions due to a supply side vision of migration. In the first place, six non-European Union countries (Table 21) and seven European Union countries (Table 22) are assumed to have a nil or negative migration balance, in spite of the simultaneous decline in WAP.

Table 21: Non-European Union countries' migration balance, absolute values and percentage composition; 2015–2050

Migration balance							
		Abs. value	%			Abs. value	%
1	Russian Federation	3,809	61.1	7	Montenegro	-17	2.1
2	Switzerland	1,450	23.3	8	Bosnia and Herzegovina	-18	2.3
3	Norway	865	13.9	9	The former Yugoslav Republic of Macedonia	-35	4.4
4	Belarus	70	1.1	10	Republic of Moldova	-100	12.5
5	Channel Islands	26	0.4	11	Ukraine	-280	35.0
6	Iceland	13	0.2	12	Albania	-350	43.8
Total		6,233	100.0	Total		-800	100.0

Note: Absolute values are in thousands.

Source: Elaboration on UN DESA data (UN DESA, 2015).

In the second place, but this was to be expected, the immigrants are concentrated in the largest countries: in the case of non-European Union countries, the Russian Federation and Switzerland (61.1 and 23.3% respectively); in the case of European Union countries in the United Kingdom (22%), Germany (19.3%), Italy (13.1%), Spain (10.4%) and France (10.3%).

Table 22: European Union countries' migration balance; absolute values and percentage composition; 2015–2050

Migration balance							
		Abs. value	%			Abs. value	%
1	Ireland	6,001	22.0	22	Lithuania	0.00	0.0
2	Sweden	5,250	19.3	23	Latvia	-2.51	0.2
3	Luxembourg	3,557	13.1	24	Croatia	-18.06	1.4
4	United Kingdom	2,821	10.4	25	Estonia	-34.99	2.7
5	Cyprus	2,800	10.3	26	Poland	-266.63	20.9
6	Denmark	1,281	4.7	27	Bulgaria	-350.00	27.5
7	France	960	3.5	28	Romania	-601.14	47.2
8	Belgium	770	2.8		Total	-1,273.34	100.0
9	Finland	700	2.6				
10	Austria	532	2.0				
11	Netherlands (the)	436	1.6				
12	Malta	420	1.5				
13	Germany	406	1.5				
14	Italy	350	1.3				
15	Spain	324	1.2				
16	Czech Republic	210	0.8				
17	Portugal	180	0.7				
18	Greece	150	0.6				
19	Hungary	42	0.2				
20	Slovenia	35	0.1				
21	Slovakia	20	0.1				
	Total	27,244	100.0				

Note: Absolute values are in thousands.

Source: Elaboration on UN DESA data (UN DESA, 2015).

The limits of this methodology emerge more clearly when the relationship with the decline of WAP is considered. Limited to European Union countries, the percentage ranges between 3 per cent and 349 per cent, without any specific reason but what happened in the recent past. More specifically, as previously seen, in six of them, the decline in WAP is accentuated by emigration; in the other, two situations can be distinguished. In six, immigrants more than compensate the decline in WAP. In Ireland and Sweden, the migration balance is three times the natural balance of WAP; in Luxembourg, the United Kingdom, Cyprus, Denmark and France, it is between 111 and 194 per cent. In the other 14, immigration will only partially cover the decline in WAP (Table 23).

Table 23: European Union countries' ratio between the migration balance and the change in WAP; 2015–2050

		MB/ Δ WAP			MB/ Δ WAP			MB/ Δ WAP
1	Ireland	-349.0	8	Belgium	-89.6	15	Spain	-27.8
2	Sweden	-304.6	9	Finland	-78.4	16	Czech Republic	-21.5
3	Luxembourg	-193.6	10	Austria	-47.9	17	Portugal	-19.3
4	United Kingdom	-170.8	11	Netherlands (the)	-42.0	18	Greece	-15.7
5	Cyprus	-127.7	12	Malta	-31.8	19	Hungary	-10.5
6	Denmark	-126.9	13	Germany	-30.8	20	Slovenia	-10.4
7	France	-111.1	14	Italy	-28.9	21	Slovakia	-3.3

Source: Elaboration on UN DESA data (UN DESA, 2015).

The previous observations strongly suggest that UN DESA forecasts for European Union and non-European Union countries must be taken with caution, since these are based on migration projections that are neither theoretically justified nor “consistent” with the natural demographic trends.

THE EUROPEAN UNION LABOUR MARKET: AN OVERVIEW

Between 1994 and 2015, the European Union labour market went through three different phases (Table 24). In the first phase (1994–2008), employment grew by more than 27 million. In the second, the international financial crisis determined an inversion of the expansionary phase and a decline in employment by 6.3 million. Starting in 2014, employment began to increase again, and 3.7 million additional jobs were created in a two-year span. In this long-run perspective, the overall balance remains therefore quite positive, the European Union labour market registered an overall average employment growth of almost 1 million per year.

Table 24: European Union's WAP, labour force, employment, unemployment and main labour market indicators; 1994–2015

	1994	2008	2013	2015	1994– 2008	2008– 2013	2013– 2015	1994– 2015
	Absolute value				Absolute change			
WAP	322.9	335.1	332.8	330.0	12.2	-2.3	-2.8	7.1
LF	221.9	241.4	244.6	245.1	19.4	3.2	0.5	23.2
Employment	197.3	224.6	218.3	222.0	27.3	-6.3	3.7	24.7
Unemployment	24.6	16.8	26.3	23.2	-7.9	9.6	-3.2	-1.5
RoA	68.7	72.0	73.5	74.3	3.3	1.5	0.8	5.6
RoE	61.1	67.0	65.6	67.3	5.9	-1.4	1.7	6.2
RoU	11.1	6.9	10.8	9.4	-4.2	3.8	-1.3	-1.7

Source: Elaboration on ILO data.

The growth in employment was paralleled by an almost analogous expansion in labour force so that the total level of unemployment – which registered quite ample cyclical fluctuations throughout the period – declined by 1.5 million with regards to 1994. However, it still exceeds the 2008 level by 6.4 million. Finally, in spite of massive immigration, WAP increased by only 7.1 million as a balance between a growth of 12.2 million registered in the expansionary phase and a decline of 5.1 million in the following seven years.

The combined effect of the dynamic of WAP, labour force and employment has determined a notable increase in the RoE that in 2015 reached a historical maximum of 67.3 per cent (6.2 percentage points higher than in 1994) and an increase of the rate of participation that by now is very close to the 75-per cent mark.

This overall positive global picture is however in deep contrast with the fragmentation that emerges as soon as the national labour markets are considered; moreover, it reflects the positive trend of few countries that did more than offset the negative trend of the others. In 2015, the RoE – the most relevant labour market indicator – ranged from a maximum of 78.8 per cent registered in Sweden and a minimum of 51.8 per cent registered in Greece (Table 25). This situation is mirrored by that of the rates of unemployment that ranged between a minimum of 4.7 per cent in Germany and a maximum of 25.3 per cent in Greece.

Table 25: European Union countries' rate of employment, unemployment and activity; 2015

RoE		RoU		RoA	
Sweden	78.8	Germany	4.7	Sweden	85.0
Netherlands (the)	76.7	Czech Republic	5.3	Netherlands (the)	81.6
Germany	76.1	Malta	5.5	Denmark	80.4
United Kingdom	75.6	United Kingdom	5.7	United Kingdom	80.0
Denmark	75.3	Austria	5.8	Germany	79.8
Estonia	75.0	Luxembourg	5.9	Estonia	79.7
Austria	72.7	Netherlands (the)	6.2	Latvia	78.2
Czech Republic	71.6	Estonia	6.3	Finland	77.5
Latvia	70.5	Denmark	6.5	Portugal	77.2
Finland	70.0	Hungary	7.0	Austria	77.1
Lithuania	68.7	Romania	7.4	Lithuania	75.9
Portugal	67.9	Poland	7.5	Cyprus	75.5
Luxembourg	66.9	Sweden	7.6	Czech Republic	75.5
Slovenia	66.0	Belgium	8.8	Spain	74.9
Romania	65.4	Slovenia	9.6	Slovenia	72.8
Ireland	65.2	Lithuania	9.7	Ireland	72.1
France	64.5	Ireland	9.8	France	72.1
Poland	64.4	Finland	9.9	Slovakia	71.1
Malta	63.8	Bulgaria	9.9	Luxembourg	71.0
Cyprus	63.8	Latvia	10.2	Bulgaria	70.6
Bulgaria	63.7	France	10.7	Romania	70.3
Hungary	63.4	Slovakia	11.4	Poland	69.6
Slovakia	63.1	Italy	12.4	Greece	69.0
Belgium	62.7	Portugal	12.8	Belgium	68.7
Spain	58.1	Cyprus	15.9	Hungary	68.2
Italy	57.4	Croatia	16.3	Malta	67.5
Croatia	56.4	Spain	22.6	Croatia	67.2
Greece	51.8	Greece	25.3	Italy	65.4

Source: Elaboration on ILO data.

Furthermore, the impact of the financial crisis has been quite different on the various countries, as well as the capacity to recover. Table 26 shows the absolute and percentage change in the employment level of each European Union country in the recession (2008–2013) and expansion (2013–2015) periods.

Between 2008 and 2013, while the European Union employment level declined by 6.3 million, in nine countries, employment showed a positive change with a total increase of almost 3 million, with record percentage growth in Luxembourg (19.7%) and Malta (10.3%). Moreover, 63.1 per cent of the growth in employment took place in Germany, and 18.3 per cent in the United Kingdom. The other 19 countries registered a decline in employment of 9.3 million. In one country (Greece), the decline was in excess of 20 per cent; in five (Latvia, Croatia, Bulgaria, Portugal and Spain), 10 per cent; 62.3 per cent of the jobs destroyed were in Spain (3.3 million), Italy (1.4 million) and Greece (1.1 million).

In the following two years, employment grew in excess of 3.9 million. The phenomenon affected all European Union countries except for France, Finland and Austria. However, the increase in employment was concentrated in the United Kingdom, Poland, Spain and Germany and accounted for 69.3 per cent of the total increase (more specifically: 27.5% for the United Kingdom, 15.7% for Poland, 14.2% for Spain and 11.9% for Germany). In summary, in 2015, only the nine countries whose employment grew during the financial crisis, and the Czech Republic, registered an employment level higher than in 2008; the other 18 countries were still lagging behind (Table 26).

Table 26: European Union countries' employment, absolute change and percentage change; 2008–2013, 2013–2015 and 2008–2015

		Total employment					
		2008–2013		2013–2015		2008–2015	
		Abs. change	% change	Abs. change	% change	Abs. change	% change
1	Germany	1,889	5.0	471	1.2	2,360	6.2
2	United Kingdom	548	1.8	1,084	3.6	1,632	5.5
3	Poland	150	0.9	618	3.7	768	4.6
4	Sweden	139	3.0	89	1.9	228	4.9
5	Austria	91	2.2	-33	-0.8	59	1.4
6	Belgium	71	1.6	40	0.9	111	2.5
7	Hungary	48	1.2	246	6.2	294	7.5
8	Luxembourg	41	19.7	15	6.2	56	27.1
9	Malta	16	10.3	6	3.3	22	13.9
10	Czech Republic	-17	-0.3	82	1.6	64	1.3
11	Cyprus	-34	-6.4	21	4.1	-14	-2.6
12	Estonia	-35	-5.2	11	1.8	-24	-3.6
13	Finland	-82	-3.2	-45	-1.8	-127	-5.0
14	Slovenia	-82	-8.2	5	0.5	-77	-7.8
15	Slovakia	-93	-3.8	82	3.5	-11	-0.5
16	Lithuania	-135	-9.4	18	1.4	-117	-8.1
17	Latvia	-143	-13.6	3	0.4	-140	-13.3
18	Denmark	-165	-5.8	41	1.5	-124	-4.3
19	Ireland	-179	-8.5	56	2.9	-123	-5.8
20	France	-236	-0.9	-196	-0.8	-432	-1.6
21	Croatia	-253	-14.2	57	3.7	-196	-11.0
22	Netherlands (the)	-311	-3.6	46	0.5	-265	-3.0
23	Bulgaria	-454	-13.4	71	2.4	-383	-11.3
24	Romania	-596	-6.5	52	0.6	-544	-6.0
25	Portugal	-698	-13.6	140	3.2	-557	-10.9
26	Greece	-1,075	-23.1	46	1.3	-1,029	-22.1
27	Italy	-1,442	-6.2	90	0.4	-1,352	-5.8
28	Spain	-3,277	-16.0	559	3.2	-2,718	-13.3
Sum of positive values		2,994		3,948		5,594	
Sum of negative values		-9,308		-274		-8,234	
Total balance		-6,314		3,674		-2,640	

Note: Absolute change are in the thousands.

Source: Elaboration on ILO data.

It is important to parallel an analysis of employment with one of unemployment (Table 27). During the period of crisis, at the European Union level, the growth in unemployment largely exceeded the decline in employment, while in the following recovery period, the growth in employment exceeded the decline in unemployment. As a result, in 2015, the unemployment level was still 6.4 million higher than in 2008, while employment level was only 2.4 million lower.

Table 27: Unemployment, absolute change and percentage change; 2008–2013, 2013–2015 and 2008–2015

	Unemployment					
	2008–2013		2013–2015		2008–2015	
	Abs. change	% change	Abs. change	% change	Abs. change	% change
Spain	3,470.1	132.9	-936.9	-15.4	2,533.2	97.0
Italy	1,335.1	79.8	17.4	0.6	1,352.5	80.9
Greece	946.5	236.8	-141.3	-10.5	805.2	201.5
France	863.7	43.1	193.0	6.7	1,056.7	52.8
United Kingdom	694.9	39.2	-642.7	-26.0	52.2	2.9
Poland	651.9	51.6	-540.2	-28.2	111.7	8.8
Portugal	435.3	103.1	-227.3	-26.5	208.0	49.3
Netherlands (the)	353.2	140.4	-57.1	-9.4	296.1	117.7
Bulgaria	233.1	116.1	-109.3	-25.2	123.8	61.7
Croatia	153.9	93.1	-15.3	-4.8	138.6	83.8
Ireland	144.5	99.9	-79.1	-27.4	65.4	45.2
Czech Republic	144.4	62.9	-98.5	-26.3	45.9	20.0
Slovakia	132.4	51.7	-77.8	-20.0	54.6	21.3
Hungary	119.5	35.9	-136.1	-30.1	-16.6	-5.0
Sweden	113.8	37.4	-34.4	-8.2	79.4	26.1
Denmark	102.2	101.4	-18.5	-9.1	83.7	83.0
Romania	89.9	16.0	-15.2	-2.3	74.7	13.3
Lithuania	85.5	96.8	-35.9	-20.7	49.6	56.2
Belgium	80.1	23.8	22.3	5.3	102.4	30.4
Cyprus	74.7	362.6	1.7	1.8	76.4	370.9
Austria	59.5	33.9	15.6	6.6	75.1	42.8
Slovenia	56.9	124.2	-8.1	-7.9	48.8	106.6
Finland	46.4	26.5	37.8	17.1	84.2	48.1
Latvia	34.9	39.7	-23.5	-19.1	11.4	13.0
Estonia	20.6	53.2	-18.8	-31.7	1.8	4.7
Luxembourg	4.2	37.8	1.1	7.2	5.3	47.7

	2008–2013		2013–2015		2008–2015	
	Abs. change	% change	Abs. change	% change	Abs. change	% change
Malta	1.7	17.0	-1.6	-13.7	0.1	1.0
Germany	-895.6	-29.0	-239.7	-10.9	-1,135.3	-36.8
Unemployment	9,553.3	57.0	-3,168.4	-12.0	6,384.9	38.1
Sum of positive values	10,448.9		289		7,537	
Sum of negative values	-896		-3,457		-1,152	
Total balance	9,553		-3,168		6,385	

Source: Elaboration on ILO data.

Between 2008 and 2013, unemployment grew in all European Union countries, except for Germany, where it declined by 0.9 million. Two countries witnessed the highest growth in unemployment, firstly Spain, where unemployment more than doubled, growing by almost 3.5 million, and secondly Italy, where it grew by 1.3 million (79.8%). Other countries, however, recorded even higher percentage increases. This specific ranking is led by Cyprus (362.6), Greece (236.8), the Netherlands (140.4), Slovenia (124.2), Bulgaria (116.1), Portugal (103.1) and Denmark (101.4). In all these countries, unemployment more than doubled.

When we take into account the following two years, the situation is much more positive. Between 2013 and 2015, unemployment declined in 21 countries: in two, it did so by more than 30 per cent (Estonia and Hungary), in eight (Poland, Ireland, Portugal, Czech Republic, the United Kingdom, Bulgaria, Lithuania and Slovakia) between 20 and 30 per cent, and in five (Latvia, Spain, Malta, Germany and Greece) between 10 and 20 per cent. However, significant increases (above 5%) were still recorded in Finland, Luxembourg, France, Austria and Belgium.

