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Building Demography into Migration Research: Population Change and the Latent Demand for Migration in 21st Century Europe

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Abstract

Demography has not played a prominent role in the research on the causes of international population movements. At the same time, the main theoretical and empirical studies analysing causal processes triggering international migration flows have largely drawn from economic and sociological concepts and approaches, considering demographic dynamics only as contextual push factors operating in the countries of origin by putting a strain on labour markets. Yet contracting and ageing demographics in receiving countries, by shaping both domestic labour supply and demand, can also represent powerful drivers of a demand for migrant labour. By conducting a critical review of the literature, demographic data and projections, this paper looks beyond aggregate workforce trends, pointing to the importance of considering the demographic and employment pathways of specific socio-demographic groups (e.g. younger and older workers, inactive women) and bringing out labour demand in long-term care as a single, influential force driving significant migration flows in contemporary Europe. This paper also analyses the intersection of future demographic trends with possible labour market developments, discussing the extent to which different factors are likely to affect the causal links between demographic shortages and the demand for 'replacement migration' across EU countries.

Keywords: migration, demography, population decline, ageing, labour shortages, demographic projections, long-term care

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Introduction

Demography – as a discipline – has often been described as the combination of two distinct approaches: formal demography, limiting its object of study to the measurement and modelling of population processes; and social demography, investigating the causes and consequences of demographic change in its broader social, economic, cultural and political context. Until recently migration was the component of population change receiving the least attention among demographers. In particular, formal demography has long neglected migration in its core model – the theory of stable populations. Half a century ago migration was referred to as the 'step-child' of demography because it had "defied the application of refined measurements comparable to those developed in the other two fields (i.e. mortality and fertility)" (Kirk 1968: 348). Even in the mid-1990s, Caldwell (1996: 308) defined the relationship between migration studies and the rest of demography as 'ambiguous'. The less prominent role of migration in demographic research was mainly the result of its lesser influence in driving population trends – in comparison with fertility and mortality – in most historical and contemporary populations (Keely 2000; Teitelbaum 2008).

However, this is less and less the case. With few notable exceptions such as France, nowadays net migration (i.e. the balance between in- and out-migration) comprises the greater part of population growth in many European countries – sometime counterbalancing a negative natural change – and most projected future growth to mid-century (Eurostat 2008). Indeed in the last decades demographic studies have increasingly focused on international migration and its demographic, social and economic impact. A major concern of demographers has been the definition and measurement of migration and migrant populations, leading to a thriving literature on the production and assessment of migration statistics (e.g. Zlotnik 1987; Bilsborrow et al. 1997; Poulain et al. 2006). Some demographic studies have focused on the socio-economic profile of the migrant population, using census and survey data to measure educational levels, economic status and labour market outcomes of the migrant workforce in comparison with the native workforce (e.g. Münz 2007). Another major strand of demographic research has engaged with understanding the differential demographics of migrant populations, in particular by investigating the extent to which the sending and receiving contexts and the migration event affect the patterns of fertility and family formation (e.g. Haug et al. 2002). Finally, population projections have engaged with forecasting international migration as a component of population change, proving to be rather ineffective in coping with its high unpredictability (e.g. Bijak 2006). Some projections specifically focused on the potential for net migration to offset population ageing and decline, leading to a lively and controversial debate on the concept of 'replacement migration' (e.g. UN 2000; Coleman 2002).

This substantive body of literature has certainly contributed to establish migration as a key object of demographic research. It has also complemented migration research developed within other disciplines (sociology, economics, geography, political science, gender and cultural studies) by

providing an understanding of migration as a demographic phenomenon. However, the realm of demography has not played a prominent role in the research on the *causes* of international population movements. The main attempts to formulate theoretical frameworks explaining why migration takes place have largely drawn from economic and sociological concepts and approaches. Similarly, empirical studies analysing causal processes triggering international migration flows have mainly focused on the impact of economic factors, while those (retrospectively) investigating the consequences of demographic trends for the labour market have rarely done so by taking a migration-perspective. In addition, when demographic factors were taken into account (as principal determinants of migration in the theory of the demographic transition or as contextual drivers of social and economic change in the main theories focusing on the macro-determinants of migration flows), they were mainly assumed to operate in the countries of origin, i.e. migration was considered as a (direct or indirect) consequence of fast population growth putting a strain on natural resources or the labour market. Demographic 'pull' factors have not featured strongly in the large body of theoretical literature on migration and, with few recent exceptions, in explanatory empirical models.

The lack of a rigorous conceptual framework and robust empirical evidence on the role of population change as a pull factor for international migration represents a significant knowledge gap in the current (and future) demographic world, where the major countries of destination of international migrants are experiencing - although at variable pace - an unprecedented, and possibly irreversible, phase of demographic transformation characterised by fast population ageing and incipient population (and workforce) decline. Yet the view that Europe will need large immigration flows to make up for a demographic gap has gained ground among population scientists (e.g. Johnson and Zimmermann 1993; Golini et al. 2001; McDonald and Kippen 2001; Münz 2007) and is increasingly popular in policy circles, particularly at EU and international level (e.g. CEC 2005; OECD 2009).

This paper addresses precisely this key question at the core of the migration debate: will European contracting and ageing demographics generate a growing latent demand for immigration to fill a demographic gap? The analysis is structured as follows: section one selectively reviews how demographic pull factors have featured in the extensive literature, developed within demography and other social sciences, dealing either theoretically or empirically (or combining both approaches) with the macro-level determinants of international population movements; section two illustrates key demographic trends and workforce scenarios in the EU assuming that no further migration will take place; section three discusses how the medium- and long-term prospects for European labour markets could be affected by demographic shortages and the extent to which a need for migrant labour could emerge as a result. Without the presumption to provide definitive answers or a comprehensive explanatory framework on how demographic forces create a latent demand for

immigration, this paper aims to stimulate reflection and debate on what is arguably one of the key social challenges of the twenty-first century.

1. Demographic determinants of population movements: theory and empirical evidence

1.1 A weak theoretical framework

Despite the growing attention of demographers to international migration as a driver of population change, demographic research on the causes of international migration is relatively underdeveloped – compared, for example, with the abundant literature on the determinants of fertility. In particular, demographers have made little contribution to the theoretical literature on migration, which builds mainly on economic and sociological concepts and approaches. The minimal progress made by demographers in explanation and theorization of migration (and mortality) is arguably one of the key weaknesses of the discipline (Tabutin 2007).

In the mainstream demographic tradition, demographic trends are mainly considered as a 'push' factor for international migration. Demography's major theoretical framework explaining the relationships between demographic trends and social and economic change – the theory of the demographic transition – emphasizes the role of migration as an outcome of the transitional process, i.e. out-migration as triggered by fast demographic growth and working as a 'safety valve' to relieve (part of) the population pressure on the labour market and/or natural resources (e.g. Chenais 1986). That is, countries where large cohorts enter the labour market would experience a rapid increase in labour supply leading to a downward pressure on wages, rising unemployment and a 'push' effect for out-migration.[1] In addition, rising demographic pressure in rural areas of developing countries would increase the volume of rural urban-migration, which is often an event preceding an international movement (Zelinsky 1971).

From a receiving country perspective, the main assumption exemplifying how demography can act as a pull factor for international migration is that decreasing fertility, by generating smaller cohorts entering the labour force after approximately two decades, can bring about – other things being equal – a contraction of labour supply and therefore a rising need for imported workers. On the one hand, increasing demand for migrant labour would arise because of a contraction of the labour force available to take up entry-level jobs, and as an alternative to raising labour costs at the bottom of the occupational ladder. On the other, population ageing, and specifically the contraction of the working age population relative to the older dependent population, would undermine the

[1] Macunovich (2000) also notes that countries with growing youth cohorts tend to be countries that have or have had high fertility rates and, therefore, high child dependency rates and low per capita income.

sustainability of the social contract between generations on which the welfare systems are founded (e.g. Weiner and Teitelbaum 2001).

This idea has, implicitly or explicitly, provided a conceptual basis for the strand of empirical literature on 'replacement migration' – revived by the United Nations at the beginning of last decade (UN 2000) but counting several earlier contributions (e.g. Blanchet 1989; Coleman 1992). Studies in this area have mostly used demographic projections to explore the demographic impact of immigration on the host population and the feasibility of using immigration as a policy instrument to achieve 'desirable' demographic targets. The general conclusion of these studies has been that, although migration can contribute to sustaining population and workforce growth, in the long run it cannot stop population ageing under any plausible and politically sustainable scenario. However, while the concept of replacement migration is highly theoretical[2], it has contributed only to a limited extent to theory-development on the demographic determinants of international migration. By focusing on the potential and feasibility of immigration policies inspired by demographic objectives, this strand of literature has not produced a stand-alone, comprehensive theoretical framework explaining the causal processes by which population change in post-transitional demographic regimes characterised by contracting and ageing demographics interacts with the social and economic contexts and creates the need for replacement migration.

Combining sending and receiving country perspectives, the so-called 'demographic differential hypothesis' has been formulated, according to which it is the demographic gap between countries that substantially determines international migration flows as an equilibrium restoring mechanism (e.g. Wattenberg 1987; Davis 1988; Hatton and Williamson 1998; Weiner and Teitelbaum 2001). Although plausible and potentially valid, this demographically-driven explanation proves simplistic when confronted with the complexities intrinsic in contemporary international migration patterns. In reality, much international migration takes place either between sending and receiving countries with low fertility (e.g. from Eastern to Western Europe) or between countries with high fertility (e.g. within Sub-Saharan Africa). Hence, while demographic imbalances may well play a role in driving international population movements, a demographic gap alone does not appear to be either necessary or sufficient for the occurrence of migratory flows.

