POPULATION TRENDS, EMPLOYMENT AND LABOUR MIGRATION IN THE EUROPEAN UNION[1]

Serguey Ivanov
Population Division, DESA, United Nations Secretariat, New York

Introduction

In the coming decades most European countries will experience significant contractions of the labour supply. Exactly by how much the labour force will shrink depends on several factors, chief among them being fertility and migration. Future trends in population of working age depend on past fertility (length of the period of below-replacement and the width of the gap with replacement) and anticipated paths of fertility (including its quantum and tempo components) and international migration. Working-age population (WAP)[2] determines the maximum boundary of the pool of labour supply, but how much that potential is used depends on the propensity and opportunity to get gainful employment, as well as the length of actual worked time. If only for economic reasons, the supply of labour is of paramount importance. For instance, controlling for population size and age structure, relative macroeconomic performance equals total time worked multiplied by labour productivity per unit of time.

Working-age populations are already decreasing in Germany, Italy and the European successor States of the former USSR, but not elsewhere. Yet, the threshold separating stagnation from decline is imminent. For most European countries it is just around the corner. In the past, WAP has been nearly always growing. Continuous large-scale and accelerating reduction of WAP will be an unprecedented phenomenon carrying a profound impact on labour relations, social climate, and international relations.

The public and governments, however, sometimes equate demographic projections with economic forecasts that, by their nature, have mixed records of reliability, which provokes downplaying the significance of adverse demographics. Concurrently, there is not much experience in (and several reservations against) incorporating long-term concerns into current policies, particularly if it would involve reconsidering popular social compacts and challenging deep-entrenched attitudes. This started to change as the serious economic and social consequences of population ageing became the subject of hot debates and entered the realm of decision-making. The true scale of the impacts of demographics on the labour force will be felt later.

This paper addresses three components of labour supply in the European Union within its borders before enlargement in 2004 (EU-15) through a brief review of their current levels, followed by the presentation of projection scenarios for the year 2050. The paper concludes with some considerations on the factors that may affect the future evolution of these three components of labour supply.

---

[1] The views expressed are those of the author and are not necessarily those of the United Nations.

[2] WAP is defined as population aged from 15 to 64. This range does not necessarily correspond to national definitions but is convenient for international comparisons and aggregations. The 2004 edition of United Nations population estimates and projections (UN forthcoming) was used as the source of data on WAP.

Labour supply (LS) is defined here as the total number of hours worked in a year in the economy. LS is the product of WAP, which, in turn, is the product of past fertility and net migration, participation rate (PR, alternatively called "economic activity rate"), employment rate (ER) and working time defined as hours worked per worker per year (WT)[3]. WT, in turn, is the function of the length of the working week, vacation time, number of days-off, strikes, sick leave and absenteeism. The three labour indicators are collapsed into one composite labour utilization index (LI), which transforms WAP into LS.

LS = WAP*LI

LI = PR*ER*WT

This paper focuses on EU-15, because the countries of the group have already achieved significant harmonization of regulations and policies, and intend to create a unified labour market and common immigration policies. Many EU-15 countries, however, are remarkably diverse in terms of demographics and labour utilization. The whole gamut of cross-country variations is encompassed by the four largest countries: France, Germany, Italy and the United Kingdom. Since the effects of population trends on labour supply in the European countries east of EU-15 are even more adverse, what applies to EU-15 is likely to apply there.