Table 28: Unemployment, absolute change, rate of unemployment, percentage composition and cumulative percentage; 2015

		Unemployment			
		Absolute value	RoU	% composition	Cumulative percentage
1	Spain	5,144	22.6	22.2	22.2
2	France	3,059	10.7	13.2	35.4
3	Italy	3,025	12.4	13.1	48.5
4	Germany	1,954	4.7	8.4	56.9
5	United Kingdom	1,826	5.7	7.9	64.8
6	Poland	1,375	7.5	5.9	70.7
7	Greece	1,205	25.3	5.2	76.0
8	Romania	636	7.4	2.7	78.7
9	Portugal	630	12.8	2.7	81.4
10	Netherlands (the)	548	6.2	2.4	83.8
11	Belgium	440	8.8	1.9	85.7
12	Sweden	384	7.6	1.7	87.3
13	Bulgaria	325	9.9	1.4	88.7
14	Hungary	316	7.0	1.4	90.1
15	Slovakia	311	11.4	1.3	91.5
16	Croatia	304	16.3	1.3	92.8
17	Czech Republic	275	5.3	1.2	94.0
18	Finland	259	9.9	1.1	95.1
19	Austria	251	5.8	1.1	96.2
20	Ireland	210	9.8	0.9	97.1
21	Denmark	185	6.5	0.8	97.9
22	Lithuania	138	9.7	0.6	98.5
23	Latvia	99	10.2	0.4	98.9
24	Cyprus	97	15.9	0.4	99.3
25	Slovenia	95	9.6	0.4	99.7
26	Estonia	41	6.3	0.2	99.9
27	Luxembourg	16	5.9	0.1	100.0
28	Malta	10	5.5	0.0	100.0
European Union		23,156	9.7	100.0	

Source: Elaboration on ILO data.

Finally, unemployment reached a historical peak at 26.3 million in 2013 before declining to 23.2 in 2015. However, it has to be emphasized that almost half of the unemployed were concentrated in three countries (Spain, Italy and France) and more than three quarters in seven countries (the first three plus Germany, the United Kingdom, Poland and Greece). These countries do however belong to three groups: in the first we have Greece, Spain and Italy, which are characterized by a very high rate of unemployment (RoU); in the second group, there are two large countries (Germany and the United Kingdom) with a low unemployment rate; in the third group, there are two large countries (France and Poland) with rates of unemployment that are quite high, but below the European Union average (Table 28).

Two major conclusions emerge from the previous analysis of the European Union labour market:

- (a) The majority of European countries have exited the crisis and are on the path towards employment recovery; however, the situation is still critical in a few of the countries; and
- (b) It is evident that there is no such a thing as a unified European economy yet and even less a unified European labour market.

At the policy level, this situation clearly suggests that imposing the German therapy to improve the labour market situation of all European Union countries is, to say the least, quite inappropriate.

THE LABOUR MARKET AND DEMOGRAPHIC SCENARIOS FOR THE EUROPEAN UNION AND EGYPT: 2015–2030

During the twenty-first century, Europe is going to be affected by a dramatic demographic revolution.⁴³ After centuries of extremely high growth, the population of Europe is projected to decline. More specifically, according to UN DESA and many other statistical institutions, the so-called demographic transition will bring a reduction in total population, an even more pronounced decline in WAP and a progressively ageing population.

As was strongly emphasized, this projection hinges on the assumption that migrations are independent from both the natural demographic trend and the economic trend. The author will propose a different image of the demographic future of the European Union, one that is based on the migration model that was previously proposed, and the new procedure for jointly building demographic and labour scenarios.

The timescale chosen for the projected scenarios is one of 15 years, from 2015 to 2030. This is explained by the fact that the young people who will enter the labour force during this time have already been born.

Some of the countries on the southern shore of the Mediterranean will be confronted by the opposite demographic trend. They will experience an increase in labour supply that will exceed the employment growth attainable by these economies. Therefore, Egypt – the giant sending country on the southern shore of the Mediterranean – will be included in the projected scenarios, which will clearly indicate the importance of arriving at a solution based on a cooperative approach between the European Union and the countries of the southern shore of the Mediterranean.

The labour market and demographic scenarios for the European Union

The assumptions

As is required by the model, its assumptions will concern the rate of labour market participation and the rate of employment growth. For the former, the following two standard cases will be considered:

.....
43 The term *revolution* seems more appropriate than that of *transition*, since the latter implies the passage from a situation of equilibrium to another situation of equilibrium and for the moment, there is no indication that this will be the end of the present demographic changes.

- (a) The participation rate remains constant at the 2015 level (Scenario A); and
- (b) The participation rate progressively increases to reach 77.5 per cent in 2030 (Scenario B).

For the latter, the three reasonable alternatives will be assumed:

- (a) A constant employment level (1);
- (b) An average yearly rate of growth of 0.4 per cent (2); and
- (c) An average yearly rate of growth of 0.8 per cent (3).

Finally we will assume:

- A reactivity of the migration balance to the labour shortage of 1.1 (Bruni, 2009).

Finally, the assumption is that 50 per cent of the migrants will be women of a fertile age and with a fertility rate at replacement level (2.1 children per woman).

These assumptions will produce six scenarios of labour shortage that will, in their turn, produce six scenarios of the migration balance for the period 2015–2030. This will be the starting point from which to build fully-fledged demographic scenarios by following the proposed new procedure.

The European Union scenarios for the period 2015–2030

The labour shortage is defined as the difference between the change in the size of the labour force (labour supply) and the change in the level of employment (labour demand). A negative value indicates that the increase in labour supply is insufficient to satisfy the increase in labour demand. A positive value measures the potential increase in unemployment.

Between 2015 and 2030, in the European Union, the level of WAP is projected to decline by almost 30 million, that is, by 8.9 per cent (Table 29). Therefore, in Scenario A (constant participation rate), the drop in WAP is paralleled by an analogous drop in labour force (-21.8 million). In Scenario B (which assumes an increasing participation rate of the surviving members of WAP), the drop is smaller and equal only to 12.2 million, that is, to -5 per cent. With respect to employment, in Scenario 1 the number of jobs remains constant at 222 million, while it will grow by 13.3 million in Scenario 2, and by 26.6 million in Scenario 3.

Table 29: European Union's WAP, labour force and employment in 2015 and in alternative hypothesis of labour force participation and employment growth in 2030

	WAP	Labour force		Employment		
		A	B	1	2	3
2015	330.0	245.1	245.1	222.0	222.0	222.0
2030	300.6	223.3	233.0	222.0	235.3	248.6
2015–2030	-29.4	-21.8	-12.2	0.0	13.3	26.6

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

Labour shortage and migration balance

When the assumptions regarding labour supply and labour demand are combined, there are six scenarios obtained as recorded in Table 30, which demonstrate the labour shortage and the migration balance in each of them.

Table 30: European Union's labour shortage and migration balance in six scenarios of labour force participation and employment growth in the period 2015–2030

	Scenarios					
	A1	A2	A3	B1	B2	B3
Labour shortage	-21.8	-35.1	-48.5	-12.2	-25.5	-38.8
Migration balance	24.0	38.6	53.3	13.4	28.0	42.7

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The labour shortage ranges between a lowest figure of 12.2 million in Scenario B1 (in which the rate of labour force participation increases, while employment remains constant), and a highest figure of 48.5 million (in Scenario A3, in which the participation rate is constant and employment expands at an average rate of almost 1.8 million jobs per year).

The corresponding total migration balances are therefore equal to 13.4 and 53.3 million. Given the model's assumptions, the migration balance is negatively related to the rate of participation and positively related to employment growth. In yearly value, the migration balance ranges between a lowest value of 890,000,

in line with recent values, and a highest yearly value of 3.55 million, for a situation characterized by an employment growth slightly lower than that registered between 2002 and 2008. In conclusion, the scenarios show that the European Union will need a consistent number of migrants even if the employment level remains constant and participation increases (Scenario B1).

The average value of the two intermediate scenarios (A2 and B2) – which can be taken as the most “probable” – places the yearly migration balance at 2.2 million, largely in excess of previous estimates.

The European Union labour market in 2030

The impact of the migration model and scenario methodology on the labour market situation (Table 31) and on the population level and structure (Table 32) will now be analysed.

WAP is projected to decline in three scenarios (A1, B1 and B2), increase in a minor way in Scenarios A2 and B3, and increase substantially in Scenario A3. For the same level of employment growth, WAP registers higher values in the A scenarios than in the B scenarios. In conclusion, the level of WAP is positively related to employment growth and negatively related to the rate of participation. It is to be emphasized that, in spite of the inflow of migrants, the RoU declines in all scenarios, with the decline being positively related to the growth in employment and inversely related to participation.

Table 31: European Union’s main labour market variables and main labour market indicators in 2015 and in six scenarios of labour force participation and employment growth in 2030

	WAP	Labour force	Employment	Unemployment	RoA	RoE	RoU
2015							
	330.0	245.1	222.0	23.2	74.3	67.3	9.4
2030							
A1	324	241	222	19	74.3	68.5	7.8
A2	339	252	235	16	74.3	69.4	6.5
A3	354	263	249	14	74.3	70.3	5.3
B1	314	243	222	21	77.5	70.8	8.7
B2	328	254	235	19	77.5	71.7	7.5
B3	343	266	249	17	77.5	72.5	6.5

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

Demographic scenarios

At the demographic level, once migration is taken into account, it is seen that despite the decline in fertility and contrary to what has been suggested by the standard projection procedure, the total population is going to increase. This increase is positively related to employment growth and negatively related to labour market participation. Migration increases fertility and reduces the ageing process. Therefore, it will determine an increase in the number of the young, reduce the decline of the share of WAP, and positively impact on the share of the elderly (Table 32).

Table 32: European Union's population by main age group in 2015 and in six scenarios of labour force participation and employment growth in 2030

	0–14	15–64	65+	Total	0–14	15–65	65+	Total
2015								
	78	330	99	507	15.4	65.1	19.5	100.0
2030								
No migration	72	300	126	498	14.5	60.3	25.3	100.0
A1	78	324	126	528	14.7	61.4	23.9	100.0
A2	81	339	126	546	14.8	62.1	23.1	100.0
A3	84	354	126	564	15.0	62.7	22.4	100.0
B1	75	314	126	515	14.6	60.9	24.5	100.0
B2	79	328	126	533	14.8	61.6	23.7	100.0
B3	87	343	126	556	15.7	61.6	22.7	100.0

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

Migration and the socioeconomic situation

In order to better appreciate the positive impact of employment growth (and of the migration flows it will inevitably produce) on the demographic structure and on the socioeconomic situation of the European Union, the usual demographic dependency ratios and the more correct economic dependency ratios are estimated.⁴⁴

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44 For a more in-depth discussion of these indicators, see Bruni (2008 and 2009).

Demographic dependency ratios and economic dependency ratios

The indicators normally used to measure the structural burden generated by ageing populations are strictly demographic in nature: the potential support ratio is obtained by dividing the WAP by the number of elderly; the demographic dependency ratio is reciprocal to the potential support ratio.

The employed produce the income that sustains themselves and the remaining population, while the WAP includes a percentage of people (such as students, retired and housekeepers) that do not support, but are supported by it. It is therefore evident that purely demographic indicators can be highly misleading.

The choice of WAP as the denominator or the numerator of the demographic indicator of structural burden reflects a historical phase that was characterized by an almost total coincidence between active population and WAP, and in which information on employment levels was absent or was collected only every 10 years by censuses. Therefore, while the use of demographic indicators can still be justified in countries that do not have reliable employment data, it is totally inappropriate for countries, by now the majority, in which:

- Only one part of WAP, sometimes less than 60 per cent, has a formal job;
- Estimates of the level, structure and tendencies of employment are available almost in real time;
- The duration of the training phase of life has greatly increased, and the average age of entry in the working phase of life is above 20; and
- Differences in the education system, economic and social development, productive specialization and technologies create different percentages of students, housewives and the unemployed.

An economic indicator of structural burden that does not have the shortcomings indicated above, and which can therefore capture the socioeconomic characteristics of modern societies, can be easily obtained by substituting WAP with employment.⁴⁵ Such an indicator allows for the following:

.....
45 A similar suggestion has been advanced by Tapinos (2001), who, however, did not emphasize the change in perspective and vast implications brought about by employing this indicator. A recent paper of the CEFMR has proposed building indicators of structural burden using the labour force as a measuring device; this would however keep the unemployed between those who maintain (Bijak et al., 2007).

- Differentiate the structural burden by a larger number of typologies of dependants: students, non-labour force in working age, unemployed and the retired;
- Verify how much the changes in the structural burden are due, on the one hand, to demographic tendencies, and on the other, to the capacity (or lack of capacity) of the economic system to generate additional employment; and
- Estimate the growth of employment, and therefore of production, needed to obtain a given level of structural burden.

The demographic indicators of dependency

According to the demographic indicators, in the absence of migration, the total dependency ratio (TDR) would increase from 536 to 661, which is due almost exclusively to the increase in the old age dependency ratio (ODR) from 299 to 420 (Table 33).

Table 33: European Union's demographic dependency ratios* in 2015 and in six scenarios of labour force participation and employment growth in 2030

	YDR	ODR	TDR
2015			
2015	237	299	536
2030			
No migration	241	420	661
A1	240	389	629
A2	239	372	611
A3	239	357	595
B1	240	402	642
B2	240	384	624
B3	255	368	623

Note:

- YDR: Youth dependency ratio = $\text{Pop (0–14)}/\text{WAP} \times 1,000$.
- ODR: Old dependency ratio = $\text{Pop 65+}/\text{WAP} \times 1,000$.
- TDR: Total dependency ratio = $\text{YDR} + \text{ODR} = [\text{Pop (0–14)} + \text{Pop 65+}]/\text{WAP} \times 1,000$.

Source: Elaboration on UN DESA, 2015 and ILO data.

In all the scenarios, migration reduces the increase in the ODR and therefore in the TDR. The reduction is positively related to employment growth, and inversely related to participation.

The economic indicators of dependency

The economic indicators provide a better evaluation of the socioeconomic impact of economic growth and therefore of migration (Table 34).

In 2015, according to the total economic dependency ratio (TEDR), 1,000 workers supported, alongside themselves, 1,283 dependants. Although the most numerous categories were represented by the elderly (34.6%), the sum of the unemployed and the inactive in working age was higher (37.9%), with the young representing 27.5 per cent of the total.

In 2030, the number of dependants is projected to notably increase only in Scenario A1 (in which employment is kept constant), and slightly increase in Scenarios A2 and B1. In all the other scenarios, the increase in the economic old dependency ratios (OEDR) is more than offset by the decline in the other components, but especially with respect to the inactive and the unemployed.

Table 34: European Union's economic dependency ratios* in 2015 and in six scenarios of labour force participation and employment growth in 2030

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
2015									
	1,283	353	104	382	444	27.5	8.1	29.8	34.6
2030									
A1	1,379	350	85	376	568	25.4	6.2	27.2	41.2
A2	1,321	344	70	370	536	26.1	5.3	28.0	40.6
A3	1,269	339	56	366	507	26.7	4.4	28.8	40.0
B1	1,321	340	95	318	568	25.7	7.2	24.1	43.0
B2	1,265	334	81	314	536	26.4	6.4	24.8	42.4
B3	1,238	351	69	310	507	28.4	5.6	25.1	41.0

Note:

- YEDR : Youth economic dependency ratio = Pop (0–14)/Employed *1,000.
- UEDR : Unemployed economic dependency ratio = Unemployed/ Employed *1,000.
- IEDR : Inactive economic dependency ratio = Inactive (15–64)/Employed *1,000.
- OEDR : Old economic dependency ratio = Inactive 65+/ Employed *1,000.
- TEDR : Total economic dependency ratio = YEDR + UEDR + IEDR + OEDR = Not employed/employed * 1,000.

Source: Elaboration on UN DESA, 2015 and ILO data.

In summary, the scenarios show that employment expansion, even if sustained by the necessary number of migrants, will reduce the average number of dependants. The author posits that one of the main keys to facing the social impact of an ageing population is represented by employment growth, in spite of the fact that this will require a substantial amount of migration. However, the precondition is that the social burden should be assessed by the correct measuring rod – employment.

Some case studies

Between 2015 and 2030, in the absence of migration, WAP is projected to decline in all European Union countries with the exception of Ireland. However, given the different sizes of the countries and their different demographic trends, the decline in WAP will be concentrated in a few countries, with the first three representing 53.6 per cent of the overall decline and the first six 70.6 per cent (Table 35).

Germany would experience the greatest decline in the European Union; with a decline of its WAP by 8.5 million (-16.0%), the country would account for 28.3 per cent of WAP decrease in the European Union. In second place, there is Italy, whose WAP is projected to decline by 4.8 million (-12.5%), 15.9 per cent of the European Union's total. Also in Poland, WAP is projected to decline by more than 10 per cent (-3 million). In four other countries – Spain, the United Kingdom, France and Romania – the decline in WAP will be in excess of 1 million.