[2] Replacement migration is defined by the United Nations as "the international migration that would be needed to offset possible population shortages, i.e. declines in the size of population, declines in the population of working age, as well as to offset the overall ageing of a population" (United Nations 2000: 1). Literally applied, i.e. assuming that migration is the only 'instrument' to offset population ageing, replacement migration would have to take the form of increasing inflows over time (the population of immigrants and their descendants is also subject to ageing, requiring continuously larger new generations of immigrants to re-balance the age structure), reaching, after some decades, huge or even unrealistic values (Coleman 2002).

1.2 International migration theories and the role of demographic factors

Attempts to develop theories explaining the determinants of migratory movements focusing on economic and, to a lesser extent, social and political factors have been more popular: neoclassical macro-economics (Ranis and Fei 1961; Harris and Todaro 1970; Todaro 1976) and micro-economics (Todaro 1969), the new economics of labour migration (Stark and Bloom 1985; Stark and Taylor 1991), the dual labour market theory (Piore 1979), the world systems theory (Portes 1981; Sassen 1988), the network theory (Boyd 1989; Fawcett 1989), and the theory of cumulative causation (Massey 1990). Other major approaches tried to integrate the key aspects of the different migration theories: the international migration systems (Kritz et al. 1992) and the 'push and pull' framework (Zimmermann 1995a). However, no single theory or synthesis has provided a full understanding of contemporary migratory processes. Quoting Arango (2000: p.295), migration has proved to be "hard to define, difficult to measure, multifaceted and multiform, and resistant to theory-building".

The main theories of international migration developed by other disciplines have paid limited attention to demographic pull factors. While demographic changes in sending regions were often mentioned by sociologists, economists and human geographers as contextual and contributing factors to social and economic change underlying migration movements, little efforts have been made to incorporate in the existing conceptual frameworks demographic forces operating in receiving regions. The lack of consideration for demographic pull factors seems to be ascribable to various reasons, including: the prevailing view among migration scholars that, after the end of guest worker programmes in the early '70s, migration flows to Europe have mainly been driven by push factors; the fact that the main migration theories were formulated at a time when migration played a less important role in the demographic dynamics relative to natural increase and the consequences of population ageing on labour market and welfare provision had not yet manifested; and the limited exchanges between demography and other social sciences (Tabutin 2007).

One remarkable exception is the dual labour market theory (Piore 1979), which, particularly in its later developments, included some emphasis on the socio-demographic characteristics of the labour force as a factor shaping demand for migrant labour (Massey et al. 1993; 1998). This theory posits that demographic changes in modernising societies significantly contribute to the contraction of labour pools available to fill jobs at the bottom of the occupational hierarchy. In the past, labour demand in low-paid, dead end jobs was typically met by three demographic categories with social statuses and characteristics making them flexible enough to accept the poor employment conditions on offer: women, usually up to the time of their marriage or first birth, or seeking supplemental income for their family; teenagers, considering work instrumentally as a means of earning pocket money or gaining experience; and rural-urban migrants, moving from the social and economic backwardness of impoverished rural areas. Demographic and social modernisation leads to the contraction of these labour pools. The changing role of women within the family and society

transforms women's work into a career pursued for social status as well as income, with many women taking up highly qualified jobs (in the 'primary' labour market) and becoming breadwinners – also because of the rise in divorce rates. The decline in birth rates generate decreasing cohorts of teenagers taking up entry-level jobs; and the urbanization of society and depopulation of rural areas progressively dries up the workforce pool available to move to the cities. Therefore, in order to avoid inflationary pressures on wages at bottom of the occupational hierarchy, employers start to recruit migrant workers. The demand for migrant labour is then perpetuated by the development of 'niches' of 'immigrant jobs' that the domestic workforce refuse to do because of their low status; by the network effect of established migrants attracting new overseas workers; and by the creation of jobs that would not exist in their absence, mainly, but not exclusively, within 'ethnic economies'.

The main criticism of the dual labour market theory is its one-sided approach: it is not a comprehensive theory of international migration because it completely ignores push factors, thereby implicitly assuming potentially unlimited supply. It was originally formulated at the time of massive recruitment of 'temporary' overseas workers in the heavy industry and manufacturing sector, while its explanatory power is more limited in relation to the contemporary migration scenario characterised by a high demand for migrant labour in the tertiary sector and a prominent role of push factors. However, the dual labour market theory has still the merit of explaining the structural determinants of demand for low-skilled overseas labour that is inherent in many contemporary economies. An evolution of this theory, the segmented assimilation hypothesis has also helped understand the apparently contradictory coexistence of domestic labour shortages and high levels of youth unemployment in many European receiving countries – this is the case especially in southern Europe (Ambrosini 2005a).

Other academic literature explored the modes of structural incorporation of migrant workers in the receiving societies (Portes 1981; Portes and Böröcz 1989). In particular, the notions of international division of labour (Frobel et al. 1980), economic and urban restructuring (Fielding 1993), post-industrialism (Bell 1973), globalisation (Sassen 1988; Castles and Miller 1993), underground economies (Reyneri 2003), hiring queues (Waldinger and Lichter 2003) have all contributed to the understanding of the economic and social processes shaping the demand for migrant labour in most high income countries. Again, demographic pull factors were peripheral in these conceptual frameworks.

1.3 Lessons from empirical research

The weakness of stand-alone demographic theoretical approaches meant that demographers and other quantitative social scientists trying to operationalise the forces driving migration and verify their influence on observed migration flows have mainly built on theories which identify economic and, to a lesser extent, social and political push and pull factors as the main determinants of

migratory movements. Since the end of the 1980s a plethora of econometric studies have explored empirical associations between migration and income (variably specified in terms of levels, differentials or variations in sending and receiving countries), including a number of possible control variables – see Bauer and Zimmermann (1995) for a review of early studies and Cangiano (2005) for a more recent overview. Attempts to test the impact of population trends as drivers of international migrations gave rise to various, often simplistic, operative definitions of the demographic variables – according to whether the emphasis was put on the population stock, age structure or growth rate – and led to sometimes contrasting results. Some studies have adopted a classical gravity model in which the size of the home and host population matters, while others have focused on demographic supply-side effects on the labour market considering the proportion or growth rate of the young adult cohorts. Overall, much more emphasis was placed on the 'push' effect of demography in sending countries than on its possible role as pull factors. The statistically significant associations found by various studies suggest that migrants are more likely to come from sizeable, young and dynamic populations (Hatton and Williamson 1994; 1998; Karemera et al. 2000; Pedersen et al. 2004; Mayda 2010). Malmberg et al. (2006: 97) also found support for the assumption that shrinking youth cohorts in receiving countries stimulate immigration. However, generalisation of results is difficult because of the large variability of used data and definition (Cangiano 2005).

The empirical literature measuring the consequences of demographic trends for the labour markets in immigrant-receiving countries has generally overlooked the specific implications for the demand for migrant workers. Many studies focused on the impact of cohort size on access to education, employment opportunities and wages, explicitly testing or implicitly building on the Easterlin (1980) hypothesis that large birth cohorts, suffering from great peer competition in the labour market, experience both higher unemployment and lower earnings. Analyses looking at experiences of post-war baby-boom generations have produced mixed but on balance supportive results – more so for the U.S. (see for instance Bloom et al. 1987; Ermish 1983; 1988; Coleman and Salt 1992). However, results vary according to the economic circumstances and the groups under review – with a significant role played by the degree of substitution between different groups of workers, e.g. men and women, or older and younger workers (Ermish 1983). While these studies have implicitly looked at demographic processes shaping gaps in labour supply, the specific implications for the demand for important workers were discussed only incidentally in this body of literature.

2. Recent and future population trends: towards a migration-driven European demography?

2.1 The components of population change

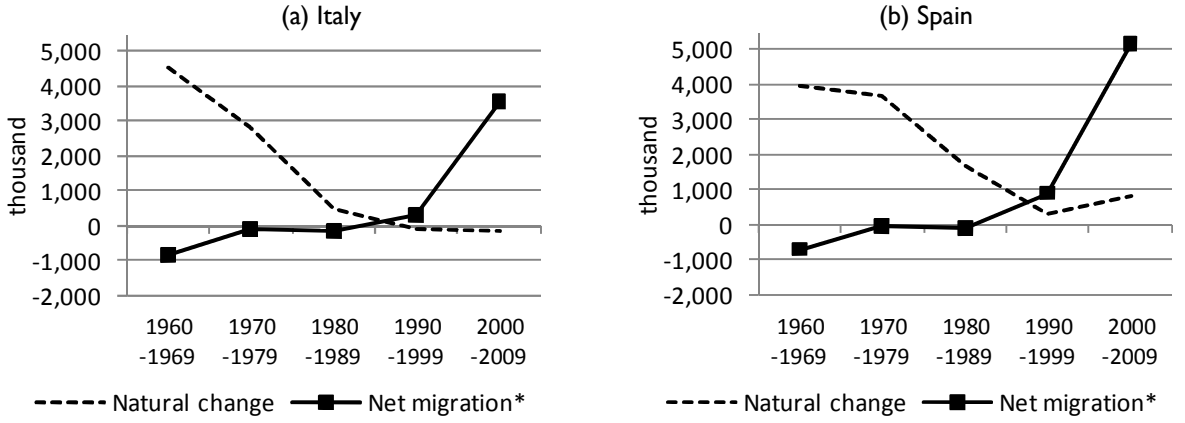
Understanding of the role of demographic pull factors in shaping demand for imported labour is a question of paramount importance in European 'post-transitional' demographic regimes characterised by ageing and contracting demographics. Nowadays, in most European countries net international migration exceeds natural change. What is more, in EU countries experiencing persistently 'lowest-low' fertility alongside highly positive net migration, natural change is already zero (e.g. Italy) or negative (e.g. Germany) and net migration is the only positive addition to population change. This is illustrated in figure 1, comparing natural change and net migration over the last five decades in the six most populous EU countries: three 'old' immigration countries (Germany, France and the UK), two countries which over the last two decades have turned into major net receivers of international migrants (Spain and Italy), and one country (Poland) which is both an 'old' and 'new' (i.e. post-accession) origin of intra-EU migrants.