Factors of labour supply

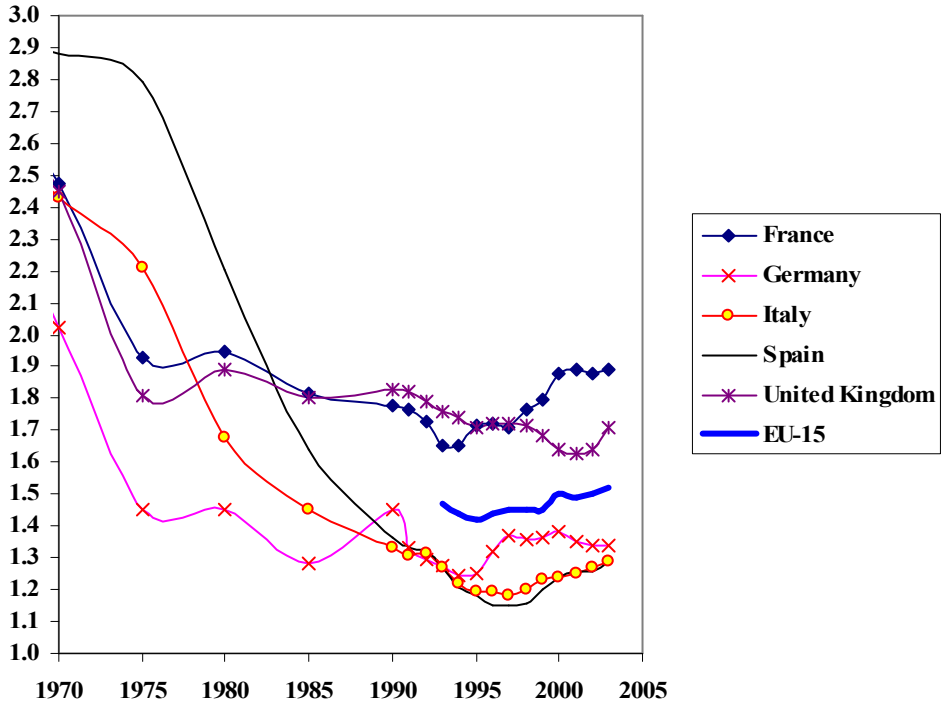
Fertility

During the 1970s, period fertility fell below replacement in 11 of EU-15 countries; Greece, Ireland, Portugal and Spain crossed the 2.1 threshold in the following decade. In spite of ensuing fluctuations, TFR returned to replacement level recuperated nowhere (Figure 1) and since 1993 its average for EU-15 remains very close to 1.5. The diversity of reproductive behaviours in below-replacement countries produced significant variations in period total fertility leading to diverging trends of population size. Indeed, the difference between 1.9 children per woman in France and 1.3 in Italy suggests the difference between very slow contraction of labour force in the former and abruptly falling WAP in the latter.

The average number of children per woman results from context-specific patterns of partnership and reproductive behaviour (United Nations, 2003). Strong and otherwise positive factors depress fertility preferences. They include, but are not confined to (a) need for double incomes to sustain a socially acceptable standard of living; (b) ability of women to enter the labour force combined with the market's demand for women's labour; (c) non-economic reasons and opportunities to pursue carriers (such as the aspiration for self-fulfilment); (d) high direct and opportunity costs of children.

[3] Dividing the economically active population by WAP yields PR. Economically active population consists of persons either employed or unemployed but actively seeking a job. Dividing employed population by economically active population produces ER.. Databases of Eurostat and OECD were used as sources of labour and migration data.

Figure 1. Total fertility rates, 1970-2003



The interplay of these factors is country-specific. For instance, relevant contextual characteristics include the compatibility of women's gainful employment and childbearing; gender equity in childrearing and in household chores; age-specific prospects to get jobs and housing; diversity of partnership options; social safety nets (including public child support); and, in general, the place of children in society and culture. End results of reproductive behaviour differ both in terms of the average number of children per woman and the distribution of women by family size.

For example, the relatively flat distribution of family sizes in France (including relatively low prevalence of childlessness) suggests that the society is rather uniform with respect to reproductive goals and actual behaviour. By contrast, a 20 percent prevalence of childlessness in Germany points to the existence of polarized lifestyles. A United Nations study (2003) provides the evidence that with respect to several salient parameters of partnership and reproduction, EU-15 consists is not homogenous. In Austria, Germany, Greece, Italy and Spain, most factors are conducive to particularly low fertility, while in several in Northern European and other Western European countries – France, in particular – most contextual factors sustain overall fertility at (relatively) high and stable levels.

The idea of diversity of sub-replacement fertility regimes is consistent with the finding (Goldstein, Lutz and Testa, 2003) that young women (20 to 34 years) expect to have, on average, 2.2 – 2.3 children in France and the in the United Kingdom, compared with 1.3 – 1.5 in Germany and Italy. It seems that lowest-low fertility regime solidifies, through the formative influence of

parent's cohorts, fertility preferences of the young cohorts. In Italy and Germany these young cohorts have been thoroughly submerged in a culture of small family sizes, while in France not much has changed in the societal attitudes that favour childbearing. Such intergenerational, rather than "environmental" shaping of reproductive behaviour suggests that the divergence of fertility levels may last quite long.

In all EU-15 countries the age at childbearing has increased in recent decades and in several countries it keeps increasing. Continuing postponement creates the tempo effect, whereby observed period fertility rates underestimate underlying cohort fertility. For example, in the European Union in 1995-2000 the adjusted (weighed) TFR (1.71) was significantly higher than the conventional weighed TFR (1.46) (Sobotka, 2004). The tempo effect implies that the eventual stabilization of the age at childbearing will push up the conventional period rates, which determine the actual number of births. There is no agreement on the extent of eventual readjustment, but it is highly unlikely to lift the conventional TFR above the level accepted by the United Nations for the medium variant of population projections (1.85).