If the analysis suggests that these countries, or at least the ones with stronger economies, will play a special role in attracting foreign workers to the European Union, there are other countries where the labour shortage could be at least as relevant in percentage terms. In fact, besides Germany, Italy and Poland, there are nine other countries where the decline in WAP will be above 10 per cent.

Table 35: European Union countries' WAP, absolute values in 2015 and 2030, absolute change in thousands, percentage change and percentage composition

	Working age population					
	2015	Absolute change	% change	2030	% of total decline	Cumulative %
Germany	53,152	-8,526	-16.0	44,626	28.1	28.1
Italy	38,199	-4,784	-12.5	33,415	15.8	43.9
Poland	26,843	-3,039	-11.3	23,804	10.0	53.9
Spain	30,592	-2,813	-9.2	27,779	9.3	63.2
United Kingdom	41,719	-1,141	-2.7	40,578	3.8	67.0
France	40,473	-1,418	-3.5	39,055	4.7	71.6
Romania	13,105	-1,325	-10.1	11,780	4.4	76.0
Netherlands (the)	11,043	-887	-8.0	10,156	2.9	78.9
Hungary	6,664	-751	-11.3	5,913	2.5	81.4
Portugal	6,743	-761	-11.3	5,982	2.5	83.9
Greece	7,011	-602	-8.6	6,409	2.0	85.9
Austria	5,728	-608	-10.6	5,120	2.0	87.9
Bulgaria	4,707	-630	-13.4	4,077	2.1	90.0
Czech Republic	7,052	-624	-8.8	6,428	2.1	92.1
Belgium	7,325	-459	-6.3	6,866	1.5	93.6
Slovakia	3,854	-397	-10.3	3,457	1.3	94.9
Croatia	2,680	-215	-8.0	2,465	0.7	95.6
Finland	3,477	-270	-7.8	3,207	0.9	96.5
Lithuania	1,918	-284	-14.8	1,634	0.9	97.4
Sweden	6,139	-119	-1.9	6,020	0.4	97.8
Denmark	3,637	-176	-4.8	3,461	0.6	98.4
Slovenia	1,390	-170	-12.2	1,220	0.6	98.9
Latvia	1,295	-174	-13.4	1,121	0.6	99.5
Estonia	855	-81	-9.5	774	0.3	99.8
Malta	278	-26	-9.4	252	0.1	99.9
Luxembourg	395	-20	-5.1	375	0.1	99.9
Cyprus	823	-19	-2.3	804	0.1	100.0
Total	327,097	-30,319	-9.3	296,778		
Ireland	3,051	165	5.4	3,216		
EU28	330,148	-29,584	-9.0	299,994		

Source: Elaboration on UN DESA, 2015.

Annex 1 presents detailed scenarios for the six countries with the highest absolute decline in WAP. Here, the key findings of the analysis will be recalled.

As shown by Table 36, and was implicit in the data reported in Table 35, Germany is characterized by the largest SSL, ranging between a minimum of 4.5 million (Scenario B1) and a maximum of 11.7 million (Scenario A3), which would imply yearly migration balances of between 329,000 and 855,000. It is evident that even under the most “favourable” conditions, migration will not be just an option but a necessity. Using the same methodology adopted for the European Union, the “most probable” level of the migration balance is estimated in 592,000 people per year.

Table 36: European Union and six European Union countries’ labour shortage and migration balance in six scenarios of labour force participation and employment growth; 2015–2030

	A1	A2	A3	B1	B2	B3	(Max+Min)/2
Total labour shortage							
EU28	-21.8	-35.1	-48.5	-12.2	-25.5	-38.8	-30.3
Germany	-6.8	-9.2	-11.7	-4.5	-6.9	-9.3	-8.1
Italy	-3.1	-4.4	-5.8	-1.6	-2.9	-4.2	-3.7
Poland	-2.1	-3.2	-4.2	-0.8	-1.9	-2.9	-2.5
Spain	-2.1	-3.2	-4.2	-0.7	-1.8	-2.8	-2.5
United Kingdom	-0.9	-2.8	-4.7	1.1	-0.8	-2.6	-1.8
France	-0.8	-2.4	-3.9	1.1	-0.5	-2.0	-1.4
Total	-15.9	-25.2	-34.5	-5.3	-14.6	-23.9	-19.9
	A1	A2	A3	B1	B2	B3	(Max+Min)/2
Migration balance (yearly average value in thousands)							
EU28	1,600	2,577	3,553	891	1,868	2,844	2,222
Germany	499	677	855	329	507	685	592
Italy	229	326	422	115	212	308	269
Poland	155	231	307	60	136	212	184
Spain	155	233	311	51	129	208	181
United Kingdom	67	206	344	-83	55	194	131
France	59	173	287	-81	34	148	103
Total	1,164	1,845	2,527	391	1,073	1,755	1,459

Note: Values are in millions.

Source: Elaboration on UND ESA, 2015 and ILO data.

The most probable levels of the migration balance for the other countries are included between the 269,000 of Italy and the 103,000 of France, with Poland at 184,000, Spain at 181,000 and the United Kingdom at 131,000.

Moreover, contrary to common belief, migration will contribute, in all the six countries, to improving the labour market situation, and reducing both the ageing process, as well as the socioeconomic burden (Table 37).

Table 37: European Union and six European Union countries' economic and demographic dependency ratios; 2015 and 2030

	Economic indicators			Demographic indicators		
	2015	2030 (B2)	Difference	2015	2030 (B2)	Difference
EU28	1,283	1,265	-18	536	624	88
Germany	994	1,005	11	518	647	129
United Kingdom	1,053	1,034	-18	551	642	91
Poland	1,232	1,173	-60	438	541	103
France	1,484	1,444	-40	603	698	95
Spain	1,594	1,514	-81	508	594	86
Italy	1,726	1,630	-95	565	672	106
Max-Min	731	625		164	156	

Source: Elaboration on UN DESA, 2015 and ILO data.

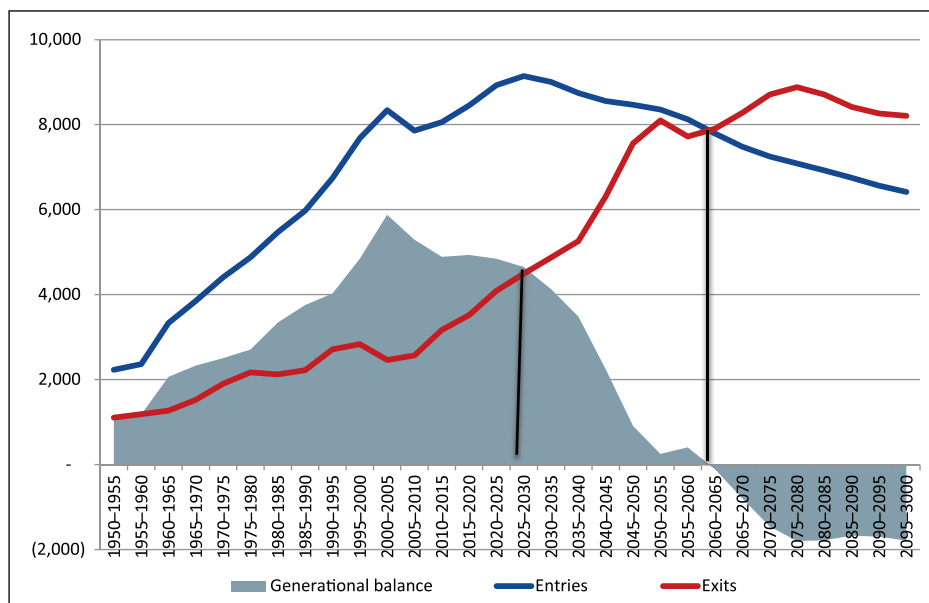
Labour market and demographic scenarios for Egypt

Demographic transition and the labour market in Egypt

Egypt has not yet completed the first phase of the demographic transition during which WAP grows at an increasing rate.

At present, WAP is growing at an average yearly rate of approximately 900,000 persons per year, which represents the balance between 1.5 million generational entries and 600,000 generational exits. In the next 15 years, in the absence of migrations, WAP is expected to grow from 54 million in 2015 to 68 million, the average absolute change being close to 1,000,000 per year. Generational entries will progressively increase to 1,860 million, and generational exits to 910,000 (Graph 14).

Graph 14: Egypt's WAP (15–64); generational entries, generational exits and generational balance; 1950–3000



Note: Absolute yearly values are in thousands.

Source: Elaboration on UN DESA, 2013a.

The demographic trend experienced by Egypt in recent years has exceeded its economy's capacity to create jobs (Tables 38 and 39). In the years 2009–2013, WAP increased by a yearly average of around 900,000, with women representing 53.1 per cent of the total. While all men that entered WAP also entered into the labour force, only just above one quarter of women entered the formal labour market, so the labour supply grew by 550,000 per year, 61.5 per cent of the growth in WAP, a value above the rate of participation in terms of stock, equal to 51.4.

Table 38: Egypt's WAP, labour force, employment and unemployment; main labour market indicators; 2009 and 2013

	2009			2013		
	Men	Women	Total	Men	Women	Total
WAP	25,040	24,216	49,256	26,725	26,120	52,845
Labour force	19,042	5,900	24,942	20,745	6,403	27,148
Employment	18,029	4,535	22,564	18,661	4,838	23,499
Unemployment	1,013	1,365	2,378	2,084	1,565	3,649
RoA	76.0	24.4	50.6	77.6	24.5	51.4
RoE	72.0	18.7	45.8	69.8	18.5	44.5
RoU	5.3	23.1	9.5	10.0	24.4	13.4

Note: Values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

With only 234,000 additional jobs created on average every year, the growth in employment fell largely short of the growth in the labour force, and unemployment grew at an average yearly rate of 318,000 per year, particularly affecting young males. As a result of these trends, the RoE declined from 45.8 to 44.5 per cent.

Table 39: Egypt's main labour market variables, average yearly absolute change and marginal labour market indicators; 2009–2013

	Men	Women	Total
WAP	421	476	897
Labour force	426	126	552
Employment	158	76	234
Unemployment	268	50	318
RoA	101.1	26.4	61.5
RoE	37.5	15.9	26.1
RoU	62.9	39.7	57.6

Note: Average yearly absolute change in thousands.

Source: Elaboration on UN DESA, 2013a and ILO data.

Future employment and migration needs of Egypt

As previously shown, over the next 15 years, the Egyptian WAP will grow at an average rate of almost 1 million per year. At the current rather-low marginal rate of participation (which allows for entry into the formal labour market of all men but only around one quarter of women), this would imply a growth in labour supply of around 600,000 people per year. To match this increase, the total number of jobs should increase at an average yearly rate of around 2.5 per cent.

Therefore, although the Government of Egypt will certainly strive to formulate policies aimed at maximizing economic development and employment growth, Egypt must be ready to face a situation in which, as in recent years, employment will grow by less than 300,000 people per year. It is evident that in this scenario, the only way to avoid a massive decline in the RoE and an explosion in unemployment is to properly plan and manage consistent emigration flows.

Migration, labour market and demographic scenarios

As before with European Union countries, the report will now propose a number of scenarios that will draw attention to the future labour market and demographic situation of Egypt, based on alternative hypotheses of labour market participation and employment growth.

There are, however, basic differences with respect to the scenarios that have been previously proposed for the European Union. In this case, what this report proposes are estimates of the SEL as a function of the usual variables – the rate of participation and the RoE growth. The report will then analyse the impact on the demographic trends and the labour market situation of different levels of emigration that would be possible and desirable with the SEL.

The assumptions

In parallel with what was done in the European Union scenarios, two possibilities in relation to the rate of participation in Egypt will be considered:

- (a) A rate of participation constant at the present value of 51.4 per cent; and
- (b) A rate of participation that will reach a value of 60 per cent in 2030 as a result of a higher presence of women in the formal labour market.

In the case of employment, three alternatives will be considered:

- (a) Zero growth;
- (b) A rate of growth equal to half the percentage growth of WAP; and
- (c) A rate of growth equal to the growth of WAP.

In the case of potential departure countries such as Egypt, assumptions will have to be made regarding emigration since the interest is in analysing the impact of emigration on the labour market and demographic variables. These hypotheses will enable the country in question to consider and appreciate the economic and social role migration can play. Three alternatives will be considered:

- (a) Zero migration balance (Scenario M1); this extreme case reflects what will happen if the Egyptian labour market alone has to address the population explosion that is going to affect the country;
- (b) A migration balance equal to half the additional excess of labour supply (Scenario M2); and
- (c) A migration balance equal to the additional excess of labour supply (Scenario M3).

The scenarios

Table 40 reflects the previous hypotheses on participation and employment. If the rate of participation will remain constant, the labour force will grow in 15 years from 27.6 million to 35.1 million, while in Scenario B, it will reach 41 million. For what relates to employment, the table represents three situations. In the first, employment is constant; in the second, it increases, in line with recent trends, by 290,000 jobs per year; and in the third, it increases by about 425,000.

Table 40: Egypt's WAP, labour force and employment in six scenarios of labour force participation and employment growth; 2013–2028

	WAP	Labour force		Employment		
		A	B	1	2	3
2013	53.7	27.6	27.6	23.5	23.5	23.5
2028	68.3	35.1	41.0	25.9	27.9	29.9
2015–2030	14.6	7.5	13.4	2.4	4.4	6.4

Note: Values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

Table 41 represents the labour surplus generated in the six scenarios being considered. Values range between a minimum of 1.1 million in Scenario A3 (characterized by a constant participation rate and a growth in employment at a rate of growth equal to that of WAP) to a maximum of 11 million in Scenario B1 (in which the participation rate increases, while the employment level remains constant). The migration balances obviously reflect three hypotheses : (a) zero migration balance; (b) a migration balance equal to half the additional labour surplus; and (c) a migration balance equal to the additional labour surplus and therefore ranging between 0 and 11 million.

Table 41: Egypt's labour shortage and migration balance in six scenarios of labour force participation and employment growth; 2015–2030

	Scenarios					
	A1	A2	A3	B1	B2	B3
Additional labour surplus	5.1	3.1	1.1	11.0	9.0	7.0
Zero migration balance	0	0	0	0	0	0
Migration balance = half ALS	2.6	1.6	0.6	5.5	4.5	3.5
Migration balance = ALS	5.1	3.1	1.1	11.0	9.0	7.0

Note: Values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

One way to appreciate the different impacts of migration is to compare the values that the main labour market variables and indicators will assume in 2030, according to different scenarios of participation, employment growth and migration (Table 42). The following conclusions (some very intuitive) can be made:

- (a) Unemployment is positively related to participation and inversely related to employment growth;
- (b) The RoE is positively related to emigration flows;
- (c) The RoU is inversely related to emigration flows; and
- (d) WAP is inversely related to the migration balance.

In conclusion, the higher the percentage of the excess labour supply that Egypt is able to export, the better the situation is in the labour market. Emigration will in fact reduce WAP and therefore, all other things being equal, the labour supply and unemployment.

Table 42: Egypt's main labour market variables and main labour market indicators (2015) in alternative scenarios of labour force participation and employment growth in 2030

2015															
WAP	LF	Employment	Unemployment	RoA	RoE	RoU									
53.7	27.6	23.5	4.1	51.4	43.8	14.7									
2030															
WAP	LF	Employment	Unemployment	RoA	RoE	RoU	M1								
A1	68.3	35.1	25.9	9.2	51.4	37.9	26.2	B1	68.3	41.0	25.9	15.1	60.0	37.9	36.8
A2	68.3	35.1	27.9	7.2	51.4	40.8	20.5	B2	68.3	41.0	27.9	13.1	60.0	40.8	32.0
A3	68.3	35.1	29.9	5.2	51.4	43.8	14.8	B3	68.3	41.0	29.9	11.1	60.0	43.8	27.1
M2															
A1	65.7	33.8	25.9	7.9	51.4	39.4	23.4	B1	62.8	37.7	25.9	11.8	60.0	41.2	31.3
A2	66.7	34.3	27.9	6.4	51.4	41.8	18.7	B2	63.8	38.3	27.9	10.4	60.0	43.7	27.1
A3	67.7	34.8	29.9	4.9	51.4	44.1	14.1	B3	64.8	38.9	29.9	9.0	60.0	46.1	23.1
M3															
A1	60.8	31.2	23.5	7.7	51.4	38.7	24.7	B1	54.9	33.0	23.5	9.4	60.0	42.8	28.6
A2	65.2	33.5	27.9	5.6	51.4	42.8	16.7	B2	59.3	35.6	27.9	7.7	60.0	47.0	21.6
A3	67.2	34.5	29.9	4.6	51.4	44.5	13.4	B3	61.3	36.8	29.9	6.9	60.0	48.8	18.7

Note: Values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

The impact of the migration balance on total population will now be considered. In the absence of migration, the total population is expected to increase by 19.1 million (+22.4%) by 2030. The greater absolute contribution comes from WAP (+14.6 million), while the biggest percentage change will affect the elderly, whose share will however remain below 8 per cent even in 2030. In effect, between 2015 and 2030, the demographic transition will still be affecting mainly WAP and only marginally the elderly (Table 43).