Figure 1 shows significant variation in the relationship between natural change and net migration across EU countries. For example, in Italy and Spain natural change and net migration have followed a nearly specular trend, with natural increase as the only component of population growth until the 1980s and net migration representing the only (or major) driver of population increase in the last decade (figures 1a and 1b); in France natural increase has always been higher than net migration throughout the last five decades (figure 1c); in the UK increasing net migration has recently become the major contributor to population change despite natural change has remained positive – and also slightly increased (figure 1d); Germany has experienced the largest decrease of both natural change (in the 1970s)[3] and net migration (in the last decade) (figure 1e); Poland has not (yet) turned into a net receiver of migrants despite its natural cane has dropped to zero[4] (figure 1f). In addition to its direct contribution to population change, net migration contributes also significantly to natural change: births to immigrant mothers account for one in four or more of births in the UK, France and Germany (Coleman 2009), one in five in Spain, and one in seven in Italy.

[3] In particular, the number of births nearly halved in only one decade, dropping from a peak of 1,357,304 in 1964 to 782,310 in 1975 (Federal Statistical Office of Germany, website).

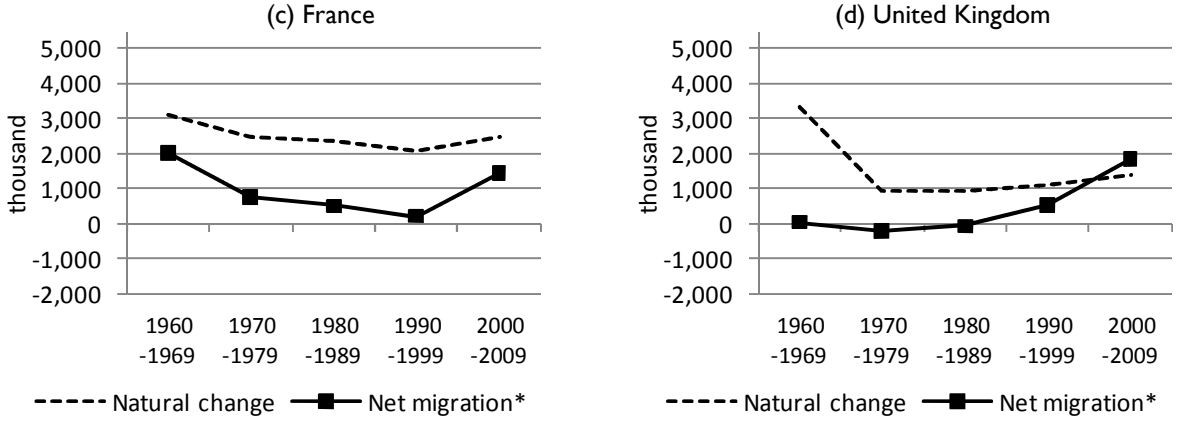
[4] Post-accession outmigration from Poland is not captured by Polish emigration statistics as most people who left did not register as permanent emigrants. Reliable estimates of net migration for the last decade will be available after the 2011 Census and based on retrospective adjustments.

Figure 1 – Components of population change, selected EU countries, 1960-2009



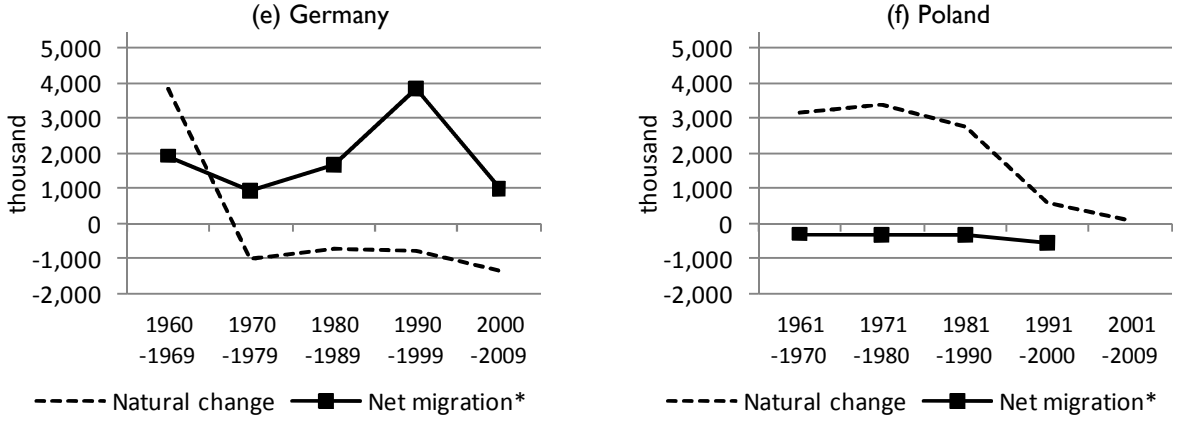
Population (2010)	60,340	
Net migration as % of population growth**	1960-2009	2000-09
	27%	100%

Population (2010)	45,989	
Net migration as % of population growth**	1960-2009	2000-09
	33%	86%



Population (2010)	62,793	
Net migration as % of population growth**	1960-2009	2000-09
	28%	37%

Population (2010)	62,008	
Net migration as % of population growth**	1960-2009	2000-09
	22%	57%



Population (2010)	81,802	
Net migration as % of population growth**	1960-2009	2000-09
	100%	100%

Population (2010)	38,167	
Net migration as % of population growth**	1960-2009	2000-09
	0%	0%

Source: author's elaboration on Eurostat population database
Notes: (*) including corrections (**) net migration is set to account for 100% of population growth when natural change is negative

While migration movements mostly involve young adults, births and deaths largely concern individuals at the extremes of the age distribution. Therefore, the comparison between net migration and natural change is not representative of the contribution of migration to the workforce. In its last annual report on international migrations the OECD (2010) calculates as an indicator of the scale of migration relative to the workforce the ratio of the annual inflow of permanent-type migrants to the average size of a single-year cohort in the 20-24 age group. This exercise has shown that, assuming equal participation rates, over the 2004-2007 period permanent-type migrants accounted for about one-third of new entries into the working-age population (OECD average), with significant variation across EU countries - ranging from more than half of total entries due to migration in Spain and Ireland and less than 1 in 5 in Germany and France. In terms of overall contribution to the labour force, in 2007 people born overseas accounted on average for 10% of the working age population in the EU-27 (nearly 33 million workers), with higher percentages in several countries (e.g. 18% in Austria and 15% in Germany, Spain, Ireland and Sweden) (European Commission 2008).

2.2 Demographic prospects of the EU labour force

Demographers and labour economists have often discussed the potential consequences of the future contraction of the working-age population in terms of domestic labour shortages and as a potential pull factor for international migrants (e.g. Coleman 1992; 2006; Golini et al. 2001; McDonald & Kippen 2001; Malmberg et al. 2006; Münz 2007; Lutz et al. 2008a; OECD 2009). For example, Johnson and Zimmermann (1993: 16-17), in their influential book on the consequences of ageing for European labour markets, state: "the substantial ageing of the European labour force will significantly alter the wage and employment structure. It will then also likely affect labour mobility, and with open border, also induce immigration. ... it is likely that the degree of mismatch between labour demand and supply will increase, either because of immobility, inappropriate skills or the unwillingness of the old to accept wage cuts and take over the jobs of the young". More specifically, two major outcomes of population change - already ongoing and occurring on an unprecedented scale over the next decades - are assumed to trigger a need for migrants: i) the contraction and ageing of the working-age population, bringing about significant structural changes of domestic labour supply and potential labour shortages in labour-intensive occupations; ii) the increasing number of older people with care needs, requiring an expansion of the long-term care workforce - a sector of the labour market already characterised by a high reliance on migrant labour in many EU countries.

Population projections indicate that the working age population in Europe will soon begin to shrink. According to Eurostat's principal variant projection (convergence scenario), the working-age population of the EU-27, estimated at 303 million in 2008, is predicted to start falling from 2013 and decrease to 297 million by 2028 (-6 million or -2%) and to 272 million by 2048 (-31 million or -10%).

As shown more in detail below, this overall decline will result from a marked contraction of the young adult population only partly offset by an increase in the number of older workers, and will therefore be associated with significant ageing of the working-age population. Moreover, this scenario assumes the continuation of large - although decreasing - inflows of international migrants (net migration to the EU-27 is assumed to total more than one million per year throughout the projection period).