Labour utilization

Labour regulations and workers' entitlements substantially limit labour utilization in EU-15. For instance, in 2002 the average work week in EU-15 was 37.4 hours as compared to 42.9 hours in the United States. In some countries, economic disincentives and strong preferences for leisure over incremental income motivate many people to quit working before reaching the statutory retirement age or dissuade them from working beyond it.

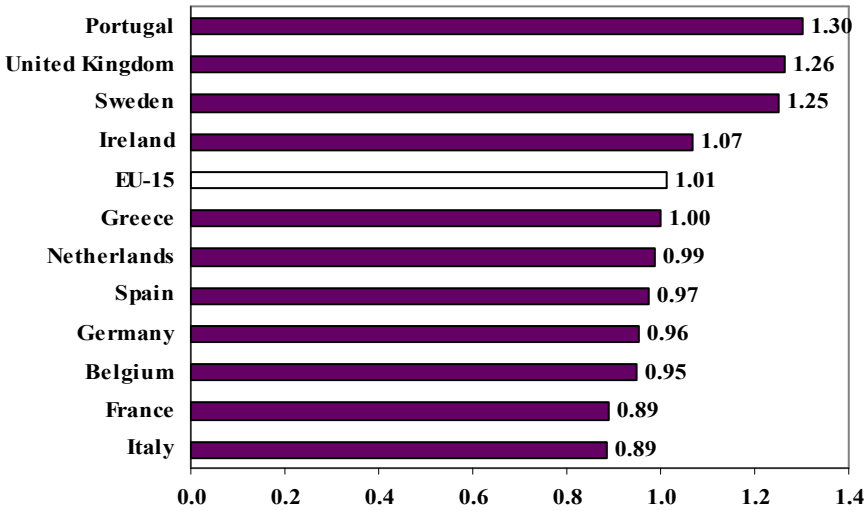
Table 1 shows that 70 per cent of EU-15 WAP either work or actively seek employment, but among the four large countries this variable ranges from 62 per cent in Italy to 77 per cent in the United Kingdom. Unemployment rates are high and relatively uniform. During the 1990s, 9 per cent of economically active population of the Union were jobless. Annual hours worked per worker ranged from 1450 in France and Germany to 1775 in the United Kingdom with EU-15 average at 1600 as compared with 2000 in Czech Republic and Slovakia and as much as 2400 hours in the Republic of Korea. On the scale of the labour utilization index Italy and France score lowest while the United Kingdom and Portugal – highest (figure 2).

The European Union uses a simpler employment indicator that relates the employed population directly to the population of working age, bypassing participation rates. As a result, unemployment (lack of immediate job opportunities) is blended with the reluctance to actively seek a job. Also, the EU indicator doesn't include time spent working. The European institutions formulate and monitor employment goals in terms of that indicator. The European Commission adopted, at its Lisbon Summit, the target to universally reach, by 2010, the employment index of 70 per cent. The average shortfall with respect to that goal in 2001 appeared modest (6 percentage points), but the cross-country variation was large. For instance, the United Kingdom already surpassed the Lisbon target while Italy and Spain were almost 10 percentage points below the EU-15 average but differed with respect to trends (table 1).

Table 1. Labour indicators

Country	*Participation rate 2002 (PR)*	*Employment rate 1991-2001 (ER)*	*Annual hours worked per worker 2000 (WT)*	*Labour utilization index (LU)*	*EU employment indicator*	
					1991	*Change 1995-2001*
France	69	89	1450	0.89	63	4
Germany	71	92	1450	0.96	66	1
Italy	62	89	1600	0.89	55	4
United Kingdom	77	92	1775	1.26	72	3
Austria	71	95	…	…	68	0
Belgium	65	92	1600	0.95	60	4
Denmark	80	96	…	…	76	3
Finland	75	88	…	…	68	6
Greece	58	90	1900	1.00	55	1
Ireland	68	90	1750	1.07	66	11
Luxembourg	64	97	…	…	63	4
Netherlands	77	95	1350	0.99	74	10
Portugal	78	95	1775	1.30	69	6
Spain	63	85	1800	0.97	56	10
Sweden	78	94	1700	1.25	72	2
EU-15	70	91	1600	1.01	64	4

Figure 2. Labour utilisation index, 2002



Migration

According to OECD estimates for 2000, documented foreign workers in EU-15 numbered 8.9 million making up 5 per cent of the labour force (table 2). Eighty per cent of them resided in the four largest countries. Countries of the Union rely on foreign labour in varying degree. The share of foreign citizens in the labour force varies from 1 per cent in Finland to 9-10 per cent in Austria, Belgium and Germany. Luxembourg, where more than half of economically active population is foreign, is an outlier.