Table 43: Egypt's population by main age group in absence of migration; 2015 and 2030

	Population							
	Absolute value				Percentage composition			
	0-14	15-64	65+	Total	0-15	15-65	65+	Total
2015	26.2	53.7	5.0	85.0	30.8	63.2	5.9	100.0
2030	27.5	68.3	8.2	104.0	26.5	65.7	7.9	100.0
2015-2030								
Absolute change	1.3	14.6	3.1	19.1	-4.4	2.4	1.9	0.0
Percentage change	5.1	27.2	62.6	22.4	-14.2	3.8	32.8	0.0

Note: Values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

Since migration flows will not only reduce WAP but also the number of births, in all scenarios with migration, the total population will increase less than it would in the absence of migration, the difference being, all else remaining equal, directly linked to the amount of migration (Table 44).

Table 44: Egypt's population by main age group in alternative scenarios of labour force participation and employment growth; 2030

	0–14	15–64	65+	Total	0–14	15–65	65+	Total
M2								
A1	26.7	65.7	8.2	100.6	26.5	65.3	8.1	100.0
A2	27.0	66.7	8.2	102.0	26.5	65.5	8.0	100.0
A3	27.3	67.7	8.2	103.3	26.5	65.6	7.9	100.0
B1	25.8	62.8	8.2	96.7	26.6	64.9	8.5	100.0
B2	26.1	63.8	8.2	98.1	26.6	65.1	8.3	100.0
B3	25.6	64.8	8.2	98.6	25.9	65.8	8.3	100.0
M3								
A1	25.1	60.8	8.2	94.1	26.7	64.6	8.7	100.0
A2	26.5	65.2	8.2	99.9	26.6	65.3	8.2	100.0
A3	27.2	67.2	8.2	102.5	26.5	65.5	8.0	100.0
B1	23.2	54.9	8.2	86.3	26.9	63.6	9.5	100.0
B2	24.6	59.3	8.2	92.1	26.7	64.4	8.9	100.0
B3	22.9	61.3	8.2	92.3	24.8	66.4	8.9	100.0

Note: Values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

Finally, the demographic and economic dependency ratios, starting with the former, should be considered. The estimates have already shown the very serious informative and analytical limits of the demographic indicators of dependency. The indicators for Egypt only strengthen the previous conclusions. According to the demographic indicator, the social and economic situation in 2030 would be better than in 2015, and migration would make it worse. Obviously, this depends on the fact that the denominator (the measurement unit) is provided by the WAP (Table 45).

Table 45: Egypt's demographic dependency ratios in 2015 and in alternative scenarios of labour force participation and employment growth in 2030

2015			
	YDR	ODR	TDR
	488	94	581

2030			
	YDR	ODR	TDR
No migration			
	403	120	523
M2			
A1	406	124	531
A2	405	123	527
A3	404	121	524
B1	410	130	540
B2	409	128	537
B3	395	126	521
M3			
A1	413	135	548
A2	407	126	532
A3	404	122	526
B1	423	149	572
B2	415	138	553
B3	373	133	507

Source: Elaboration on UN DESA, 2013a and ILO data.

More accurate and correct insight is provided by the economic indicators (Table 46). In Egypt, during 2015, 1,000 workers supported, in addition to themselves, 2,610 dependants, which is nearly double the amount of their European Union counterparts. It must also be stressed that in Egypt, the largest group of dependants is represented by the non-labour force in working age (42.5% of the total), followed by the young (35.2%).

As was to be expected, the scenarios show that in order to confront the negative impact of demographic trends on the social burden, the focus should not only be on expanding employment, but in situations like that of Egypt – that is, of countries in the initial phase of the demographic transition – on the extremely important role that emigration plays should also be considered.

Table 46: Egypt's economic dependency ratios in 2015 and in alternative scenarios of labour force participation and employment growth in 2030

2015									
	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
	2,610	1,113	173	1,110	214	42.7	6.6	42.5	8.2

2030									
	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
M1									
A1	3,018	1,063	356	1,283	316	35.2	11.8	42.5	10.5
A2	2,730	987	258	1,191	293	36.2	9.5	43.6	10.7
A3	2,480	921	174	1,111	274	37.1	7.0	44.8	11.0
B1	3,018	1,063	583	1,056	316	35.2	19.3	35.0	10.5
B2	2,730	987	470	980	293	36.2	17.2	35.9	10.7
B3	2,480	921	371	914	274	37.1	15.0	36.9	11.0
M2									
A1	2,887	1,031	305	1,235	316	35.7	10.6	42.8	10.9
A2	2,656	969	229	1,164	293	36.5	8.6	43.8	11.0
A3	2,455	915	164	1,102	274	37.3	6.7	44.9	11.1
B1	2,737	995	455	970	316	36.4	16.6	35.5	11.5
B2	2,516	935	373	915	293	37.2	14.8	36.4	11.7
B3	2,297	856	301	867	274	37.2	13.1	37.7	11.9
M3									
A1	2,999	1,067	328	1,257	348	35.6	10.9	41.9	11.6
A2	2,581	951	201	1,136	293	36.8	7.8	44.0	11.4
A3	2,430	909	155	1,093	274	37.4	6.4	45.0	11.3
B1	2,668	987	400	934	348	37.0	15.0	35.0	13.0
B2	2,302	883	275	850	293	38.4	12.0	36.9	12.7
B3	2,089	765	230	820	274	36.6	11.0	39.3	13.1

Source: Elaboration on UN DESA, 2013a and ILO data.

SOME FINAL CONSIDERATIONS

From a global approach, a major implication of the migration model is that the twenty-first century will witness migration flows of an unprecedented size. This will be provoked by the demographic polarization that is going to characterize the planet.

The scenarios show that the Mediterranean will be one of the areas most affected. As suggested by the expected trends in WAP and previous analysis (Bruni, 2009, 2013 and 2016), the other area that will register immigration flows of even larger sizes will be East and South-East Asia, where the structural lack of labour supply that will affect China, Japan, Thailand and Singapore will attract an unprecedented number of migrants. Another pole of attraction will be represented by the Gulf countries where the interplay of economic trends, demographic trends and the complex labour market segmentation (Bruni and Salvini, 2015) will also determine a significant need of foreign labour.

To understand that the phenomenon of mass migration is unavoidable will oblige governments and international organizations concerned to face crucial decisions as to whether to let this process be largely supervised by illegal organizations or manage it within a well-planned and legal framework. This is what will be considered in the third part of the paper.

PART 3

The management of Mediterranean migration flows: A proposal

A SURVEY OF THE LITERATURE ON THE SOCIAL AND ECONOMIC IMPACT OF MIGRATION

Introduction

The social and economic impact of migration is a hotly debated topic that interests not only economists and demographers, but also civil society and policymakers even more so. This interest is fully warranted by both the growing importance of the phenomenon, as well as the size of the international migrant stock. Moreover, as previously shown, there are very valid reasons to argue that not only will migration flows continue to increase, but that they will become one of the dominant political and economic features of the twenty-first century. It is therefore of paramount importance to take a stand on this topic.

There is no doubt that migration flows have a number of serious impacts on the social, economic and political realities of both arrival and departure countries. In both groups of countries, the major economic effects will concern the labour market, the budgetary situation and demographic trends (especially the ageing process). However, it is evident that there are other numerous social and political effects linked to education, welfare, urbanization and others – that is, with socioeconomic development.

This section will shortly recall the literature concerning the impact of migrations both on arrival and departure countries, the broad spectrum of opinions that have been expressed by economists, demographers and other social scientists, as well as the main conclusions that have been reached. The review does not aim for completeness, but only to single out a few contributions covering some of the most debated issues in arrival countries.

The conclusions drawn from research conducted in many arrival countries have been much more positive towards migration than has the attitude of many citizens and politicians. However, it can be argued that in order for this research to be properly interpreted, it must be viewed within a framework in which migration is recognized not merely as an option but as a necessity.

Given the vast amount of research conducted on this topic and the variety of approaches and methodologies present in the literature, the survey will be largely based on previous surveys and mainly on two recent ones (and the bibliographies therein).⁴⁶ This report will also consider some recent studies on the fiscal impact of migration on several European Union countries.⁴⁷

Arrival countries

Surveying the literature on the empirical impact of migrations, Kerr and Kerr (2011) have included topics such as the assimilation of migrant workers into the local labour market, and their impact not only on the working conditions of local workers, but also on the public finances of host countries.

The paper recalls that numerous studies have shown that upon arrival, migrants experience lower status employment and lower wages than natives, but with time, these differences are likely to diminish. However, recent migrant cohorts are expected to experience permanently weaker labour market success, especially in European countries. With regards to the impact of migration on the working conditions of the arrival country, it is found that adverse labour market effects are substantially weaker than often perceived. In fact, most studies find only minor displacement effects even after very large migrant flows. Some larger effects have been found with regard to the less educated or the earlier migrant groups, that is, those closest in employment level to the new migrant. Above all, however, migrants can reduce the skill shortage in arrival countries.

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46 Kerr and Kerr (2011); Drinkwater et al. (2002).

47 More specifically, research conducted in the United Kingdom, Germany and Italy will be considered.

In terms of the issue of growth and migration, Drinkwater et al. (2002) conclude that:

- In arrival countries, migration should increase growth both in terms of endogenous and short-term growth, especially if the majority of migrants are highly skilled; and
- In departure countries, the outflow of skilled workers from sending countries might have a detrimental effect; however, the migration of the highly skilled can bring about positive effects in that it is likely to encourage the formation of human capital.

Another major issue is certainly that of the fiscal burden. Already at the beginning of the recession, Boeri (2010) emphasized that the “Mounting concerns of the EU population with respect to immigration are indeed driven by the fear that migrants represent a fiscal burden mainly because they drain public resources as recipient of the generous social transfers introduced in Europe to prevent social exclusion.” After noting that, it is precisely for this reason that national governments are tightening their migration policies and cutting down on welfare access to migrants, Boeri recalls that: “This does not seem to reduce migration flows, nor to significantly affect the skill content of migration. The only visible outcome is that policy instruments devised to promote social inclusion are quite paradoxically becoming weapons of mass exclusion.”

The most important point, however, is that the literature does not support these fears. According to Kerr and Kerr (2011), welfare dependency presents a large variance across the typology of migrants and depends mainly on the policies adopted by different countries and their institutional setting. More specifically, a series of recent studies by countries, such as Germany, the United Kingdom and Italy, have shown that national budgets experience a net positive impact from migration.

Bonin, from the Centre for European Economic Research (Bonin, 2014), has shown that Germany profits remarkably from migration. The conservative estimate of the paper is that in 2012, the German budget had a net gain of EUR 22 billion from the 6.6 million migrants (still without German citizenship), or EUR 3,300 per capita. The paper states that Germany will continue to gain in the future: on average, migrants over the course of their life will pay EUR 22,300 more to the German State than they will receive in transfer payments. The study also emphasizes that in the absence of migrants, Germany would face a substantial shortage of skilled labour, as well as high fiscal

burdens as a result of its ageing and shrinking population. Bonin suggests that Germany should adopt a “bold immigration policy of 200,000 young people per year with better than average levels of qualification: 20 per cent low skilled, 50 per cent medium skilled and 30 per cent high skilled labor”.⁴⁸ This skill combination would produce a net average gain of EUR 406 per migrant that could be used to finance a EUR 26.3 billion in educational programmes for young migrants below the age of 30 and who fall below the average taxation level.

With regard to public finances, Dustman and Frattini (2014) argue that migrants are not a drain on the United Kingdom’s finances; instead, they pay out far more in taxes than they receive in State benefits.⁴⁹ Secondly, migrants who came to the United Kingdom after 1999 have made positive fiscal contributions irrespective of their origin. More specifically, between 2001 and 2011, the net fiscal contributions of recent EU10 migrants amounted to almost GBP 5 billion, those of other recently arrived European migrants to GBP 15 billion, and those of recent non-European migrants to GBP 15 billion. Finally, migrants, by bringing with them their educational qualifications paid for by their countries of origin, provide savings to the taxpayer. Calculations show that between 1995 and 2011, European migrants endowed the United Kingdom’s labour market with human capital that would have cost GBP 14 billion had it been produced through the British education system, while non-European migrants brought human capital that would have cost more than GBP 35 billion, with an overall total of GBP 49 billion in savings.

Recent studies show similar results for Italy. At present, the fiscal contribution of migrants is positive, and there is no doubt they are contributing to pensions received by Italians (Gabriele, 2014). Estimates suggest that the positive role of migrants will continue in the long run, but this will depend on the capacity of the system to promote the integration of foreigners in the regular labour market. Other recent calculations (Fondazione Leone Moressa, 2012) show that in 2011, Italian residents born abroad contributed EUR 16.3 billion to the Italian budget, while the total cost borne by Italy was EUR 12.6 billion.

In summary, previous research conducted on the impacts of migration on the host country has concluded that migration has a positive impact both on the labour market and the national budget.

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48 As seen in the previous part of this paper, this number of migrants would be insufficient even in a situation of stable employment.

49 The paper shows that between 1995 and 2011, migrants residing in the United Kingdom have been generally less likely than nationals to receive State benefits or tax credits or live in social housing, which is also true for recently arrived migrants.

Departure countries

The impact of emigration on departure countries has attracted much less interest and attention, with the most debated topic being the issue of “brain drain”. Various evaluations on this issue have been proposed, and must be completely reconsidered on the basis of the conclusion and proposals.

In terms of the capacity of remittances to boost the economy of departure countries, the prevailing argument posits that the degree of impact depends on how the remittances are used. If they are used for consumption purposes, as it is often the case, remittances produce an increase in the price level and in imports, as well as an overvalued exchange rate. The problem therefore is that of devising policies that will divert remittances for productive purposes.

The following paragraph and the discussion of policy measures in the subsequent one will consider other relevant aspects of the impacts of the migration process in departure countries.

Some final considerations

A survey of the literature on the impact of migration shows that despite the difficulties of measuring the plausibility of different analyses and comparing them, previous studies all seem to agree that migrations have positive net effects both on arrival and departure countries.

This literature, in keeping with the dominant supply-side vision underwriting the majority of migration theories from which impact models are derived, evaluates and judges migration flows mainly on the basis of their social and economic advantages and disadvantages.

The analysis presented in this paper suggests that the existing literature misses the most important aspect of migration, the fact that migration is not merely an option with relative advantages and disadvantages, but is a sheer necessity for both arrival and departure countries, mainly as a result of the demographic polarization that is affecting the planet. Moreover, this report argues that a country will continue to need foreign labour – and will therefore attract migrants – so long as it is affected by a structural lack of labour, that is, as long as WAP will present a structural imbalance between generational entries and generational exits.

Once this perspective is adopted, the growing empirical evidence that migrations have positive effects on the labour market of arrival countries and on their fiscal situation remains interesting and pertinent, but these considerations should follow the initial concerns regarding the quantitative and qualitative characteristics of the structural lack of the labour force. It is certainly important that even very large migrant flows have only minor displacement effects on local workers, with the possible exception of the less educated, and that they slow down the ageing process and make a notable fiscal contribution. However, it is necessary to understand that regardless of these varying challenges and impacts, migrant flows are essential in providing the arrival country with the workforce necessary to maintain economic growth (without forgetting that migrants are also an important source of new entrepreneurship). Above all, migrants increase the TFR in the arrival country, which will help that country to move towards equilibrium in WAP. In assessing the role of migrants in arrival countries, the focus should therefore shift from an evaluation of the short-term advantages and disadvantages of migration flows, to an estimation of the quantitative and qualitative need for foreign labour that is necessary to create a condition of short-term and long-term equilibrium in the labour market, and to a consideration of how to manage the unavoidable migration flows in an efficient, economically correct and humane way.

A similar argument applies also for countries that are going to be affected by a growth in WAP – and therefore in the potential labour supply – of such a size that it cannot be counterbalanced by economic growth. Furthermore, in this case, it remains true that migration plays many important roles, such as reducing the SEL supply – and therefore of unemployment and poverty – and providing remittances that could, if properly channelled, contribute to economic growth and development. However, emigration is especially important, indeed essential, insofar as it contributes to lowering the number of births and the TFR, and is therefore the only phenomenon that might accelerate the process towards an equilibrium of WAP, thereby eliminating the SEL.

However, is it really true that migration is the only possible solution to not only the structural lack of labour in potential arrival countries but also to the excess of labour in departure countries? Before discussing how to properly manage migrations across the Mediterranean basin, it is necessary to analyse whether migrations are the only possible answer to the SSL. At the theoretical level, the answer is certainly no; in theory, alternatives do exist, but are they practicable?