Projections of the adult population over short time horizons, e.g. two decades, are pretty robust because the vast majority of adult individuals in 20 years are already born at the beginning of the projection (i.e. they are included in the base-year population). Therefore, the main source of uncertainty in the short and medium term is the future level of net migration. Beyond a 20-year horizon, fertility levels drifting away from the assumptions made in the projection scenario can also affect the size and structure of the working-age population. However, in countries with very low fertility even a rise in fertility levels (within a plausible range of values) would not halt the decline of the adult population because the past decades of below-replacement fertility and declining numbers of births have induced a negative population momentum (McDonald and Kippen 2001; Lutz et al. 2003).[5]

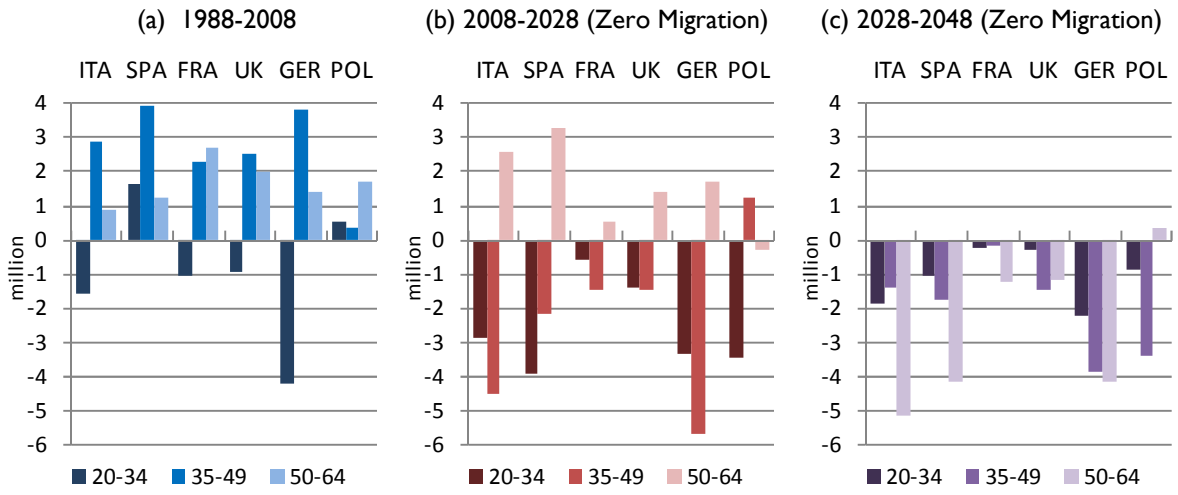
The contraction of the workforce does not concern the different age groups equally but is associated with cohort effects: as smaller cohorts enter the labour force, progress across subsequent working ages and reach the pensionable age, the size and relative weight of different age groups change over time. International migration (in- & out-) also contributes to shaping the age structure with an age-specific pattern, i.e. by concerning mainly individuals in the 20-34 age group. Figure 2 shows the observed and projected change of the working-age population by broad age group (20-34, 35-49 and 50-64) across three 20-year periods (1988-2008, 2008-2028 and 2028-2048). While population estimates for the past two decades include the contribution of net migration, projected values refer to Eurostat's no-migration scenario (i.e. assuming zero net migration at all ages throughout the projection period). The assumption of no post-2008 migration, by showing the consequences of ongoing population dynamics without further adjustments ascribable to the exogenous contribution of positive net migration[6], provides a useful reference scenario for a discussion of the potential labour market imbalances which may emerge as a result of contracting and ageing demographics.

Over the last two decades the overall working-age population has grown in all six countries represented in the charts. With the exception of Spain and Poland, which experienced a population increase in all broad age groups, this overall rise was due to a growing number of 'middle-age' and

[5] In other words, for some time new generations of children born to shrinking cohorts of mothers will continue to be ever-smaller even if the average number of children per woman began to increase.
[6] In Eurostat's main projection variant (convergence scenario) net migration is assumed positive for all EU-27 countries in the long term.

'older' workers, only partly offset by a moderate – or, in the case of Germany, large – decrease of the population aged 20-34. It can be easily inferred by looking back at the net migration trends displayed in figure 1 – and bearing in mind that migrants who arrived in the two preceding decades are still largely concentrated in the young adult population – that in Italy, Spain and, to a lesser extent, the UK net migration played a major role in driving the increase or moderating the decline of the young and middle-aged workers' cohorts. In Germany, while high net migration levels during the 1990s contributed to the growth of the population in the 35-49 age range at the end of the period, low net migration in the last decade was not sufficient to offset the very large decrease of the new cohorts entering the workforce.

Figure 2 – Change of the working age population by broad age group in selected EU countries. Estimates (1988-2008) and projections (2008-2048, Zero Migration scenario)



Source: author's elaboration on Eurostat population database

Assuming no post-2008 migration, over the next two decades the working-age population is expected to decline in all six (demographically) largest EU countries (figure 2b). In both absolute and relative terms, the largest decrease is projected for Germany (-7.3 million or 15%) and Italy (-4.8 million or 13%). With the exception of Poland, the contraction of the workforce would result from a marked (Italy, Spain and Germany) or moderate (UK, France) decrease of the 20-34 and 35-49 age groups, only to some extent compensated by an increase in the number of older workers. With no additional inflow of new immigrants the workforce decline would be particularly significant in the 20-34 age group (-37%) for Spain and Poland and in the 35-49 age group for Italy and Germany (-32% and -28% respectively).[7]

[7] Coleman (2006: 74) argues that the fall of the young working age population looks currently impressive because it is measured from the "troublesome height of the baby boom generation and the curse of youth unemployment that accompanied it, less so in longer perspective".

Looking at the two subsequent decades (2028-2048, figure 2c) – and keeping the assumption of no post-2008 migration – the working-age population decline becomes even most significant (-27% in Italy and Spain, -24% in Germany i.e. -10.2 million people). In Italy, Spain and Germany, the contraction would now concern all age groups. In most countries the largest population decline would now characterise the 50-64 age group (-38% in Italy and Spain), reflecting the exit from the working age population of the larger cohorts born in the 1960s. The exception is Poland, where the size of new generations shrank in the 1960s and a 'baby-boom' occurred between the mid-1970s and mid-1980s.

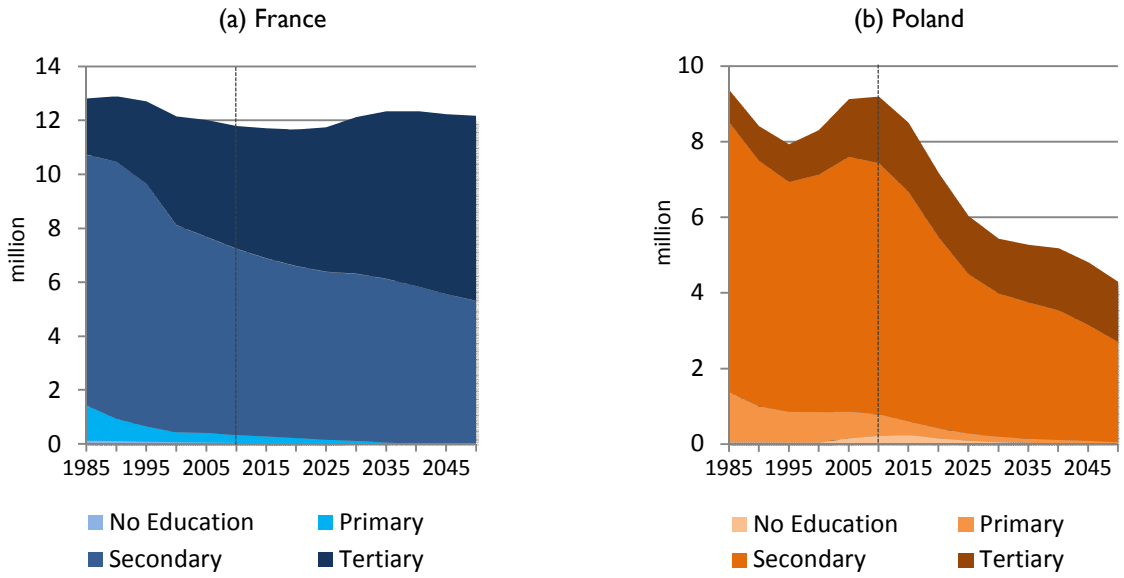
Demographic trends do not operate in isolation in shaping the structural characteristics of the workforce. In particular, education is a key variable linking demographic and labour market trends. On the one hand, education is a major (perhaps the most important) determinant of all components of demographic change (mortality, fertility and migration) (Lutz et al. 2008b). On the other, access to and quality of education can be influenced by the size of cohorts (e.g. negatively affected by generational crowding) (Easterlin 1980). The mutual interactions between demographic dynamics and the patterns of enrolment in education of each cohort determine the distribution of the working-age population by educational attainment, which is in turn an indicator of the quantity of human capital available on the labour market. IIASA's backward and forward population projections by level of education represent a useful data source to illustrate the relevance of this point in relation to the above-described European demographic trends (see Lutz et al. 2007; KC et al. 2010). Figure 3 shows recent and projected trends for the educational structure of the population in the age range 20-34, i.e. the age group that will experience the greatest numerical contraction in the near future. France and Poland are compared[8], i.e. the two countries respectively least and most affected by population change in this age group. Projections refer to IIASA's Global education trend (GET) scenario, based on the assumptions that a country's patterns of enrolment in education expansion will converge on an expansion trajectory based on the historical global trend.

For France, the chart shows that despite the size of the age group 20-34 has remained and will remain almost unchanged, substantial changes in the educational distribution of the group occur throughout the period considered (1985-2050). In particular, while in 1985 secondary education was the highest educational attainment for over 70% of the population in this age group, from 2035 the majority of people aged 20-34 will have achieved tertiary education. Future perspectives look radically different for Poland (figure 3b), where the very remarkable contraction of the 20-34 age group may be associated with a moderate improvement in the educational structure, i.e. in 2050 secondary education may still be the highest educational level reached by over 60% of people in this

[8] IIASA's population projections are based on the medium variant of the UN population projections. Specifically, they incorporate UN assumptions on net migration, and therefore differ from Eurostat's no-migration scenario presented here. In figure 3, this is the case only for France, for which a moderately positive net migration annual inflow is assumed (+100 thousand for the long-term). For Poland, UN net migration assumption is close to zero, so the trends in figure 3 essentially correspond to the values shown in figure 2.f.

age group. In other words, demographic trends in Poland will not only result in a contraction of the young working-age population but may also represent a significant constraint in the expansion of the highly skilled workforce.

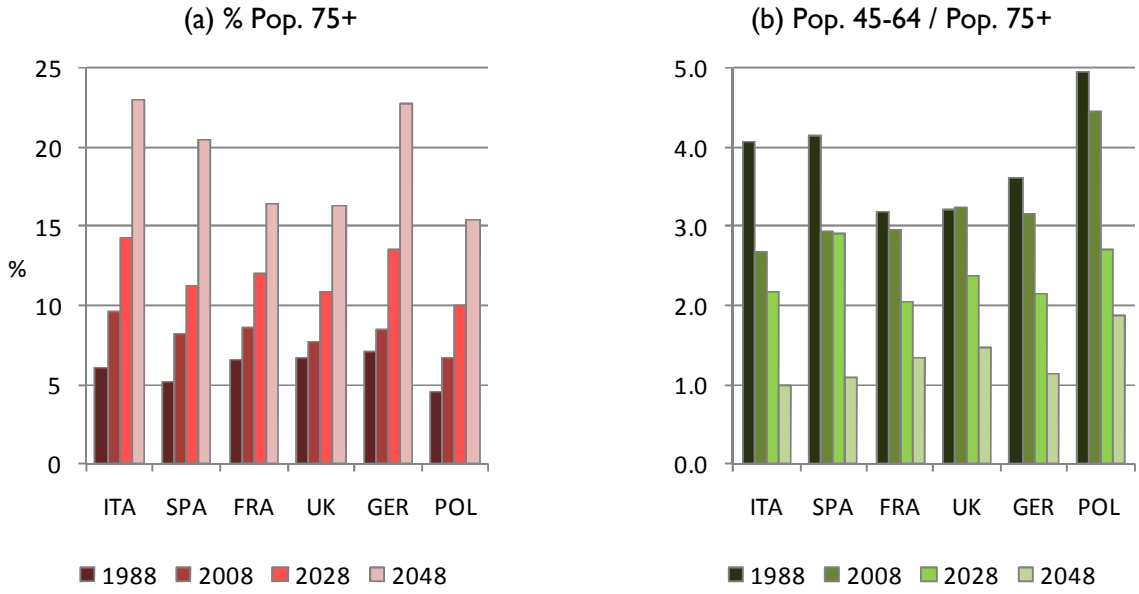
Figure 3 – Population aged 20-34 by level of education in France and Poland. Estimates (1985-2005) and projections (2010-2035)



Source: IIASA education back and forward projections

As discussed more in detail in the following paragraphs, in addition to their impact on the size and structure of labour supply, population dynamics are likely to affect also labour demand. In particular, population ageing will bring along rising demand for specific services, first and foremost health and social care. This sector is experiencing labour and skill shortages in several EU countries. Shrinking family size and greater participation of women in the formal labour market have entailed the weakening of informal support structures, and, contextually, the reliance on migrant nurses and care workers to provide long-term care for older people has been increasing. The European population is expected to continue to age significantly over the next decades. Figure 4a shows the changes in the proportion of the population aged 75 and over (conventionally, the age group with greatest care needs) between 1988 and 2048. As for figure 2, in order to show the potential consequences of ongoing demographic trends in absence of further immigration, projections are based on Eurostat's no migration scenario.

Figure 4 – Population 75 and over (% of total population) and intergenerational support ratio in selected EU countries. Estimates (1988, 2008) and projections (2028, 2048 - Zero Migration scenario)



Source: author's elaboration on Eurostat population database

As widely documented by a plethora of demographic studies, population ageing is an all-pervasive phenomenon in Europe, although with variable pace in different countries. The proportion of people aged 75 and over has been and will be consistently increasing in all 6 countries, exceeding 20 per cent in Italy, Germany and Spain at the end of the projection period. Perhaps more interesting as an indicator of the potential increase in the need for formal care labour is an intergenerational demographic support ratio, here defined as the ratio of the population aged 45-64 to the population 75 and over (figure 4b). The rationale of this indicator is that informal care to older family members is mainly provided by their adult children, who are on average 30 years younger than their parents.[9] Over the past 20 years the intergenerational demographic support ratio has dropped dramatically in Italy and Spain - while minimal variations occurred in France and the UK. This drop in the relative size of cohorts potentially providing informal care has certainly been a factor contributing to the progressive departure from a familistic model of care provision and the contextual massive recruitment of foreign care workers within Italian and Spanish households. The

[9] In 2008 the mean age at childbirth in the six countries considered in figure 4b ranged from 28.1 (Poland) to 31.1 years (Italy) (Eurostat, online population database). For the sake of simplicity, I assumed 30 years as the length of a generation in all countries. The intergenerational demographic support ratio remains a rough measure of the potential for informal care support as not all people over 75 need care, not all people 45-64 provide care, and other family members - namely partners - may also provide care. It is however a more appropriate indicator of potential care support than the overall demographic support ratio (Pop. 20-64 / Pop. 65+) which refers to the whole system of intergenerational transfers between the active and older population.

intergenerational demographic support ratio is expected to undergo a marked decrease throughout the projection period: in all countries but Poland, from about 3 to just above 1 potential carer per potential care recipient.

In summary, five general conclusions can be drawn from this review of population estimates and projections. First, net migration is currently playing a major role in offsetting the decrease of the working-age population in a number of European countries, and with no additional migration these countries would experience a severe contraction of their workforce, particularly in the long term (beyond 2030). Second, significant differences exist across the EU, as countries with moderately low fertility – such as the UK and, particularly, France – would be much less exposed to a decline of their workforce even in absence of future migration. The significant divergence of demographic trajectories across EU countries has been emphasized in several previous studies (e.g. Feld 2005; Coleman 2006; Bijak et al. 2007). Third, depending on the transit of cohorts of different size across the working ages, different age groups of the working-age population will experience more pronounced contraction (in the order of 4 workers out of 10 in the absence of immigration) at different times (the age group 20-34 in the next two decades, middle-aged and older workers in the longer term). This has significant implications in terms of latent demand for migrant labour, which is mainly characterised as a need for young, mobile and flexible workers.[10] Fourth, the combination of demographic trends with the future patterns of enrolment in education will produce significant changes in the educational structure of the workforce, bringing about a variety of potential challenges across the EU ranging from the need to 'upskill' the occupational structure in order to accommodate the growing number of highly educated youth, to the potential demographic constraints in the 'production' of sufficient number of skilled workers to meet the needs of a knowledge-based economy. Lastly, in absence of future migration and all other things being equal, demography will reduce the potential for intergenerational care support for older people from their adult children.

The question of whether and under what conditions the severe demographic gaps in the working age population of some European countries will actually bring about labour shortages and mismatches, resulting in a high demand for imported labour, is difficult to answer, not least because it is relatively new – falling labour supply over a long period has not been experienced by any industrialised society. The next section reviews existing projections and scenarios for the future of European labour markets, discussing implications of demographic gaps for the potential demand for migrant labour.

[10] For example, Malmberg et al. (2006) anticipate that after the after 2020 the demand for immigration in Europe may decrease because the size of new youth cohorts entering the labour market will level off.

3. Demographic prospects and labour shortages

3.1 Projecting labour demand and supply: European scenarios for the medium-term

As further clarified below, a large number of factors come into play in shaping labour demand and supply and their mutual interactions, which make it impossible to forecast the occupational structure and potential skill shortages beyond a short time horizon. In particular, while population projections provide a reliable basis for projecting labour supply, significant challenges are associated with defining, measuring and projecting future labour demand with a reasonable degree of accuracy (Doudeijns and Dumont 2003). Future demand for manpower and skills is influenced by a combination of volatile economic factors (e.g. technological change and market globalisation) mediated by unforeseeable policy developments. Therefore, projections of emerging labour needs are much less reliable than labour force projections, cannot realistically cover more than a 10-year timeframe, and can only be used for aggregate analyses of future labour market developments. These caveats make it very difficult to design labour market policies for the long-term or to plan occupation-specific supply-side measures (Boswell et al. 2004; Freeman 2006).

Nevertheless, projections of employment trends for the medium term have a long-established tradition in the U.S.[11], and are now available also for the EU-27. Since 2008, the European Centre for the Development of Vocational Training produces, on behalf of the European Union, employment forecasts for the next 10 years for EU-27 Member States (CEDEFOP 2010). CEDEFOP carries out projections of labour demand by economic sector, occupation and qualification based on a macroeconomic model and projections of labour supply by skills building on Eurostat's population projections (convergence scenario).

According to the current projections, net employment change adds up to more than seven million in the period 2010-20.[12] Sectoral employment trends are projected to be broadly similar to those pre-recession, namely towards a further expansion of the service economy and away from agriculture, mining and some manufacturing activities. Employment growth in the service sector is especially driven by job expansion in business and other services (+15%), hospitality (+9%), retail (+6%), and health and social work (+6%). More modest growth (+2-3%) is expected for the construction, transport and education industries. Contextually, labour demand is projected to increase for high-level managerial, professional and technical jobs, and for service-related occupations such as sales, security, catering and caring. In contrast, routine jobs requiring traditional agricultural skilled workers, clerical skills and several other craft and related skills are expected to shrink. In terms of demand for formal skills, these projected sectoral and occupational changes are

[11] The U.S. Bureau of Labour Statistics revises its employment projections every two years (BLS 2009).

[12] Net employment change does not capture the impact of replacement demand, which account for a substantial part of all total job openings. In other words, 'gross' labour demand remains positive even in occupations experiencing net job losses because of the need to replace, at least in part, workers leaving for various reasons (mainly due to retirement).

expected to require continuing growth in demand not only for many high-skilled workers but also for some lower-skilled categories. This increased demand at the upper and lower ends of the occupational structure, and decreases or stagnation in the middle, suggest a trend towards further job polarisation (an 'hourglass' economy), a pattern characterising European labour markets over the last decades. Research carried out for the UK (Goos and Manning 2007) and Germany (Dustmann et al. 2009) suggests that computerisation and outsourcing of work to foreign countries are key factors underlying such polarisation.