ALTERNATIVE TO MIGRATION

Two types of alternatives will be considered: the first consists of reducing economic growth in order to avoid migration; the second is adopting industrial and labour market policies designed to make the available WAP sufficient to reach the desired rate of economic growth.

Is de-growth a solution to the shortage of labour?

The term “de-growth” is normally used to indicate an economic strategy aimed at responding to the limits-to-growth dilemma. It advocates the downscaling of production and consumption, arguing that overconsumption lies at the root of long-term environmental concerns and social inequalities. This strategy does not require a reduction in well-being, but exponents of de-growth aim to maximize happiness and well-being through non-consumptive means – for example, sharing work, consuming less – while devoting more time to art, music, family, culture and community.

Here, de-growth is used in a different, non-ideological sense as a strategy to guide GDP growth per capita. This would consist of planning a path for GDP growth that would allow an increase of GDP per capita (a rough measure of economic well-being), with the available labour force.

The problem will be exemplified by utilizing Germany’s data, and assume a desired growth of GDP per capita of 20 per cent over the 2015–2030 period. During the same time interval and in the absence of migration, the total population of Germany is projected to decline by around 6 per cent. Therefore, in order to reach the desired growth in GDP per capita, GDP would have to increase by around 14 per cent. In the same time period, the WAP would decline by 16 per cent. Assuming a constant RoE, the growth in labour productivity would have to exceed the rate of GDP growth by around the same amount. Certainly, the higher the desired rate of growth in GDP per capita and the more pronounced the decline in WAP, the higher would have to be the needed growth rate of productivity.

In essence, the GDP per capita of a country can increase while the level of employment declines if the economic system succeeds in keeping the rate of growth of productivity above the rate of growth of production for the whole period in which WAP will decline, the amount being approximately equal to the decline in WAP.

In evaluating the plausibility of this solution, it must be remembered that demographic trends suggest that the decline in WAP will continue for a very long time in countries already affected by this phenomenon, while numerous other countries will soon enter this situation. It must also be emphasized that between 1990 and 2008, the level of employment increased in all industrialized countries; the values ranged between a maximum of 120 per cent in Luxembourg and the minimum values below 10 per cent in Denmark, France, Japan, Italy, Sweden and Finland (Bruni, 2014).

Finally – and this seems to be the most significant objection – it is difficult to believe that entrepreneurs will accept a limit to the possibility of expanding production and be willing to operate in an economic context that restricts the rate of economic growth.⁵⁰

Managing a labour market characterized by a structural lack of labour

Once the possibility of eliminating the need for migration by reducing the level of employment acting on the rate of growth of GDP is abandoned, the policies that should be adopted by potential arrival countries in order to reduce the need for foreign labour can then be discussed. Such measures can be classified according to whether they act on the demand or the supply side.

Demand side measures

Two types of policies can be implemented in order to reduce the demand for labour: (a) increasing productivity; and (b) delocalizing production.

In the previous section, it is argued that productivity cannot be a global solution to the problem of labour shortage, but it is evident that, all else being equal, capital intensive development strategies can reduce the need for foreign labour. However, such strategies find an obvious limit in countries where two thirds of the employed work in the service sector.

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50 However, it should be remembered that the de-growth strategy as it has been defined here will probably become the only available strategy in the second half of the century when the WAP of the planet will start to decline.

What about delocalization? To this effect, it should be noted that:

- (a) Delocalization of production has already been largely pursued by many European countries, without having an evident effect on their labour needs;
- (b) Europe is not the only area that will be interested in delocalizing production due to the shortage of labour supply; its biggest competitors will be China, Taiwan Province of China, Japan, Thailand and the Republic of Korea (Bruni, 2012b, 2013, 2014), and many of these countries already have long experience of this process and specialized agencies to foster it; and
- (c) Not everything can be produced abroad and since the labour shortage will continue and even become more pronounced, this kind of policy will require strategic decisions, accurate planning, as well as specialized and effective agencies.

In conclusion, productivity and delocalization can contribute to reducing the need for foreign labour, but they cannot be the solution. A different opinion has been expressed in a recent World Bank study, which suggests that productivity and delocalization can solve the dramatic problem of labour shortage that in the next 15 years will affect China (World Bank, 2012; for an opposing view, see Bruni, 2013 and 2014).

The future will tell whether the World Bank's hypothesis is correct or if mass migration will be the answer to the problem of the growing structural lack of labour that will affect a growing number of countries.

Supply side measures

It might be thought that the most obvious response to the SSL is to activate social and economic measures aimed at increasing fertility. However, such policies cannot produce any results for at least the next 15 to 20 years, as it is in this period that the entries in WAP will be represented by young people who have already been born. Moreover, empirical evidence shows that while there is some indication that policies can reduce fertility, no clear evidence supports the opposite case.

Nevertheless, it should be remembered that a long-term solution to the problem of labour shortage will be achieved only if and when a country reaches a TFR above two children per woman. Therefore, every country in the third phase of

the demographic transition should strive to increase fertility and bring it above replacement level. In this context, it could be argued that migration is the best policy since migrants bring with them, and keep at least for the first generation, a TFR above replacement level.

Another measure to reduce the need for foreign labour, one that is generally proposed in all countries around the world, is an increase in participation. It is previously seen that the European Union has a rather high rate of participation (almost 75%), with only seven countries below 70 per cent, but above 65 per cent. The scenarios have shown that every one point increase in the rate of participation would reduce the European Union's yearly need for foreign labour by around 175,000 people. It must also be recalled that the low level of labour market participation in a certain number of European Union countries is determined not only by the low level of labour demand, but also by the lack of services provided to the families (Gauthier, 2007). Finally, while all countries are affected by an ageing process that will be accompanied by extraordinary social changes, the duration of the economic phases of life will also present major changes, the most important being a notable extension of the training phase. This suggests that in order to increase participation towards the Swedish level, governments should not limit themselves to raising the retirement age, but rather design and implement integrated solutions that should be envisaged as an *engineering of the phases of life*.

Finally, the most discernible measure for reducing the need for non-European Union labour would be an increase in internal mobility, a measure however, that can only have a limited time span, given that all European Union countries are going to be affected by labour shortages. It is however extremely plausible that internal migration from the "poor" European Union countries to the "rich" European Union countries will continue, enabled by a substitution of local labour by foreign labour in the poorer countries of the European Union. In this way, it might be argued that in the very near future, Eastern European countries might become the favourite transit route for international migrants towards the centre of the European Union as they could provide temporary work for the migrants.

SOME FINAL CONSIDERATIONS

The main thesis of this paper is that the positive and increasing migration balances that are affecting numerous developed countries, and which will continue to affect an increasing number of countries, are produced by a structural lack of local labour supply. Along with this structural lack is the presence of an unlimited supply of labour in developing and underdeveloped countries, which is going to be increasingly concentrated in a diminishing number of countries: the poorest of the planet.⁵¹ This is due to the decline in fertility that is affecting, though at different stages, almost every country on the planet.

At the empirical level, this paper has estimated that in the next 15 years, the European Union will be characterized by an SSL of around 2.2 million per year, a value that can be higher or lower depending on the following:

- Growth in employment, and therefore the economic growth of the European Union and its typology;
- Trends in labour force participation; and
- Measures adopted to reduce labour demand and increase labour supply.

It is also evident, as is clearly shown by the historical data, that all the previously adopted policies aimed at halting migrants that were needed by the economic system are not only ineffective but economically inappropriate (Castles, 2004).

It is also shown that the countries on the northern shore of Africa (but not only these) will be affected by a specular situation, that is, by an excess of labour supply that cannot be absorbed by the local demand.

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51 However, it should be recalled that situations where there is a structural lack of labour supply and an SEL supply can also be generated by economic trends. The Republic of Moldova is a good example of a country where economic collapse and a consequent dramatic decline in the employment level, produced by the transition from a command economy to a market-based economy, has generated an SEL supply (Bruni, 2009). An example of SSL supply in the presence of a positive natural growth of WAP is provided by the United States where between 1970 and 2005, employment grew by 75 million, while the natural growth of WAP has been only 45 million. More recently, the best example of this situation is provided by the Gulf countries whose labour markets are characterized by a complex set of segmentations (Bruni and Salvini, 2015).

The author's thesis (a demand-side thesis) is in direct contrast with the prevailing migration theories and their empirical applications. At the theoretical level, the largely prevailing supply-side theory envisages migration as mainly a security problem. Thus, the main policy produced by this approach has been the introduction of largely insufficient quotas, normally limited to a few occupations in which the lack of local supply was highly evident, and efforts to limit or impede the exits from departure countries, in exchange for economic aid largely insufficient to face their structural excess of labour. These policies have inevitably resulted in irregular mass migration flows,⁵² followed by expensive and politically difficult-to-promote legalization procedures, once the market had clearly shown that in fact, those irregular migrants were already employed and needed by the productive system. It should be evident by now that manpower needs cannot be eliminated by law or with the use of an army.

Moreover, the supply approach could not, from its intrinsic nature, provide models capable of indicating which countries are potential arrival countries and which are potential departure countries, when one situation would turn into the other, and especially answer the question of how many migrants would be needed by arrival countries.

As a result, the leading institutes in charge of producing demographic forecasts have adopted unrealistic hypotheses on migration, which in turn have produced an unrealistic picture of the demographic future of the planet. This approach, in fact, has led these institutions to forecast that countries in the last phase of the demographic transition will be affected by a decline in total population, an even more pronounced decline in WAP and an increasing process of ageing, while countries in the previous stages of the demographic transition will experience an unprecedented population explosion, while international migrations will fade away.

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52 This approach has clear advantages for some economic actors. In the first place, it allows the labour-intensive sectors, like construction and agriculture, to exploit cheap labour. Moreover, as the present global crisis is showing, migrants, and especially irregular migrants, represent a buffer for local workers in periods of recession. It also allows governments to take a conservative stance on the migration issue, so as not to lose the consent of large shares of the population who are ideologically averse to migration. However, it also has numerous drawbacks. In the countries of arrival, it can reduce the incentive to technological innovation by allowing companies to pay wages far below the market value. It implies the high cost of trying to prevent irregular entries and expel irregular migrants often needed by the labour market. Moreover, it has an extremely large human cost with extremely high numbers of deaths of young people and children trying to irregularly cross borders, the annihilation of small fortunes accumulated by families in order to allow a family member to take to the road in pursuit of a better life in a new country, as well as the destruction of hopes and dreams.

Finally, the standard projections strongly suggest that the demographic future they represent is “inevitable”, since it is not connected to the socioeconomic sphere. As previously emphasized, until now politicians, and unfortunately also economists, have not questioned the realism of these projections and are using them to forecast labour market variables and plan economic policies.

As previously seen, the model and the methodology proposed lead to very different conclusions. The structural lack of labour force, present in countries with below replacement level fertility, together with their drive to economic development, will attract an unprecedented number of economic migrants that will produce an increase in total population, an even bigger increase in WAP, and will slow down the ageing process. It has also been argued that, given the structural nature of the problem, arrival countries (among them European countries) will not be able to eliminate or even substantially reduce migration by increasing productivity, delocalizing production or adopting other economic and labour market measures. At the same time, the projected increase of WAP in developed and underdeveloped countries (also among countries along the southern shore of the Mediterranean) is such that the economic growth needed to create an increase in labour demand, in keeping with the growth in labour supply, is totally out of reach. In conclusion, for both types of countries:

Migration is not an option but a necessity.

The most important point raised by this paper, however, is that migration flows (and therefore demographic development), should not be seen as an unavoidable phenomena to put up with, and to which the economic sphere must adapt to, but as a variable that can be forecasted and managed. Moreover, the demographic situation of potential arrival and departure countries is specular and complementary. The clear implication is that it is in the interest of both countries not to passively endure migration flows, but to develop a methodology that can help manage them in a cooperative way.

MANAGING THE MEDITERRANEAN MIGRATION FLOWS: A PROPOSAL

This paper represents an initial step of a process that should lead to a cooperative management of migration flows between the southern and northern shores of the Mediterranean. The proposal is a phased approach towards building cooperation between countries across the Mediterranean to meet the demographic and economic challenges they will both face in the coming years, a process that aims to better plan for and maximize the potential of demand-driven migrations.

The precondition is the high-level political understanding needed to counteract years of xenophobic anti-migrant rhetoric that has been fuelled by the 2008 financial crisis and the fear and uncertainty that has resulted from it. With this in mind, there is a need for constructive dialogue regarding the need for labour migration between these countries and potential sending countries in order to create a common vision of how this need can be addressed in an organized and mutually beneficial way.

In the absence of such an agreement, labour market imbalances (with gaps in industrialized countries and surpluses in others) will continue to draw irregular migrants seeking better livelihood opportunities and risking their lives, often in the hands of smugglers, on potentially fatal journeys.

The overall objective of the proposed intervention is to

Assist countries across the Mediterranean to better plan for and maximize the potential of demand-driven migration.

To this end, the programme foresees three outcomes that correspond to three subsequent phases of implementation, with each building upon the cooperation created during the previous phase, in order to achieve higher degrees of mutually beneficial long-term results. They are as follows:

- (a) European and potential sending countries across the Mediterranean agree on realistic forecasting methods to ascertain their respective labour migration needs;
- (b) European and potential sending countries coordinate evidence-based labour migration policy and mechanisms through a Labour Migration Observatory; and

- (c) Labour migrants are actively matched to job opportunities in Europe through a Placement Centre with access to labour market information in both sending and receiving countries.

The first phase and its outcome focuses on assisting countries on both sides of the Mediterranean and on both sides of the migratory circuit, both sending and receiving, in order to agree upon not only what their mutual needs are, but also how these needs can be best calculated. This phase will involve developing and testing methodologies for projecting labour market deficits and surpluses. Through consultations with potential sending countries, a few target countries with the most interest and willingness to engage in the project will be identified, and key officials in these countries will be trained in the methodology. Also, based on the results of applying the methodology to European Union countries, a few European partners will be identified as those with the greatest potential need for labour migrants. As a culminating event, representatives of these countries will be brought together to be presented with the findings of the various projections and begin discussing a framework for cooperation on labour migration.

The second phase will take this cooperation a step further. The programme will facilitate follow-up bilateral meetings between the sending and receiving countries participating in the conference in order to reach an agreement on pilot labour migration schemes. At the same time, if a clear need is identified during the conference, the programme will establish the Labour Market Observatory in one of the potential sending countries that will serve as a hub for information, expertise and training. Staffed by trained experts on labour market assessment in general and the specific methodology that was developed, the Observatory will help participating countries to continue collecting and exchanging labour market information in a systematic manner, in collaboration with the national and international institutions already operating in this field. In turn, this information will be provided to policymakers so that they can review and adjust vocational training, educational, and other labour-market related policies towards the needs of European labour markets in order to facilitate the mobility of their workers.

The third and final phase will see all the above-mentioned groundwork reach fruition through the active insertion of labour migrants into the European labour force. The programme will use the results of successful pilot labour migration schemes during the previous phase to facilitate the expansion of these into broader bilateral agreements on labour mobility. Based on the agreements reached, especially on data sharing, and in coordination with all the participant

countries, a Placement Centre will be established to match workers in sending countries to opportunities abroad. The Placement Centre will target sectors underserved by private recruitment agencies, such as lower-skilled positions and/or those that would provide little financial profit for the recruiters themselves. The Centre, furthermore, would be a public institution tasked specifically with the implementation of the agreements on labour mobility reached and the projections of deficits and surpluses identified, thus, responding to the public need rather than private interests.

Annexes

DEMOGRAPHIC AND LABOUR MARKET SCENARIOS FOR SIX EUROPEAN UNION COUNTRIES

Between 2015 and 2030, Germany, Italy, Poland, Spain, France and the United Kingdom are expected to experience the most pronounced absolute decline in WAP in the European Union. These countries are characterized by large differences in participation, employment and unemployment, as well as in the expected decline in WAP. However, the scenarios show that for all of them, a positive migration balance is not an option but rather a necessary condition to expand production.

Germany

In 2015, Germany's labour market was in a healthy state with the RoE at 76.7 per cent,⁵³ much higher than the European average, and an RoU of 4.6 per cent, which was less than half the overall European Union level.

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53 The value is computed dividing total employment by the WAP.

Given the country's negative natural trend in WAP, since 1997, the increase in WAP has been ensured only by migrants and the absolute increase in labour force has been equal to that in WAP. As a consequence, the rate of participation has been progressively increasing, and unemployment has been declining after reaching a peak of more than 4.5 million in 2005.

Continuing this historical trend, in absence of migration, the WAP will continue to decline at an average rate of 568,000 people per year, which, at a constant rate of participation, implies a decline of 454,000 members of the labour force. Assuming that the rate of participation will increase to 85 per cent (Scenarios B), the decline will still be equal to 299,000 (Table A1).