In terms of skills' supply, CEDEFOP projections until 2020 point to a marked increase of the labour force with high qualifications (+23%), a small average increase of the group with medium/vocational qualifications (+2%, although decline is expected in some countries such as Poland), and a marked decrease of the workforce with low qualifications (-28%). These trends reflect strong cohort effects, i.e. young people enter the labour market with higher qualifications while lower-qualified older people leave the labour force. As a result of better educated cohorts moving into older age groups, participation rates of older workers are also expected to increase. Overall, developments of skills supply are expected to match projected labour demand. However, CEDEFOP analysis concludes that in the post-recession period it might be more difficult for some young workers qualified at medium and higher levels to find jobs matching their expectations, suggesting potential deployment of this skilled workforce in occupations that used to require lower formal qualifications. 'Overskilling' is signalled as a potential challenge for labour market efficiency if it is not resolved in the short term by subsequent moves to higher-level jobs (CEDEFOP 2010).

CEDEFOP projections do not include an assessment of the specific contribution of immigration to labour market trends. Set against the demographic trends illustrated in the previous paragraph, two important observations can be made. First, CEDEFOP forecasts of labour supply are based on the 'convergence scenario' of Eurostat population projections, assuming the continuation of large inflows of international migrants for the oncoming decade (annual net migration for the EU-27 is expected to decrease from 1.6 million in 2010 to 1.3 million in 2020). This assumption results in a stability of the working-age population in the short and medium term, while in absence of future net migration the working-age population would fall by 14 million people over the next 10 years (down to 291 million in 2020, compared to 305 million with positive net migration). Therefore, CEDEFOP projected developments of labour supply - and expectations of an overall match with demand for skills - are implicitly dependent on the continuation of positive net migration at about (or just below) the current levels. In addition, CEDEFOP projections have specific implications for potential needs for migrant labour because the growth of labour demand is expected to take place in sectors and occupations where the reliance on the migrant workforce is already high. As a matter of fact, compared to the EU-born, third country migrants' employment is relatively more concentrated in the hotels and restaurants, private household, wholesale and retail trade, and construction

sectors, and, although to a lesser extent, in business activities (Münz 2007; European Commission 2008). The overrepresentation of recent migrants at the top and bottom ends of the occupational ladder mirrors the increasing job polarisation of European labour markets and stands out as a key feature of future demand for overseas workers.

3.2 Long-term perspectives: the role of intermediate factors

Over the long term (e.g. in 20-40 years), labour market trends are extremely hard to predict. As mentioned above, forecasting labour demand is nearly impossible because of the high volatility in the development of markets and technology – e.g. innovation, by its own nature, cannot be anticipated. Projections of labour supply are also subject to greater uncertainty. The longer the length of the projection period, the less reliable become the projections of the working age population – mainly because of the cumulative effect of different net migration assumptions and because fertility shifts away from asymptotic values can bring about unpredictable swings in the size of the cohorts entering the labour market. Age-specific labour force participation rates can also be affected to a significant extent by changes in enrolment in education, preferences and opportunities for retirement as well as the types of jobs and working conditions available on the market. Therefore, projections of labour supply for the longer term are typically carried out using a what-if logic, i.e. simulating the outcomes of a range of assumptions regarding these factors of change and observing their potential impact. A number of previous demographic studies have taken this approach and discussed how economic, social and institutional factors can combine with the projected demographic trends, translating the latent demand for 'replacement migration' brought about by the shrinking and ageing demographics into actual labour shortages which cannot be filled through domestic labour supply (e.g. Coleman 1992; 2006; Feld 2000; 2005; McDonald and Kippen 2001; Malmberg et al. 2006; Bijak et al. 2007; Münz 2007; Ivanov 2009). These studies have also investigated the feasibility of alternative measures of economic and social policy resulting in different responses of European countries to these demographic challenges. The key issues emerging from these analyses are now reviewed and discussed.

3.2.1 Factors of labour supply

A key question investigated by long-term labour force projections is whether the future contraction of the working age population can be offset by a greater mobilisation of the potential workforce.[13] In

[13] A number of studies have also explored the potential for measures aiming at boosting fertility as a policy instrument to counter population ageing and decline (e.g. McDonald and Kippen 2001; Bijak et al. 2007). These simulations generally show that a rise in fertility could result in a significantly larger workforce after three or four decades. However, the effectiveness of fertility-sustaining policies, and particularly the feasibility of replicating successful practices across different national contexts, has also been questioned (e.g. McDonald 2002; Caldwell et al. 2002; Goldstein et al. 2003; Neyer 2006). In order to keep this paper more focused on its key questions, I deliberately chose not to consider fertility scenarios and policies. In other words, I only deal

other words, whether increasing labour participation and employment opportunities for groups characterised by high level of inactivity and unemployment can represent viable alternatives to new immigration in meeting labour demand.

In some EU countries there is significant scope for increasing labour force participation rates, particularly for the youth, women and older workers. Interestingly, this is the case for some of the countries experiencing the greatest contraction of the workforce. In Italy, for example, female participation rate (20-64) is 55%, 26 percentage points lower than in Sweden (Eurostat's website, 2009 data). In principle, raising activity rates of Italian women to the Swedish levels would increase female labour supply by almost half – other things being equal. Levels of labour participation in the 15-19-year-old age group are also currently very low in most European countries – on average less than one in four are economically active, reason why this group is often excluded from the working age population (as in the previous paragraph). Yet in some countries – particularly in the Netherlands and, to a lesser extent, the UK – the combination of enrolment in high education with part-time work (in so called 'student jobs') is a frequent practice. This labour supply from the young working-age population represents a major resource for economic sectors such as the retail and hospitality industry which would otherwise be tighter than they are (McDonald and Kippen 2001). In addition, in most European countries youth unemployment rates are extremely high, suggesting that a contraction of the population in the young working-ages could actually help redress imbalances in the labour market through a more efficient utilisation of existing labour capacity (Feld 2005; Coleman 2006). Participation rates of older workers are also low in some EU countries, particularly where pensionable age is or was low and there are opportunities for early retirement. This is the case in particular for France (where in 2009 only 44% of people in the age group 55-64 were active), Poland (47%) and Italy (49%) (Eurostat online database).

A number of projection exercises have explored the potential for mobilising the inactive and unemployed to counterbalance future demographic gaps, as an alternative to or in combination with immigration. The general picture emerging from these studies is that the great deal of variation across EU countries in terms of demographic trends and participation/unemployment levels results in very different levels of latent demand for 'compensatory' immigration. In the next 20-25 years, for countries which have traditionally received large numbers of migrants but have also maintained positive natural change – such as France, the UK and the Netherlands – the decline of labour supply could be avoided with increasing participation rates and modest (or no) immigration. In contrast, in EU countries with persistently low-fertility such as Italy and Germany, only a combination of effective labour market reforms[14] and high levels of immigration could prevent a decline of labour

with the possible consequences of declining and ageing demographics for the demand for immigration rather than investigating options to revert these trends.

[14] Feld (2006) projects also the impact of a 50% drop in the unemployment rate on the progress towards reaching the Lisbon employment targets, concluding that for the countries with most unfavourable

supply, even in the short term (e.g. McDonald and Kippen 2001; Feld 2005; 2006; Ivanov 2009). Over a longer time period (in 30-50 years), plausible increases of participation levels alone (i.e. with zero net migration) would no longer be sufficient to offset the contraction of the working-age population in any EU country (e.g. Bijak et al. 2007). For example, Malmberg et al. (2006) estimate that in the absence of migration only a combination of Scandinavian labour force participation rates for all EU-25 countries plus a rise in retirement age by 10 years until 2050, i.e. bringing the participation rates of workers aged 55-74 from 26% up to 76%, could avoid a contraction of the work force. The achievability of such scenario assuming nearly universal labour participation of the working-age population (and a very long working life) is to be questioned. In fact studies projecting trends in participation rates also point to the negative impact of population ageing – shifting a larger share of the workforce to older age groups with lower participation rates – on the overall participation rate.[15]

On the whole, existing projections show that, in principle, policies that facilitate labour participation of inactive groups (e.g. providing better possibilities to work for women with family care duties, encouraging students to take up part-time jobs and creating incentives to postpone retirement) and improve employment opportunities could contribute to reducing, if not eliminating, labour shortages that would otherwise be caused by demographic trends. However, effectiveness of these types of policy interventions has also been questioned.

In relation to boosting labour supply through an increase of participation rates, a first caveat is that this is a one-off bonus, i.e. these measures can be effective over a limited time period as participation rates cannot exceed, or even approach, 100 percent. Possible trade-offs may also emerge from an increase of activity rates. For example, the positive contribution of increased female participation to filling demographic gaps in the labour market may be partly offset by the need for additional workforce to perform tasks that were originally carried out by 'inactive' women within of the family (i.e. more paid domestic and care workers). Moreover, failing motherhood incentives and

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demographic trends this would not fundamentally alter the size of the migratory flow necessary to offset the fall of labour supply. Alongside the potential of immigration, increased participation in the labour force and employment to balance the negative demographic developments, Ivanov (2009) considers the possibility to expand labour utilisation (working time) as a component of labour supply, suggesting for example that in Germany there is large unutilised labour potential. However, he recognises that the trend over the past decades has been towards a reduction of working time, so that changes in the regulations that determine the overall time worked would face significant public opposition.

[15] In their projections of participation rates for the Euro area Balleer et al. (2009) show that while increasing age-specific activity rates due to cohort effects have been and will be contributing to sustain overall economic participation, in the long-term workforce ageing compensate for this effect, so the overall participation rate in 2030 is projected at the same level as in 2007. Similarly Bijak et al. (2007) in their baseline scenario project a decrease of the overall participation rate (for the EU-25, Norway and Switzerland) from 56.6% in 2002 to 48.7% in 2052. Both studies also find that migration makes a positive contribution to the overall participation rate because new migrants are on average younger and therefore tend to have higher participation rates than the native population – in Bijak et al.'s projections participation rate in 2052 would go down to 46.1% without the contribution of post-2002 immigrants and their descendants.

childcare facilities, the fertility rate could fall even further, thus exacerbating the contraction of the working age population in the long run (Blotevogel and King 1996).

Whether it is possible, or indeed desirable, to increase significantly the domestic labour supply by raising economic activity among younger and older workers is also dubious. Trends over the last 30 years showed a decrease in participation rates of young people in many industrialised countries, due to an extension of enrolment in education. Reversing this trend, while further increasing participation in higher education, may prove a difficult policy objective. As far as the older workforce is concerned, encouraging later retirement, while relieving the financial burden on pension systems and providing additional workforce, can be an unpopular solution and brings its own problems such as higher labour costs, general conservatism and the need for retraining (Blotevogel and King 1996). In other words, this option may not be an appropriate response to a decline of the young working-age population because older and younger workers are imperfect substitutes in the labour market (Johnson and Zimmermann 1993).

It is therefore clear from this discussion that there are limits to the potential of policy reforms to boost labour supply. In democratic nations, social policies can at most change incentive structures and there is no certainty that people will change their employment decisions accordingly. In addition, most measures will involve a time lag before they take effect, i.e. policies encouraging participation in the labour market through gender equality or reforms of the educational and pension system require some time to become effective and offer therefore no solution for immediate and pressing shortages (Zimmermann 1995b; Doudejns and Dumont 2003). It comes as no surprise then that immigration is often seen as a quick-fix for labour market imbalances and, in some cases, even represents a temporarily convenient way of evading the need to undertake necessary reforms to raise participation of the existing population (Coleman 2006).

3.2.2 Factors of labour demand

In macro-economic terms, labour inputs in the productive system depend not only on the number of workers employed but also on their productivity. In a modern economy, increased productivity per head is a more influential driver of economic growth than labour force growth. Therefore, increasing productivity represents a possible solution to labour shortages. A prolonged fall in labour supply could stimulate technological innovation, capital substitution and productivity growth. In other words, labour demand could also fall to match declines in labour supply. Some activities that are no longer profitable can be dismissed or outsourced to countries where labour cost is lower – a strategy widely pursued in manufacturing and agriculture over the last decades. At the same time, market forces may operate and push up wage levels at the bottom of the occupational structure, helping resolve problems of low pay.

The productivity of labour has considerably risen in the 20th century, and it is plausible to expect that this trend will continue in the foreseeable future. However, productivity growth in the last few decades has been considerably lower in Europe than in other industrialised economies (e.g. Kretschmer 2009). Moreover, modernisation of economic systems brings about significant restructuring of the labour market involving not only job losses but also job creation. While some industries are contracted or exported, thereby creating redundancies in the domestic workforce, labour demand increases in high productivity sectors. Service economies have created increasing demand for highly-skilled workers which has, to a large extent, matched the growing supply of human capital resulting from expanding participation in tertiary education.[16] However, globalisation of the 'knowledge' economy has also contributed to a heightened international competition for highly-skilled workers, fuelled by demand in fast-growing sectors experiencing labour shortages that in the short-term could not be met by adapting domestic education systems or retraining workers made redundant in 'old' industries. Preference for overseas workers has been further shaped by skills such as language, knowledge of foreign markets or cutting edge technologies used elsewhere. This combination could persist in the future, exacerbating domestic shortages of highly-skilled workers and further enhancing the internationalisation of skilled labour (OECD 2009).

Moreover, opportunities to reduce demand for manual labour through technological innovation and outsourcing of the production to labour-abundant countries are not unlimited. Some economic sectors are still labour-intensive and involve occupations that have to be performed locally: this is the case for several industries such as construction, retail, hospitality, transport, health and social care, cleaning, garbage collection, and private security. In these sectors labour market restructuring over the last decades has brought along an increasing demand for lesser-skilled, low-paid migrant labour to perform tasks that long-established workers were not anymore available to do.[17].While some argue that there is some further potential for technological innovation to reduce the reliance on manual labour in these sectors and for 'offshoring' to externalise services which can be provided remotely and/or delivered electronically (Demeny and McNicoll 2006), other observers suggest that demand for workers in lesser-skilled, low-pay occupations is also set to continue (Münz 2007; OECD 2009). Nearly a decade ago McDonald and Kippen seemed to be right in suggesting that the "maintenance of the service sector in these economies, even at current levels, will tend to stimulate a demand for immigrant labor on a scale never seen in all but the traditional immigrant-

[16] One of the pioneering studies looking at the future of the labour market in the U.S. – the Hudson Institute's "Beyond 2020" report – concluded that "the development, marketing, and servicing of ever more sophisticated products – and the use of those products in an ever richer ensemble of personal and professional services – almost certainly will create more jobs than the underlying technology will destroy" (Judy and D'Amico 1997: 3).

[17] Socio-demographic trends also played a role in the contraction of domestic labour supply for these occupations, namely the decrease in the size of the youth cohorts entering the labour force with little formal education, in rural-urban migration and in the availability of young women to take up (at least temporarily, i.e. before marriage and motherhood) 'dead end' jobs (Massey et al. 1993).

receiving countries" (2001: 23). Similarly, Castles and Miller (2009) argued that the reliance of the agricultural sector on migrant workers is also likely to continue if the EU Common Agricultural Policy continues to subsidise local producers. Should that not be the case the production would probably be outsourced because the sector would not be able to compete on the global market.

3.2.3 Impact of ageing on labour demand

Demographic trends affect the labour market not only by shaping workforce size and characteristics but also by increasing labour demand from some industries.[18] This is certainly the case of the health and social care sector, which will undergo demographic pressures on both labour supply (because of increasing competition with other industries in attracting smaller cohorts of new entrants in the labour market) and labour demand (because of ageing and the increasing demand for elderly care). From this perspective the sector can be considered as a 'litmus paper' of the impact of demographic change on demand for migrant labour. In several European countries the provision of health and social care[19] is highly reliant on migrant workers in professional and/or direct care roles in both institutional and domiciliary care settings. In southern European countries a pattern of care for older people in the home employing, often irregularly, female migrant carers has emerged as the main response to changing family roles and the inadequacy of formal care provision (Sciortino 2004; Ambrosini 2005b).

While socio-demographic trends have certainly contributed to the growing inadequacy of the existing informal care provision and the rising demand for paid care labour, a high reliance on migrant carers has emerged as a symptom of the inability of the long-term care sector to recruit sufficient domestic workers under current employment conditions. Research has highlighted the interconnectedness between the undervaluing and underfunding of long term care for older people, low pay and poor working conditions in the care labour market and the recruitment of migrant care workers (Bettio and Plantenga 2004; Phillipson 2007; Simonazzi 2009). In particular, as the care industry in Europe is largely funded through public finances, budget constraints and the need to cut public expenditure faced by many EU countries are putting a strain on the care labour market and limiting opportunities for improving working conditions, thereby making the sector increasingly unattractive to the domestic workforce (Cangiano et al. 2009; Walsh and O'Shea 2009). Hence, the impact of demographic trends on demand for care labour is mediated – among other factors – by the institutional framework regulating the care sector.

[18] The aging of the population will alter the occupational structure not only by raising the needs for a wide array of care services, but also by shaping consumer demand for other services for healthy and wealthy older people, such as leisure and recreation activities, public transports and household maintenance tasks. Most of these services will be labour-intensive, i.e. with a limited scope for technology to replace labour (Martin 2009).

[19] On average the health and social care sector accounts for 10% of the labour market in the EU-27, with higher proportions in Northern and Western European countries (e.g. 18% in Denmark and 16% in the Netherlands).

The magnitude and pace of population ageing raise concerns for the sustainability of existing models of long-term care provision. Although much of the debate around the future demand for care is cost-driven, increasing attention is being paid to workforce issues. The extent to which ageing will bring about the need to expand the workforce employed in the provision of formal care services will depend on a various factors, namely the prevalence of disabilities and long-term health conditions; the amount of informal care provided within the family; and the introduction of new labour-saving technology. The latent demand for migrant labour further depends on the future capacity of the sector to attract workers from the domestic labour force, and particularly from currently inactive or underemployed groups (Fujisawa and Colombo 2009).

This complexity of factors and their mutual interactions make it difficult to forecast workforce needs in the care sector with a reasonable degree of accuracy. Existing projections are typically demand-driven – i.e. care needs are projected on the basis of demographic trends (including household structure and living arrangements) and possible trajectories for the health status of the population (e.g. prevalence of disability) – and use sensitivity analysis to explore the impact of assumptions made. The outcomes of these projections suggest that the growing number of older people will result in greater demand for care despite any reduction that may ensue from a declining prevalence of disabilities and health conditions (Comas-Herrera and Wittenberg 2003; Wanless 2006). For example, social care workforce projections for England show that, in the base case scenario (i.e. assuming constant proportions of older people receiving informal care), the number of workers employed in adult social care would need to increase by 53% in only 15 years (between 2010 and 2025) to meet the projected care needs (Eborall et al. 2010). Other research exploring scenarios for the future availability of informal carers provide a mixed picture. Projections of informal care supplied by adult children to their older parents suggest that there will be a gap due to increasing female labour force participation rates and the decline in co-residence which may boost demand for formal care services (Pickard 2008). However, this gap could be mitigated by a less than proportional increase of older people with no surviving children (Gaymu et al. 2007) and by a more than proportional increase of older people living with their spouse (Pickard et al. 2000). Existing projections do not attempt to consider factors affecting the potential labour supply of care workers. However, many observers agree that in the absence of structural reforms and a step change in the public funding allocated for older adult care – an unlikely scenario given the future constraints on public expenditure – the sector will hardly be able to meet its staffing needs by solely relying on a domestic labour supply (Cangiano et al. 2009; Martin 2009; OECD 2009; Simonazzi 2009; Walsh and O'Shea 2009).