Table A1: Germany's WAP, labour force and employment in 2015 and in alternative hypothesis of labour force participation and employment growth in 2030

	WAP	Labour force		Employment		
		A	B	1	2	3
2015	53.2	42.4	42.4	40.5	40.5	40.5
2030	44.6	35.6	37.9	40.5	42.9	45.3
2015–2030						
Absolute change	-8.5	-6.8	-4.5	0.0	2.4	4.9
Yearly average change (thousands)	-568	-454	-299	0	162	324

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The labour shortage would then range between 4.9 million (Scenario B1) and 12.8 million (Scenario A3), which would imply yearly migration balances of between 329,000 and 855,000 (Table A2). It is evident that even under the most "favourable" conditions, migration will not be just an option but a necessity. Using the same methodology adopted for the European Union, the most probable level of the migration balance is around 592,000 people per year.

Table A2: Germany's labour shortage and migration balance in six scenarios of labour participation and employment growth in the period 2015–2030

	Scenarios					
	A1	A2	A3	B1	B2	B3
Labour shortage	-6.8	-9.2	-11.7	-4.5	-6.9	-9.3
Migration balance	7.5	10.2	12.8	4.9	7.6	10.3

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The WAP and LF will tend to increase in all scenarios in which employment is assumed to increase from the 2015 level, the improvement being positively related to employment growth and inversely related to the rate of participation (Table A3); unemployment and the RoU will decline in all scenarios.

Table A3: Germany's main labour market variables and main labour market indicators in 2015 and in six scenarios of labour force participation and employment growth in 2030

	WAP	Labour force	Employment	Unemployment	RoA	RoE	RoU
2015							
	53.2	42.4	40.5	2.0	79.8	76.1	4.6
2030							
A1	52.4	40.8	38.9	1.8	77.7	74.2	4.5
A2	55.0	42.8	41.3	1.5	77.7	75.0	3.5
A3	57.6	44.7	43.6	1.2	77.7	75.7	2.6
B1	51.3	41.1	38.9	2.1	80.0	75.8	5.2
B2	53.9	43.1	41.3	1.9	80.0	76.5	4.3
B3	56.5	45.2	43.6	1.6	80.0	77.2	3.5

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

With regard to demographic trends, Germany exemplifies the implications of the model. The growth in employment will require an inflow of migrants that will produce a relative increase in WAP and in the number of young people (Table A4). As a result, and in contrast to general opinion, the decline in births will “produce” an increase both in the WAP and total population.

Table A4: Germany's population by main age group in 2015 and in six scenarios of labour force participation and employment growth in 2030

	0–14	15–64	65+	Total	0–14	15–64	65+	Total
2015								
	10.4	53.2	17.1	80.7	12.9	65.9	21.2	100.0
2030								
No migration	9.9	44.6	22.1	76.7	12.9	58.2	28.9	100.0
A1	11.6	52.1	22.1	85.9	13.5	60.7	25.8	100.0
A2	12.2	54.8	22.1	89.1	13.7	61.5	24.8	100.0
A3	12.8	57.5	22.1	92.4	13.9	62.2	24.0	100.0
B1	11.0	49.6	22.1	82.7	13.3	59.9	26.8	100.0
B2	11.6	52.2	22.1	86.0	13.5	60.7	25.7	100.0
B3	12.2	54.9	22.1	89.3	13.7	61.5	24.8	100.0

Note: Absolute values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

To fully understand the impact of migration flows, the dependency ratios should be considered. Starting from the demographic indicator (Table A5), in the absence of migration, the TDR is projected to increase from 518 to 719 in 2030. In all scenarios with migration, the 2030 values are much lower, ranging between a minimum of 608 and a maximum of 670. What is interesting is that this result derives from a lower increase in the elderly dependency ratio.

Table A5: Germany's demographic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	YDR	ODR	TDR
2015			
	196	322	518
2030			
No migration	222	496	719
A1	223	425	648
A2	223	404	627
A3	223	385	608
B1	223	447	670
B2	223	424	647
B3	223	403	626

Source: Elaboration on UN DESA, 2015 and ILO data.

According to the economic indicator of dependency, (Table A6) in 2015, 1,000 employed had to support, alongside themselves, 994 dependants, a much lower value than the European Union average. The major group of dependants is represented by the elderly, at 42.6 per cent, followed by the inactive (26.7%) and the young (25.8%), with the unemployed representing only 4.9 per cent. In 15 years, allowing for migrants to compensate the natural labour shortage, the increase in the number of dependants would be quite limited, the 2030 total economic dependency ratios ranging between a minimum of 970 in Scenario B3 (a value below the 2015 level) and a maximum of 1,122 in Scenario A1. The result is the balance between an increase in the number of the young, and especially of the elderly, which is only partially compensated by a decline in the number of the unemployed and the inactive in working age.

Table A6: Germany's economic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
2015									
	994	257	48	265	424	25.8	4.9	26.7	42.6
2030									
A1	1,122	287	28	260	547	25.6	2.5	23.2	48.8
A2	1,078	285	19	258	516	26.4	1.8	23.9	47.9
A3	1,039	283	12	256	489	27.2	1.1	24.6	47.0
B1	1,045	273	41	184	547	26.1	3.9	17.6	52.4
B2	1,005	271	35	183	516	27.0	3.5	18.2	51.4
B3	970	270	30	182	489	27.8	3.1	18.7	50.4

Source: Elaboration on UN DESA, 2015 and ILO data.

Italy

The labour market situation in Italy is extremely different to that of Germany. It is important to recall that the Italian employment rate (57.4%) is 18.7 percentage points lower than the German one, while the unemployment rate (12.1%) is 7.5 percentage points higher. It can be recalled that between 2008 and 2015, employment declined by 1.35 million, while the WAP declined by 896,000 and the labour force remained constant. These trends produced a high participation rate (65.4%), which is, however, still 8.9 points lower than the European average. What Germany and Italy have in common is an extraordinary decline in WAP that, in the case of Italy, is equal to -4.5 millions (-12.5%) over the 2015–2030 period (Table A7).

Table A7: Italy's WAP, labour force and employment in 2015 and in alternative hypothesis of labour force participation and employment growth in 2030

	WAP	Labour force		Employment		
		A	B	1	2	3
2015	38.2	25.0	25.0	21.9	21.9	21.9
2030	33.4	21.8	23.4	21.9	23.3	24.6
2015–2030						
Absolute change	-4.8	-3.1	-1.6	0.0	1.3	2.6
Yearly average change (thousands)	-319	-208	-105	0	88	176

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The expected migration balance for the period in consideration ranges between a minimum of 1.7 million (Scenario B1, growing rate of participation and stable employment level) and a maximum of 6.3 million (Scenario A3, constant rate of participation and an average yearly growth in employment by 324,000 jobs per year) (Table A8). The most probable scenario would place the migration balance at around 269,000 people per year.

Table A8: Italy's labour shortage and migration balance in six scenarios of labour participation and employment growth in the period 2015–2030

	Scenarios					
	A1	A2	A3	B1	B2	B3
Labour shortage	-3.1	-4.4	-5.8	-1.6	-2.9	-4.2
Migration balance	3.4	4.9	6.3	1.7	3.2	4.6

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

In the case of Italy, WAP is projected to increase only in Scenario A3 and the labour force in scenarios A3, B2 and B3 (Table A9). The most interesting point here, however, is that in spite of migration flows, unemployment and the RoU are expected to decline in all scenarios. Certainly, the phenomenon is more pronounced the higher the growth in employment.

Table A9: Italy's main labour market variables (value in million) and main labour market indicators in 2015 and in six scenarios of labour force participation and employment growth in 2030

	WAP	Labour force	Employment	Unemployment	RoA	RoE	RoU
2015							
	38.2	25.0	21.9	3.0	65.4	57.4	12.1
2030							
A1	36.9	24.1	21.9	2.1	65.4	59.5	8.9
A2	38.3	25.0	23.3	1.8	65.4	60.7	7.1
A3	39.7	26.0	24.6	1.4	65.4	61.8	5.4
B1	35.1	24.6	21.9	2.7	70.0	62.4	10.8
B2	36.6	25.6	23.3	2.4	70.0	63.5	9.2
B3	38.0	26.6	24.6	2.1	70.0	64.6	7.7

Note: Main labour market variables are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

With regard to demographic trends, in the absence of migration, the total population would decline by 2.5 million as a balance between, on the one hand, an increase by 3.5 million in the number of the elderly, and on the other, a decline of 4.8 million in WAP and of 1.2 million in the number of the young (Table A10). The total population increases in all scenarios. As usual, the increase is directly related to the rate of growth in employment and inversely related to the rate of participation. This is due to the impact of migration on both WAP and the number of births. Also, in the case of Italy, it is evident that migration reduces the unavoidable increase of the percentage of the elderly.

Table A10: Italy's population by main age group in 2015 and in six scenarios of labour force participation and employment growth in 2030

	0-14	15-64	65+	Total	0-14	15-64	65+	Total
2015								
	8.2	38.2	13.4	59.8	13.7	63.9	22.4	100.0
2030								
No migration	7.0	33.4	16.9	57.3	12.2	58.3	29.4	100.0
A1	7.8	36.9	16.9	61.5	12.6	59.9	27.4	100.0
A2	8.1	38.3	16.9	63.3	12.8	60.5	26.7	100.0
A3	8.4	39.7	16.9	65.0	12.9	61.1	25.9	100.0
B1	7.4	35.1	16.9	59.4	12.4	59.2	28.4	100.0
B2	7.7	36.6	16.9	61.2	12.6	59.8	27.6	100.0
B3	8.0	38.0	16.9	62.9	12.8	60.4	26.8	100.0

Note: Absolute values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

In terms of the social burden, the demographic indicators signal a modest impact of migration, so that from 2015 to 2030, the TDR is projected to increase in all scenarios, less than in the absence of migration, but by at least 71 points due to the increase of the elderly dependency ratio and the stability of the youth dependency ratio (Table A11).

Table A11: Italy's demographic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	YDR	ODR	TDR
2015			
	215	351	565
2030			
No migration	209	505	714
A1	211	458	668
A2	211	440	652
A3	212	424	636
B1	210	480	690
B2	211	461	672
B3	211	443	655

Source: Elaboration on UN DESA, 2015 and ILO data.

The economic indicators present a different situation (Table A12). In 2015, 1,000 Italian workers supported 1,726 people, 442 more than the European Union average and 731 more than 1,000 German workers. In all scenarios but one the total number of people supported is projected to decline, the amount being directly related to employment growth and inversely related to the rate of participation. Moreover, migration would notably reduce the differential with the European Union and with Germany.

Table A12: Italy's economic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
2015									
	1,726	374	138	603	611	21.7	8.0	35.0	35.4
2030									
A1	1,803	354	98	582	769	19.6	5.4	32.3	42.6
A2	1,720	348	76	571	725	20.2	4.4	33.2	42.2
A3	1,647	343	57	561	686	20.8	3.5	34.0	41.7
B1	1,707	337	121	481	769	19.7	7.1	28.1	45.0
B2	1,630	332	102	472	725	20.3	6.2	29.0	44.5
B3	1,562	327	84	464	686	20.9	5.4	29.7	44.0

Source: Elaboration on UN DESA, 2015 and ILO data.

Poland

Among the EU28 member countries, Poland registers the third highest expected decline in WAP (-3 million, -11.3%) after Germany and Italy (Table A13), following a trend that began in 2010 and which has led Poland's WAP to lose 756,000 people in working age (-2.7%) over a period of five years. In this time, employment has notably increased. As a consequence of both trends, the employment rate has passed from 60.1 per cent to 64.4 per cent. The RoU is at 7.4 per cent, well below the European Union average (Table A15).

Table A13: Poland's WAP, labour force and employment in 2015 and in alternative hypothesis of labour force participation and employment growth in 2030

	WAP	Labour force		Employment		
		A	B	1	2	3
2015	26.8	18.7	18.7	17.3	17.3	17.3
2030	23.8	16.6	17.9	17.3	18.3	19.4
2015–2030						
Absolute change	-3.0	-2.1	-0.8	0.0	1.0	2.1
Yearly average change (thousands)	-203	-141	-55	0	69	138

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

According to the projections, the migration balance of Poland will range between a minimum of 0.9 million in Scenario B1 and a maximum of 4.6 million in Scenario A3 (Table A14), the most probable yearly migration balance being 184,000.

Table A14: Poland's labour shortage and migration balance in six scenarios of labour participation and employment growth in the period 2015–2030

	Scenarios					
	A1	A2	A3	B1	B2	B3
Labour shortage	-2.1	-3.2	-4.2	-0.8	-1.9	-2.9
Migration balance	2.3	3.5	4.6	0.9	2.0	3.2

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

WAP increases in all scenarios but B1 and, as usual, the growth in WAP is positively related to employment growth and negatively related to the participation rate. The unemployment rate is estimated to decline in all scenarios (Table A15).

Table A15: Poland's main labour market variables and main labour market indicators in 2015 and in six scenarios of labour force participation and employment growth in 2030

	WAP	Labour force	Employment	Unemployment	RoA	RoE	RoU
2015							
	26.8	18.7	17.3	1.4	69.6	64.4	7.4
2030							
A1	26.1	18.2	17.3	0.9	69.6	66.2	4.8
A2	27.3	19.0	18.3	0.6	69.6	67.2	3.3
A3	28.4	19.8	19.4	0.4	69.6	68.2	2.0
B1	24.7	18.5	17.3	1.2	75.0	70.0	6.6
B2	25.8	19.4	18.3	1.1	75.0	70.9	5.4
B3	27.0	20.2	19.4	0.9	75.0	71.8	4.3

Note: Main labour market variables are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The impact of migration on WAP and on the number of births determines a notable increase in total population, and again, the increase is directly related to employment growth and inversely related to the rate of participation (Table A16).

Table A16: Poland's population by main age group in 2015 and in six scenarios of labour force participation and employment growth in 2030

	0-14	15-64	65+	Total	0-14	15-64	65+	Total
2015								
	5.8	26.8	6.0	38.6	14.9	69.5	15.5	100.0
2030								
No migration	4.9	23.8	8.6	37.3	13.2	63.8	23.0	100.0
A1	5.5	26.1	8.6	40.2	13.6	65.0	21.4	100.0
A2	5.7	27.3	8.6	41.6	13.7	65.6	20.7	100.0
A3	6.0	28.4	8.6	43.0	13.9	66.1	20.0	100.0
B1	5.1	24.7	8.6	38.4	13.3	64.3	22.4	100.0
B2	5.4	25.8	8.6	39.8	13.5	64.9	21.6	100.0
B3	5.6	27.0	8.6	41.2	13.7	65.4	20.9	100.0

Note: Absolute values are in millions.

Source: Elaboration on UN DESA, 2013a and ILO data.

Once again, the demographic dependency ratios signal a deterioration of the socioeconomic situation, with migration having some positive effects, while being unable to solve the problem of ageing (Table A17).

Table A17: Poland's demographic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	YDR	EDR	TDR
2015			
	215	223	438
2030			
No migration	207	361	568
A1	209	329	538
A2	209	315	525
A3	210	303	513
B1	208	348	556
B2	208	333	541
B3	209	319	528

Source: Elaboration on UN DESA, 2015 and ILO data.

The situation presented by the economic indicator is more differentiated and shows that the number of dependants will decline only in Scenarios A3, B1, B2 and B3, the social burden being negatively related to employment growth and positively related to the participation rate (Table A18).

Table A18: Poland's economic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
2015									
	1,232	334	79	472	347	27.1	6.5	38.3	28.1
2030									
A1	1,323	315	51	460	497	23.8	3.8	34.8	37.6
A2	1,268	311	35	453	469	24.6	2.7	35.7	37.0
A3	1,219	308	20	447	444	25.3	1.7	36.6	36.4
B1	1,222	297	71	357	497	24.3	5.8	29.2	40.7
B2	1,173	294	57	352	469	25.1	4.9	30.0	40.0
B3	1,129	291	45	348	444	25.8	4.0	30.9	39.4

Source: Elaboration on UN DESA, 2015 and ILO data.

Spain

Spain is one of the European Union countries that was most severely hit by the 2008 financial crisis. From 2007 to 2013, employment fell by almost 3.5 million, while unemployment passed the 6-million mark. It was at 1.8 million in 2007. However, Spain has already started to recover: from 2013 to 2015, employment grew by 560,000, and unemployment fell by 937,000. The economic crisis did also impact on the WAP that declined by 1.2 million from 2010 to 2015.

In the next 15 years, the WAP is expected to decline by 2.8 million (-9.2%), which implies a labour force notably in decline even in the case of an increase in participation up to 80 per cent (Table A19).

Table A19: Spain's WAP, labour force and employment in 2015 and in alternative hypothesis of labour force participation and employment growth in 2030

	WAP	Labour force		Employment		
		A	B	1	2	3
2015	30.6	22.9	22.9	17.8	17.8	17.8
2030	27.8	20.8	22.2	17.8	18.8	19.9
2015–2030						
Absolute change	-2.8	-2.1	-0.7	0.0	1.1	2.1
Yearly average change (thousands)	-188	-141	-47	0	71	142

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The migration balance is projected to range between a minimum of 0.8 million in Scenario B1 and 4.7 million in Scenario A3. In the usual intermediate scenario, the yearly migration balance is estimated to be around 181,000 (Table A20).

Table A20: Spain's labour shortage and migration balance in six scenarios of labour participation and employment growth in the period 2015–2030

	Scenarios					
	A1	A2	A3	B1	B2	B3
Labour shortage	-2.1	-3.2	-4.2	-0.7	-1.8	-2.8
Migration balance	2.3	3.5	4.7	0.8	1.9	3.1

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The changes in WAP and LF are expected to be not very significant, with some minor positive changes expected only in Scenarios A2, A3, B2 and B3 (Table A21). In all scenarios, the RoU declines according to the usual pattern. However, the estimates show that even the highest envisaged rates of growth in employment are not sufficient consistently to reduce the level of unemployment.

Table A21: Spain's main labour market variables and main labour market indicators in 2015 and in six scenarios of labour force participation and employment growth in 2030

	WAP	Labour force	Employment	Unemployment	RoA	RoE	RoU
2015							
	30.6	22.9	17.8	5.1	74.9	58.1	22.4
2030							
A1	30.1	22.6	17.8	4.8	74.9	59.1	21.2
A2	31.3	23.4	18.8	4.6	74.9	60.3	19.6
A3	32.4	24.3	19.9	4.4	74.9	61.4	18.1
B1	28.5	22.8	17.8	5.1	80.0	62.3	22.2
B2	29.7	23.8	18.8	4.9	80.0	63.4	20.7
B3	30.9	24.7	19.9	4.8	80.0	64.4	19.4

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

Furthermore, demographic trends follow the usual pattern: the total population will increase in all scenarios, while migration reduces the decline in the shares of the WAP and of the young (Table A22).

Table A22: Spain's population by main age group in 2015 and in six scenarios of labour force participation and employment growth in 2030

	0–14	15–64	65+	Total	0–14	15–64	65+	Total
2015								
	6.9	30.6	8.7	46.1	14.9	66.3	18.8	100.0
2030								
No migration	5.4	27.8	11.8	45.0	12.0	61.7	26.2	100.0
A1	5.9	30.1	11.8	47.8	12.4	62.9	24.7	100.0
A2	6.2	31.3	11.8	49.3	12.6	63.5	23.9	100.0
A3	6.5	32.4	11.8	50.7	12.8	64.0	23.3	100.0
B1	5.6	28.5	11.8	45.9	12.2	62.2	25.7	100.0
B2	5.9	29.7	11.8	47.4	12.4	62.7	24.9	100.0
B3	6.1	30.9	11.8	48.8	12.5	63.3	24.2	100.0

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The evolution of the demographic dependency ratios follows the patterns shown in other sample countries, with migration reducing the socioeconomic burden that would prevail in the absence of migrants. The impact concerns the number of elderly, with the number of the young registering some minor positive changes due to the inflow of women who are in a fertile age (Table A23).

Table A23: Spain's demographic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	YDR	EDR	TDR
2015			
	224	283	508
2030			
No migration	195	424	619
A1	197	392	589
A2	198	377	575
A3	199	363	563
B1	196	413	609
B2	197	397	594
B3	198	382	580

Source: Elaboration on UN DESA, 2015 and ILO data.

In 2015, the TEDR is almost as high as the one registered by Italy, a high value due mainly to the extremely high number of unemployed and inactive (Table A24). According to the scenarios, the total ratio will improve in Scenario A3, as well as in scenarios B1, B2 and B3, in which the increase in the ratio for the elderly is more than offset by the decline in all other indicators. As in the case of Italy, migration would produce a decline in the differential with the European Union and Germany.

Table A24: Spain's economic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
2015									
	1,594	386	289	431	487	24.2	18.1	27.1	30.6
2030									
A1	1,690	334	269	425	663	19.8	15.9	25.1	39.2
A2	1,614	329	243	416	626	20.4	15.1	25.8	38.8
A3	1,546	325	221	409	592	21.0	14.3	26.4	38.3
B1	1,583	314	285	321	663	19.9	18.0	20.3	41.9
B2	1,514	311	262	315	626	20.5	17.3	20.8	41.3
B3	1,451	307	241	310	592	21.2	16.6	21.4	40.8

Source: Elaboration on UN DESA, 2015 and ILO data.

United Kingdom

In the United Kingdom, the impact of the 2008 financial crisis has been modest. From 2008 to 2010, the level of employment declined by around 360,000 and then increased by almost 2 million in the following five years, while unemployment declined by almost 1 million with respect to the 2010 maximum. The WAP has been on a positive trend since 1990, but in the last years, the growth has been quite moderate. As a result of these trends, all major labour market indicators have been improving since 2012.

The decline in WAP forecast for the United Kingdom (Table A25), a country that has been receiving migrants for a long time and has therefore profited from their relatively higher fertility, is projected to be quite limited (-1.1 million, -2.7%), so that in the scenario with stable employment and increasing participation (B1), there is a surplus in labour supply and therefore a negative migration balance (Scenario B1).⁵⁴

Table A25: United Kingdom's WAP, labour force and employment in 2015 and in alternative hypothesis of labour force participation and employment growth in 2030

	WAP	Labour force		Employment		
		A	B	1	2	3
2015	41.7	33.4	33.4	31.5	31.5	31.5
2030	40.6	32.4	34.5	31.5	33.4	35.3
2015–2030						
Absolute change	-1.1	-0.9	1.1	0.0	1.9	3.8
Yearly average change (thousands)	-76	-61	76	0	126	252

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

In the other scenarios, the migration balance is forecast to range between a minimum of 0.8 million in Scenario B2 and 5.2 million in Scenario A3 (Table A26). Therefore, according to the usual intermediate “most probable scenario”, the United Kingdom migration balance is projected to be around 130,000 per year.

⁵⁴ The model assumes that this will cause a negative migration.

Table A26: United Kingdom's labour shortage and migration balance in six scenarios of labour participation and employment growth in the period 2015–2030

Scenarios						
	A1	A2	A3	B1	B2	B3
Labour shortage	-0.9	-2.8	-4.7	1.1	-0.8	-2.6
Migration balance	1.0	3.1	5.2	-1.2	0.8	2.9

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

WAP and the labour force are projected to increase in scenarios A2, A3 and B3 that assume positive changes in the employment level, while unemployment and the unemployment rate will decline in all scenarios but B1 (Table A27).

Table A27: United Kingdom's main labour market variables and main labour market indicators in 2015 and in six scenarios of labour force participation and employment growth in 2030

	WAP	Labour force	Employment	Unemployment	RoA	RoE	RoU
2015							
	41.7	33.4	31.5	1.8	80.0	75.6	5.5
2030							
A1	41.6	33.2	31.5	1.7	80.0	75.8	5.2
A2	43.7	34.9	33.4	1.5	80.0	76.5	4.3
A3	45.7	36.6	35.3	1.3	80.0	77.2	3.4
B1	39.3	33.4	31.5	1.9	85.0	80.2	5.7
B2	41.4	35.2	33.4	1.8	85.0	80.7	5.0
B3	43.5	37.0	35.3	1.7	85.0	81.2	4.5

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

In the case of the United Kingdom, the total population is projected to increase in the absence of migration due to an expansion in the number of the elderly (+3.4 million); this would more than offset the modest decline of WAP (-1.1 million) (Table A28). Once migration is taken into account, the growth in total population is projected to be much more pronounced, mainly due to the impact on WAP.

Table A28: United Kingdom's population by main age group in 2015 and in six scenarios of labour force participation and employment growth in 2030

	0-14	15-64	65+	Total	0-14	15-64	65+	Total
2015								
	11.5	41.7	11.5	64.7	17.8	64.5	17.8	100.0
2030								
No migration	11.5	40.6	14.9	67.0	17.1	60.6	22.3	100.0
A1	11.7	41.6	14.9	68.2	17.1	61.0	21.9	100.0
A2	12.2	43.7	14.9	70.7	17.2	61.7	21.1	100.0
A3	12.6	45.7	14.9	73.3	17.2	62.4	20.4	100.0
B1	11.2	39.3	14.9	65.4	17.1	60.1	22.8	100.0
B2	11.7	41.4	14.9	68.0	17.1	60.9	22.0	100.0
B3	12.1	43.5	14.9	70.5	17.2	61.7	21.2	100.0

Note: Absolute values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

Also in the United Kingdom, a significant increase in the percentage of the elderly determines an increase in the ODR and therefore in the TDR. As with the countries previously analysed, migrations have a positive effect on the ODR, and therefore also on the total indicator (Table A29).

Table A29: United Kingdom's demographic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	YDR	EDR	TDR
2015			
	276	276	551
2030			
No migration	283	368	650
A1	281	359	640
A2	278	342	620
A3	276	326	602
B1	284	380	664
B2	281	361	642
B3	279	343	622

Source: Elaboration on UN DESA, 2015 and ILO data.

The economic indicator shows that in the United Kingdom, 1,000 workers support, alongside themselves, 1,053 dependants, a value close to that of Germany and well below the European Union's average. This enables the observation that the demographic indicators of the countries analysed are quite close to each other and not of the magnitude that is expected, therefore failing to capture and portray the socioeconomic situation of the various countries. This result is, on the contrary, achieved by the demographic indicator that puts the countries in the expected order on the basis of their economic performance and perceived situation. It is now observed that in the United Kingdom, the total ratio increases, though in quite a limited way, in the scenarios with constant participation and in Scenario B1, while declining in the scenarios B2 and B3 in which the growth in employment more than offset the growth in total population (Table A30).

Table A30: United Kingdom's economic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
2015									
	1,053	365	58	265	365	34.7	5.5	25.2	34.6
2030									
A1	1,163	371	54	264	474	31.9	4.7	22.7	40.7
A2	1,117	364	45	262	447	32.6	4.0	23.4	40.0
A3	1,076	358	36	260	423	33.2	3.3	24.1	39.3
B1	1,076	355	60	187	474	33.0	5.6	17.4	44.0
B2	1,034	349	53	186	447	33.7	5.1	18.0	43.2
B3	998	343	47	185	423	34.4	4.7	18.5	42.4

Source: Elaboration on UN DESA, 2015 and ILO data.

France

France is the final country in the sample. France too has not been particularly affected by the financial crisis. The employment level has remained substantially constant, while registering moderate short-term oscillations; however, the level of unemployment has increased by more than 1 million between 2008 and 2015. The increase has been mainly due to an increase in the rate of participation since the level of WAP has remained constant. Both phenomena are probably explained by the arrival of migrants with a lower average age and a higher propensity to be in the labour market.

The drop in WAP over the next 15 years is expected to be quite modest at 1.1 million (Table A31), just 2.8 per cent, so that the increase of around 5 percentage points in the rate of participation assumed is sufficient to produce a situation of excess labour supply, and therefore a negative migration balance, in Scenario B1.

Table A31: France's WAP, labour force and employment in 2015 and in alternative hypothesis of labour force participation and employment growth in 2030

	WAP	Labour force		Employment		
		A	B	1	2	3
2015	40.2	29.0	29.0	25.9	25.9	25.9
2030	39.1	28.2	30.1	25.9	27.5	29.0
2015–2030						
Absolute change	-1.1	-0.8	1.1	0.0	1.6	3.1
Yearly average change (thousands)	-75	-54	73	0	104	207

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

In the other scenarios, the migration balance is estimated to have a value of between 0.5 million in Scenario B2 and a maximum of 4.3 million in Scenario A3, the most probable value being around an average long-term value of 103,000 (Table A32).

Table A32: France's labour shortage and migration balance in six scenarios of labour participation and employment growth in the period 2015–2030

	Scenarios					
	A1	A2	A3	B1	B2	B3
Labour shortage	-0.8	-2.4	-3.9	1.1	-0.5	-2.0
Migration balance	0.9	2.6	4.3	-1.2	0.5	2.2

Note: Values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

WAP and the labour force are projected to decline in Scenarios A1, B1 and B2 and increase in the others, while unemployment is expected to increase only in Scenario B1 (Table A33).

Table A33: France's main labour market variables (value in million) and main labour market indicators in 2015 and in six scenarios of labour force participation and employment growth in 2030

	WAP	Labour force	Employment	Unemployment	RoA	ROE	ROU
2015							
	40.2	29.0	25.9	3.1	72.1	64.5	10.6
2030							
A1	39.9	28.8	25.9	2.9	72.1	64.9	10.0
A2	41.7	30.0	27.5	2.6	72.1	66.0	8.6
A3	43.4	31.3	29.0	2.2	72.1	66.9	7.2
B1	37.9	29.1	25.9	3.2	77.0	68.5	11.1
B2	39.6	30.5	27.5	3.0	77.0	69.4	9.8
B3	41.3	31.8	29.0	2.8	77.0	70.3	8.7

Note: Main labour market variables are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

In France, as in other countries with a significant previous immigration, the total population would increase even in the absence of migration, since the small decline in the number of the young and of WAP is more than offset by the growth in the number of the elderly. Obviously, this phenomenon is enhanced by migration, which has a positive impact not only on WAP but also on the number of the young (Table A34).

Table A34: France's population by main age group in 2015 and in six scenarios of labour force participation and employment growth in 2030

	0-14	15-64	65+	Total	0-14	15-64	65+	Total
2015								
	11.9	40.2	12.3	64.4	18.5	62.4	19.1	100.0
2030								
No migration	11.3	39.1	16.2	66.5	16.9	58.7	24.4	100.0
A1	11.5	39.9	16.2	67.6	17.0	59.1	24.0	100.0
A2	11.9	41.7	16.2	69.7	17.0	59.7	23.2	100.0
A3	12.2	43.4	16.2	71.8	17.1	60.4	22.6	100.0
B1	11.0	37.9	16.2	65.1	16.9	58.2	24.9	100.0
B2	11.4	39.6	16.2	67.2	17.0	58.9	24.1	100.0
B3	11.8	41.3	16.2	69.3	17.0	59.6	23.4	100.0

Note: Absolute values are in millions.

Source: Elaboration on UN DESA, 2015 and ILO data.

The indicators for the social burden reinforce what was already stated for the other countries. The demographic index shows that migration can reduce the number of elderly for 1,000 people in working age (Table A35).

Table A35: France's demographic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	YDR	EDR	TDR
2015			
	296	306	603
2030			
No migration	289	415	704
A1	287	406	693
A2	285	389	674
A3	282	374	656
B1	291	428	719
B2	288	410	698
B3	285	393	678

Source: Elaboration on UN DESA, 2015 and ILO data.

It can be observed that the TEDR of France is not only higher than the European Union average, but also above the value registered by Poland, and in addition is not very far from the value registered in Spain. The interesting point is that this value is due to the presence of a high percentage of young people, which is an important point to keep in mind when evaluating this indicator (Table A36). In the next 15 years, the TEDR is expected to increase in all scenarios apart from those characterized by a high increase in employment.

Table A36: France's economic dependency ratios in 2015 and in six scenarios of labour force participation and employment growth in 2030

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
2015									
	1,484	459	118	432	475	30.9	7.9	29.1	32.0
2030									
A1	1,609	443	112	430	625	27.5	6.9	26.7	38.9
A2	1,538	432	94	423	590	28.1	6.1	27.5	38.4
A3	1,474	422	77	416	558	28.6	5.3	28.3	37.9
B1	1,510	425	124	336	625	28.1	8.2	22.2	41.4
B2	1,444	415	109	331	590	28.7	7.5	22.9	40.8
B3	1,386	406	95	327	558	29.3	6.8	23.6	40.3

Source: Elaboration on UN DESA, 2015 and ILO data.

THE EDUCATION MIGRATION FUND⁵⁵

Migrants bring with them a “capital” of abilities that is not only the result of their own personal investment, but also of the public investments in their countries of origin. In effect, for the receiving country’s system of production, the arrival of a migrant corresponds to the free acquisition of a factor of production, something that represents a non-competitive advantage. This is certainly true only if and when the migrant worker is needed, that is, when the services he/she can provide are essential and do not have a substitute in the arrival country. It is argued that this situation exists and will persist for long time in European Union countries. It can be recalled that Dustmann and Frattini estimated that between 1995 and 2011, migrants endowed the United Kingdom labour market with GBP 49 billion in human capital (14 billion from European migrants and 35 billion from non-European migrants).⁵⁶

This aspect of migration has been largely overlooked because migrations are still predominantly explained from the supply side, with migrants being viewed as people running away from misery and deprivation, as unskilled and with low education, and if educated and skilled, then they are seen as people in search of a higher income and better life.

If this perspective is abandoned to realistically accept that in an increasing number of countries, the internally produced labour is insufficient to carry on and expand production (as also suggested in the study by Bonin), then these countries need to acquire labour from other countries in the same way as they need to acquire raw materials and capital goods. It logically follows that arrival countries should “pay” for each migrant who is going to have a job position, a price proportional to their education and skill level and at least equal to the cost the departure country has supported to educate and train the migrant.