Conclusions

The idea that Europe, in order to maintain its levels of economic prosperity, will need large immigrant flows to compensate for the decline and ageing of its population has gained significant consensus in academic and policy debates on the future of European societies. This paper has provided a critical review on the role of demographic trends as structural pull factors of international population movements. It has investigated the theoretical approaches, empirical evidence and possible scenarios providing a basis for the understanding of how contracting and ageing demographics have been and will be driving the demand for migrant labour in Europe.

The minimal contribution of demographic studies to theory-development in the field of migration has been recognised as a general weakness of the discipline (Tabutin 2007). This review has come to the same conclusion in relation to the specific questions it has addressed – i.e. that there is a lack of an exhaustive theoretical framework explaining how demographic trends can trigger a demand for immigration. The theory of the demographic transition explains only how push factors operate in the sending context, and does not deal with the role of population change as a pull factor in post-transitional demographic regimes. The assumption that migration occurs as a result of a demographic differential between sending and receiving countries proves neither necessary nor sufficient if considered against the complexity of contemporary migration trends and routes. More recent studies advancing the idea that the future contraction and ageing of receiving countries' populations and workforces, by triggering labour shortages and creating demand for specific jobs, can represent a powerful magnet for international migrants has not led to the formulation of a proper conceptual framework – nor has it been sufficiently tested on empirical data. This was also the case for the literature on 'replacement migration', which has focused on the feasibility and demographic consequences of using migration as a tool for achieving 'desirable' demographic objectives, without providing a deep understanding of the processes through which a need to fill demographic gaps with migrants would emerge.

The main body of migration theories using concepts and approaches developed within other disciplines has also largely neglected the role of demographic factors operating at the destination of migratory flows – building, essentially, on the theory of the demographic transition to explain how demographic trends in the sending contexts interact with economic and social factors and create the structural conditions for emigration. If, on the one hand, the general fitness for purpose of theories explaining the causes of population movements has been widely criticised (e.g. Davis 1988; Arango 2000), this review points to a further weakness of this theoretical literature, i.e. its inability to explain migration within a context of demographic ageing and decline. In European some countries (e.g. Italy), an unmet need for older adult care is already one of the most significant – if not the main – driver of labour migration. Retirement migration – driven by factors generally neglected in the classical migration theories (a milder climate, a higher purchasing power) – has led to massive

migratory movements in the 2000s. The fact that the main migration theories were formulated at a time when the population of all receiving countries was growing irrespective of the demographic contribution of migration, and the consequences of population ageing on labour market and welfare provision had not yet manifested, means that these theories are ill-equipped to reflect the impact of post-transitional demographic dynamics characterised by contracting and ageing receiving populations.

Empirical contributions, mainly by economists, have also tended to understate the role of demographic pull factors. The key object of a number of econometric studies has been the *impact* of immigration on the native labour force, i.e. whether or not migrants displace domestic workers and depress their wages. With few exceptions, studies modelling the *determinants* of international migrations have focused on income levels and differentials, treating demographic and other non-economic factors as control variables and/or paying greater attention to push effects. On the other hand, analyses looking at the impact of demographic changes on the labour market have considered only incidentally the possible implications for the demand for imported labour. Yet this paper has pointed out that, for a deep understanding of the links between demographic dynamics, labour market trends and demand for migrant labour it is important to consider the complexity of possible transitions between different economic statuses and positions in the job hierarchy related to socio-demographic changes. As suggested also by some formulations of the segmented labour assimilation hypothesis, empirical studies investigating the demographic processes underlying an emerging demand for immigration should look at the changing role in the labour market of specific socio-demographic categories: young workers (students), older workers, 'inactive' women, and internal migrants. This has rarely been done and there is certainly large scope for filling this gap in the demographic and labour market empirical literature.

Even with no comprehensive theoretical or analytical framework demonstrating that workforce decline and population ageing generate a strong demand for labour immigration, it seems sensible to assume that the dramatic contraction of the workforce that some EU countries (e.g. Italy, Germany, Spain, Poland) would experience in the absence of future positive net migration (and with no rise of fertility levels) is likely to bring about significant imbalances in these labour markets. Shrinking new cohorts entering education and the workforce (with decreases of the 20-34 age groups by more than 30% in some cases) may well represent a constraint for maintaining labour supply in entry-level jobs, or even for the endogenous expansion of the highly-qualified workforce needed for a knowledge economy if near-to-universal access to university education is not ensured. On the labour demand side, ageing populations are likely to boost the need for expanding the workforce in long-term care, owing to a marked decrease of the inter-generational support ratio. These demographic challenges will concern to a lesser extent other countries (such as France) where positive natural change will significantly slow down population ageing and decline.

It is then clear that the sole presence of a demographic shortage does not automatically imply a demand for 'replacement migration'. Other constraints in the mobilisation of unused or under-employed labour pools are likely to reinforce the equation 'demographic gaps equal demand for replacement migration'. Yet the extent to which contracting and ageing demographics may lead to a growing demand for immigration remains highly uncertain. According to the official EU labour market forecasts, in the short and medium term further labour market polarisation – i.e. a greater concentration of labour demand at the high and, to a lesser extent, low ends of the occupational hierarchy – will be met by developments in labour supply if net migration continues at about the current levels. In other words, demand for migrant labour seems to be set to continue in highly-skilled as well as low-skilled jobs – where migrant workers are already overrepresented. In the longer term, a wide range of factors, and related policy adjustments, can affect the demand for immigration. Mobilizing labour reserves from the inactive, unemployed and under-employed population; developing and adopting labour-substitutive technologies; and outsourcing and importing goods and services that do not need to be produced locally are all potential alternatives to importing overseas labour. Each of these adjustments involves costs, is subject to constraints in its implementation, and taken in isolation could not compensate for demographic shortages in countries with 'lowest-low' fertility. From a demographic perspective, a major challenge of workforce ageing will be that older workers are unlikely to represent a viable or convenient alternative to the decline of the young working-age population because they may not have the skills required by newly-created jobs or may need extensive and costly re-training. However, a combination of these strategies could significantly reduce (or, in some EU countries, eliminate) the demographically-induced mismatches between labour demand and supply. Therefore, there is no simple equation 'demographic gaps equal demand for replacement migration': the strength of this causal link will depend on a number of intermediate factors and will be subject to a considerable degree of variation across the EU.

Needless to say, the institutional context in the realm of migration policy is the other key determinant of the degree to which a 'latent' demand for immigration will give rise to actual migration flows. The debate about whether it is sensible to build on immigration to fill labour shortages, and the complementarity or substitution between domestic and immigrant workers, is complex and controversial. On the one hand, evidence shows that migrants play an important role in improving efficiency of European labour markets by meeting specific skill shortages, by supplying lesser skilled workforce for low-pay jobs avoided by domestic workers, and by ensuring a better regional match of workers to jobs (i.e. offsetting the low mobility of domestic workers within national borders as well as between EU member states). On the other hand, opponents of liberal immigration policies criticise the pro-active recruitment of overseas labour in presence of high unemployment (currently the case in many EU countries) as a 'quick fix' to fill short-term labour gaps, arguing that such an approach does not allow market forces to redress labour market

imbalances (i.e. wages remain low and the domestic unemployed are not attracted back into work) and that there are long-term social costs associated with migrant integration. In addition to these economic and social arguments, there are other constraints which must be considered if a migration policy fulfilling demographic objectives is to be formulated. First, positive net migration can help sustain the size of the workforce but cannot stop population ageing under any plausible and politically-acceptable scenario. Second, the functionalistic logic underlying labour migration policies (and, to a lesser extent, student migration) cannot be applied to the governance of family-related inflows and humanitarian migration. In addition, European countries - as all democratic nations - exert virtually no control over out-migration. This means that actually most of the flows contributing to net migration levels are not easily manageable with a view to meet demographic targets. Thirdly, the great diversity of demographic trends across the EU, combined with the regime of free-circulation of EU citizens and permanent residents, implies that non-EU migrants will be entitled to move from countries with greater latent demand for immigration to countries with little or no demographic shortages. This would be a major obstacle to adopting a more open and pro-active immigration policy within a shared European system of migration governance.

A final point needs to be made. As extensively discussed throughout the paper, demographic and non-demographic forces shaping migration trends do not operate as unidirectional cause-effect relationships and cannot be considered in isolation. I have deliberately taken a one-sided approach, focusing on pull demographic factors. Yet it is important to acknowledge that the role of demographic change in current and future migration scenarios has to be understood globally, i.e. by the joint-consideration of forces acting in receiving and sending countries. The fact that ageing and contracting demographics are likely to act as powerful drivers of a demand for immigration in Europe and other advanced economies does not imply that the supply of potential migrants from (hitherto) growing populations in the South of world will be unlimited and unconstrained. On the contrary, the same demographic processes acting as a pull force in today's immigrant-receiving countries will soon start to operate in many of the sending countries which have supplied large number of migrants in the recent past – e.g. North Africa, Latin America, and, even more so, in Central, Eastern and South-Eastern European countries of origin of intra-European migrants. The progression of these countries along the pathway of the demographic transition will bring along the end of the current 'youth bulge' – easing the pressure on the labour market – and fast population ageing – increasing care needs of the older population and the opportunity-cost of care-related migration. Therefore a full understanding of how demographic pull forces will actually affect future migration scenarios cannot be achieved without contextual consideration of demographic trends at the origin of migratory routes.

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