Numerous factors suggest that the problem cannot be addressed through bilateral agreements. What the author proposes is the creation of an Education Migration Fund (EMF),⁵⁷ which would be in charge of activating an appropriate

55 This idea was first introduced in Bruni (2012) and then in 2013.

56 In other words, this is the amount of money that it would have cost the United Kingdom to produce an equivalent amount of human capital.

57 It must be stressed that the proposal for an Education Migration Fund is completely different from the so-called Bhagwati tax, which represents a typical expression of a supply-side vision of the migration process. The Bhagwati and Dellafar proposal (Bhagwati and Dellafar (1973); Bhagwati and Hamada (1974, 1975) in fact called for a tax on the incomes of highly educated migrants, professionals, such as doctors and engineers, and referred only to the brain drain.

and equitable transfer of money from rich arrival countries to poor departure countries, to be invested in the most important basis of economic growth and social development – education.

In assessing this proposal, the following should be kept in mind:

- (a) The need for foreign labour in European Union countries will be substantial for at least 50 years;
- (b) Population explosion will make more and more difficult, if not impossible, the development of countries where the excess of labour supply will be progressively concentrated (among which are also Middle East and North Africa countries);
- (c) Migrants represent a depletion of the knowledge base of departure countries; and
- (d) A more educated and better trained labour force is the key to economic growth.

Therefore, the creation and correct utilization of an EMF could activate a significant, appropriate and equitable transfer of money, from the rich to the poor countries, to be invested in education, the most important factor in economic growth and social development.

It should also be considered that:

- (a) Locating and maintaining the education and training process in developing countries would relatively have a much lower cost than in developed countries;
- (b) The training should be addressed to occupations relevant not only for the arrival country, but also for the departure country with notable returns to scale; and
- (c) It would imply the transfer of education methodology and techniques that could improve the education and training system of departure countries.

It is evident that even if accepted at the theoretical level, the implementation of this proposal would face a set of complicated issues that the paper cannot address in a comprehensive manner.

The first issue would be estimating the labour and training needs of arrival countries and their “value”. The proposal suggests that these tasks could be entrusted to the Labour Migration Observatory proposed by this paper.

It is then envisaged that the constitution of the EMF proper could be entrusted to UNESCO. The EMF would then be in charge of collecting the payments from arrival countries, and directing them to the departure countries, after having decided together the objectives that should be pursued. It would also be in charge of controlling the correct utilization of the funds directed to building new schools, improving the existing buildings, training the teachers, providing equal opportunities, and promoting gender equality, in coordination with the industrial and macroeconomic policies required to start an economic catching-up process for the departure countries.

The Mediterranean basin could represent an ideal testing ground for this programme.

THE STRUCTURAL BURDEN

The implication of the decline in fertility that has most attracted the attention of economists and politicians is represented both by ageing and by its consequences on welfare systems. It has been argued that the perception surrounding the gravity of this problem has been distorted through the use of demographic indicators, in which the measuring rod is provided by the WAP, which in fact does normally include a large number of dependants. No real solution is achieved by substituting WAP with the labour force, as done by Carone and the members of CEFMR, since the labour force includes the unemployed and is not a policy variable.

The choice of an economic indicator that “measures” the structural burden in relation to employment shows that in 2015, 1,000 workers in the European Union maintained 1,283 dependants alongside themselves. It is also seen that just a little more than a third of the dependants is represented by the elderly, with a higher percentage represented by the sum of the inactive (29.7%) and the unemployed (8.1%). The contribution of the young is 27.4.

Table A37: European Union, some European Union countries and Egypt’s economic indicators of social burden, absolute values and percentage composition; 2015

	TEDR	YEDR	UEDR	IEDR	OEDR	YEDR	UEDR	IEDR	OEDR
EU28	1,283	353	104	382	444	27.5	8.1	29.8	34.6
Germany	994	257	48	265	424	25.8	4.9	26.7	42.6
United Kingdom	1,053	365	58	265	365	34.7	5.5	25.2	34.6
Poland	1,232	334	79	472	347	27.1	6.5	38.3	28.1
France	1,484	459	118	432	475	30.9	7.9	29.1	32.0
Spain	1,594	386	289	431	487	24.2	18.1	27.1	30.6
Italy	1,726	374	138	603	611	21.7	8.0	35.0	35.4
Max-Min	731	202	241	338	264	13.0	13.3	13.1	14.5
Egypt	2,610	1,113	173	1,110	214	42.7	6.6	42.5	8.2

Source: Elaboration on UN DESA, 2013a and ILO data.

The values in the six European Union countries considered range between a minimum of 994 in Germany and a maximum of 1,726 in Italy. Only Germany and the United Kingdom show that the share of the elderly is larger than the joint share of the inactive and unemployed.

Germany presents a number of elderly similar to the European Union average; the difference between the totals is due to the young, but especially due to the unemployed and the inactive. The other country with a TEDR below the European Union average is the United Kingdom, but in this case, the difference is accounted for by the unemployed, the inactive and especially the elderly. Turning to Italy, the difference from the European Union average is accounted for by the elderly, but especially by the inactive, which is explained by the extremely low participation rate that characterizes the Italian labour market.

The socioeconomic situation of Egypt is well captured by the value of the economic dependency ratio (2,610), which is more than double that of the European Union. As might have been expected, the difference from the European Union is accounted for mainly by the number of the young and the inactive, while the number of elderly is less than half of that of Europe.

An intuitive implication of the economic indicator is that the structural burden is not generated only by demographic trends, but also by economic trends. In fact, according to this indicator, the structural burden increases only if the rate of growth of the dependants is higher than the rate of growth of employment, and this is true also for the specific indicator associated with the elderly. Moreover, an increase in the employment rate has an indirect positive impact on the structural burden since it reduces the number of the inactive.

In keeping with this, the analysis has shown that in the European Union and in all the countries considered, the increase in the TEDR is inversely related to the growth in employment and the participation rate. In Egypt, the change in the TDR is also inversely related to the amount of emigration.

Given these general indications, it must be remembered that in European Union countries, the higher the rate of growth of employment, the higher the net inflow of migrants and the larger their future impact on the number of elderly will be. This suggests that the dynamic of the structural burden should not be considered as a variable to be forecasted, but as a policy target to be defined together with the growth in employment.

Within this frame, a relevant reduction in the structural burden, as a result of the elderly, can be obtained from redefining the working age. The present definition of working age, being between 15 and 64, is already unrealistic, and its use in analysing the structural burden in 2050 is wholly unrealistic. In all developed countries, the average age of entry into the working phase of life is already above 20. At the same time, life expectancy will notably increase. Although there is no scholarly agreement on the question of whether or not human life has a physiological upper limit, it would seem realistic to assume, on the basis of the most recent trends, that it will continue to increase in the next 50 years. The author's personal prediction is that by 2050, the working age should and will be defined as between 25 and 75 years of age. This implies that at that point, the most significant group of dependants will almost certainly be represented not by the elderly, but by young people in the training phase of life.

THE DEMOGRAPHIC DISEQUILIBRIUM

A fertility rate below replacement level does lead to the progressive decline of a closed population and eventually to its disappearance.⁵⁸ If the proposed migration model is correct, the ultimate result of fertility decline will be completely different: the WAP and the total population will increase due to inflows of migrants. The inevitable by-product will be a progressive expansion of the population born abroad and the creation of a multi-ethnic society.

This event has been evaluated in very distinct ways by different authors. Some have stressed the danger of a complete disappearance of the indigenous population and the consequent loss of its original identity.⁵⁹ Others have argued that this process will also have positive effects since it will reduce cultural provincialism, giving the host country a cosmopolitan dimension, and promote a healthy self-criticism. Moreover, in time, the migrants, regardless of the official position of the host country regarding integration might be, will end up identifying themselves with the country in which they live and with its history, inclusive of the enrichment process brought about by migratory flows. It has also been pointed out that in order to properly assess the effects of mass migration, not only the percentage of people born abroad should be considered, but also the cultural distance from the host country of the migrants, the level of tolerance of the host country as a result of its immigration history, the indifference to the problem generated by individualistic liberalism or by the concentration of migrants in only a few areas of the country.⁶⁰

It would seem, therefore, probable that even discounting possible positive long-term effects, the social, cultural and political impacts of mass migration will represent a serious issue that developed countries should start to consider immediately in order to devise and adopt suitable policies.

To view this problem in the right perspective, the probable duration of mass migration for the countries with below-replacement fertility should also be considered. One important implication of the model is that positive migration balances will continue to be needed not only so long as the natural balance of WAP will be negative, but also so long as the natural balance will not be sufficient to cover the manpower needs determined by the growth in employment. In

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58 Bourgeois-Pichat, 1988: 9–44.

59 Coleman, 2002 and 2000.

60 McNicoll, 2000.

other words, to avoid the social and political tension created by a structural need for foreign labour and at the same time allow for economic growth, the number of entries into WAP has to become and remain higher than the number of exits due to death and ageing, the size of the difference depending on the RoE growth. This seems to be the main long-term problem that countries characterized by below-replacement fertility will have to face.

At present, there is an almost full agreement between demographers that the TFR of developed countries will not substantially increase.⁶¹ This assumption reflects on the one hand, the hypothesis that the fertility of migrant women immediately converges with the fertility of the local women and, on the other, the fact that migration flows are largely underestimated by the standard model.

If the approach is correct, the great majority of developed countries will be affected by migration flows much more significant than those currently forecasted. In terms of the assumption of fertility convergence, it is compelling to consider the justification given by the Population Division:

The projection methodology also assumes that, after immigrants arrive in a country, they experience the average fertility and mortality conditions of that country. While this is typically not the case, especially when immigrants come from a country that differs greatly in a demographic sense from the receiving country, this assumption permits computations to be more straightforward and also facilitates comparisons between countries.⁶²

In fact, as the growing literature on the subject has shown, the relationship between migration and fertility is a complex one. The prevailing idea is that migrants' fertility will tend to converge to that of the local population. A series of alternative, though not conflicting, hypotheses have been advanced to explain this process, the most important ones being selectivity, adaptation, socialization

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61 This is clearly shown by the hypothesis on fertility on which the projection of the Population Division is based.

62 UN DESA, 2000: 15.

and disruption.⁶³ It has also been maintained that the fertility differential does not depend on nationality, but on the different socioeconomic composition of the two groups, meaning that migrant women are in general less educated and qualified than national women.

The divergent interpretations of the fertility pattern of migrant women imply different timings of the convergence, but the fact remains that for a certain period of time, possibly up to a generation, the contribution of migrant women to the number of births usually exceeds their demographic weight. Although comparative international data are lacking, the phenomenon is clearly signalled by many national statistics and local studies,⁶⁴ and it is evident that the contribution of foreign women to the level of the TFR, limited up until now because of the dimension of migration flows, could become critical. An evaluation of this phenomenon is complex and largely exceeds the capabilities of a single researcher as for every country, it involves not only scenarios more sophisticated than the ones presented here, but also hypotheses on the structure of migrants according to nationality, sex and age, and on the fertility rates and patterns of the single ethnic groups.

However, a possible outcome of the forecast, one that would seem to deserve special attention, is that countries characterized by a strong demographic decline and high employment growth would receive migration flows large enough to provide a substantial contribution to reach the number of births necessary to annul the structural need for migrants.

In conclusion, a possible implication of the analysis is that the demographic transition could after all lead to a demographic regime of equilibrium. However, this would not derive from the impact of socioeconomic factors but from migration.

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63 In the case of selectivity, the convergence is explained by the psychological and demographic characteristics of the migrants. The adaptation model is centred on the physical, economic and social constraints of the new environment. The socialization model postulates that the decline in fertility is the result of a gradual process of acculturation at the end of which migrants will adopt the local cultural models. This model, therefore, postulates that the change will span a long period of time, and that it will be completed only with the second generation. The disruption model explains the decline in fertility on the basis of numerous factors that determine a perturbation in women's reproductive behaviour such as the temporary separation of the couple, the migration stress, and the socioeconomic problems of the first year in the new environment.

64 In Italy, for example, in 2005, the TFR of Italian women was 1.24, while the TFR of foreign women was 2.41.

ECONOMIC MIGRANTS AND REFUGEES

At present, the attention of all European countries is concentrated on the dramatic efforts of thousands of refugees to either cross the Mediterranean or to fight their way along the Balkan routes. While the speculations of right-wing parties play on ignorance and lack of information to boost their political standing and gain support for xenophobic policies, the European Union has not found a way to distribute the refugees among its member countries. At the same time, a more generous behaviour is advocated by religious groups, but it is evident that such standing will not suffice to solve the problem if it is not supported by some more concrete and robust motivations at a higher political level. Even less acceptable is the idea of giving money to Turkey and African countries to contain the refugees.⁶⁵

It should be underlined that:

- In light of the previous arguments, the less than 3 million people who have arrived until now represent just a small portion of the future manpower needs of the European Union and other European countries;
- What these people need are jobs, not refugee camps; and

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65 IOM distinguishes between migrant and refugee as such:

“At the international level, no universally accepted definition for “migrant” exists. The term migrant was usually understood to cover all cases where the decision to migrate was taken freely by the individual concerned for reasons of “personal convenience” and without intervention of an external compelling factor; it therefore applied to persons, and family members, moving to another country or region to better their material or social conditions and improve the prospect for themselves or their family. The United Nations defines migrant as an individual who has resided in a foreign country for more than one year irrespective of the causes, voluntary or involuntary, and the means, regular or irregular, used to migrate. Under such a definition, those travelling for shorter periods as tourists and businesspersons would not be considered migrants. However, common usage includes certain kinds of shorter-term migrants, such as seasonal farm-workers who travel for short periods to work planting or harvesting farm products.” (IOM Glossary on Migration, 2011 edition)

Refugee is defined as: “A person who, “owing to a well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinions, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country” (Art. 1(A) (2), Convention relating to the Status of Refugees, Art. 1A (2), 1951 as modified by the 1967 Protocol). In addition to the *refugee* definition in the 1951 Refugee Convention, Art. 1(2), 1969 Organization of African Unity Convention defines a refugee as any person compelled to leave his or her country “owing to external aggression, occupation, foreign domination or events seriously disturbing public order in either part or the whole of his country or origin or nationality”. Similarly, the 1984 Cartagena Declaration states that refugees also include persons who flee their country “because their lives, security or freedom have been threatened by generalized violence, foreign aggression, internal conflicts, massive violations of human rights or other circumstances which have seriously disturbed public order” (IOM Glossary on Migration, 2011 edition).

- The simple rule suggested is to distribute them between European Union countries according to the quantitative and qualitative needs of each country.

These suggestions must however be supported by more general arguments regarding the philosophy that supports the behaviour of international organizations in charge of refugees, because it is precisely that philosophy which is applied to the refugees that arrive in Europe.

For the moment, the international organizations focus on the humanitarian needs of refugees, an attitude with clear limits, especially since it is not a sustainable solution.

The debate concerning the refugee camps, to clarify the issue, seems unable to suggest viable alternatives. It is maintained, on the one hand, that camps possess logistical advantages, but there can be no doubt that life in the camps can be extremely harsh. The main point, however, is that it is an unnatural way of life: inside the camps people are bored, restless and unhappy. As noted by Jack Byrne, director for the International Rescue Committee, camps “are not a natural social structure”.

The only real solution to the problem would be that of reintroducing the refugee families living in camps around the world, back into the productive cycle by enabling the adults to once again become productive members of society and for the children to be enrolled in normal schools.

Previous analyses have clearly shown that the economies in which the highest shares of the refugees are located today cannot create the number of jobs sufficient to achieve their economic and social integration. It is therefore evident that this goal must be pursued outside neighbouring, often relatively poor countries, and more specifically in the countries characterized by an SSL.

What is being suggested is the adoption of a more proactive attitude and intervention strategy based on the idea that refugees are potential workers, and what they really need is to be brought back into the productive cycle, possibly after receiving proper training.

The first clear advantage would be economic. Refugees represent an increasing cost – estimated at USD 3.2 billion by the United Nations in 2014 – that does not show signs that it is diminishing given the current situation in the Middle East and parts of Africa. The relocation of refugees in other countries would not only reduce the yearly level of expenditure, but possibly its duration. Moreover, the operation would transform consumption costs into investment costs.

The second would be to look for a real solution to the problem. This would imply a definitive, or at least a lasting solution, to the problem of the refugees, a solution that must necessarily involve their return to a normal life.

Clearly, there are notable obstacles that need to be surmounted, the first of which is that despite the growing statistical evidence, the concept of a structural lack of labour has not yet been accepted by international organizations, and nor even by the countries that have been in this situation for a long time.

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International Organization for Migration
47C Abu El-Feda Street, Zamalek
Cairo 11211 Egypt
Tel: +2 02 2736 5140/1 • Fax: +2 02 2736 5139
E-mail: iomegypt@iom.int • Website: www.iom.int