Table 2. Foreign labour

Country	*Stock (thousands)*		*Percentage of non-EU citizenshin stock*		*Total inflow 1991-2000 (thousands)*	*Percentage of stock in labour force*	
	1991	*2000*	*1991*	*2000*		*1991*	*2000*
France[a]	1,506	1,578	54	62	226	6	6
Germany	2,025	3,546	...	78	2,935	5	9
Italy[b]	285	851	100	100	...	1	4
United Kingdom	828	1,229	52	61	...	3	4
Austria	277	242	84	96	291	9	10
Belgium[c]	303	386	27	32	49	7	9
Denmark	71	97	76	69	27	2	3
Finland[d]	24	37	...	85	...	1	1
Greece	...	...	...	...	...	...	...
Ireland	39	64	...	...	51	3	4
Luxembourg	93	153	6	7	192	48	57
Netherlands[e]	214	235	55	51	...	3	3
Portugal	55	100	71	...	...	1	2
Spain[c]	171	200	59	45	353	1	1
Sweden	241	222	...	...	...	5	5
EU-15	6,133	8,939	...	...	...	4	5

Notes:

[a] data on EU nationals do not include citizens of Austria, Finland and Sweden

[b] data do not include EU citizens

[c] later estimate refers to 1999

[d] estimates refer to 1994 and 1998

[e] later estimate refers to 1998

In the 1990s the total stock of foreign labour in EU-15 increased by almost 50 per cent[4]. The increase essentially resulted from surging immigration into Italy, Germany and the United Kingdom. These estimates do not include undocumented migrants, whose numbers soared in

[4] It is possible that the figure for Germany, which was included in the 1998 SOPEMI report but omitted in later editions, underestimates the number of foreign workers in Germany, leading to the overestimation of ensuing increase.

Spain and Italy. The stock of foreign labour increased during the 1990s in virtually all EU-15 countries, but the magnitude of growth varied considerably. For example, the number of documented foreign workers increased in France by only 5 per cent but it tripled in Italy. Substantial differences between the cumulated inflows (in 1991-2000) and the growth in stocks suggest large-scale rotation. In France this rotation resulted in substitution of EU citizens (whose number decreased) by migrants from outside EU-12[5].

Flows are more amenable to policy interventions than are stocks of migrants. Also, flows (often expressed in terms of net migration) are used as assumptions and operative variables in demographic projections. Considering EU-15 as an entity, the migratory balance would equal the sum of net influxes into member countries if all these flows originated outside the Union. This assumption, however, is incorrect for the past and for the present.

Although in most EU non-EU citizens outnumber EU nationals, EU citizens still constitute sizeable proportions of foreign labour force[6]. The part of EU nationals in the combined stock of foreign labour decreased from 40 per cent in 1991 to 30 per cent in 2000, implying that the percentage of non-EU nationals in net migration into the Union was substantially higher than their share in the 1991 stocks.

Direct data on labour migration flows by nationality are scarce. Data on inflows of foreign population by nationality are more easily accessible, yet matching outflow statistics are scant. As a result, direct estimates of the part of EU nationals in net migration are available only for Germany and the Netherlands. In 1991-2000 EU citizens constituted only 7 per cent of the net migration into Germany and 16 per cent into the Netherlands. Nine out of every 10 economically active migrants who came to the United Kingdom between 1990 and 2000 were not-EU nationals. In France, the proportion of non-EU nationals among new total admissions for residence increased from 40 per cent in 1994 to 80 per cent in 2002, including 46 per cent of nationals of African countries (Tierry, 2004). The increase in the number of non-EU-nationals compensated for the decrease in the number of EU-nationals between the mid-1980s and mid-1990s.

The citizens of EU-15 member states can freely settle and work in any country of the Union; equivalency is achieved for most high school and university diplomas. Under these circumstances one would expect robust redistribution of labour. Yet, this is not happening. For instance, less than 4 per cent of EU workers hold jobs outside their country of citizenship as compared to almost 40 per cent of Americans who live outside their state of birth[7].

Differences in employment prospects and wages constitute the strongest economic incentive to move from country to another. The correlation between these incentives and migration volumes, however, is not linear. Beyond a certain threshold of the differences between wages and employment prospects in sending and receiving countries, the attractiveness of working abroad weakens with respect to the inconveniences of leaving the familiar environment and adjusting to foreign culture. It was observed that among OECD countries, GDP per capita of the receiving

[5] EU-15 except Austria, Finland and Sweden who acceded in 1995

[6] For Italy, where EU citizens are not included in the count of foreigners, the total number of foreigners was adjusted upward in the following calculations. The "guesstimates" of the numbers of EU nationals in Italy in 1991 and 2000 are 100 thousand and 200 thousand, respectively.

[7] According to the 1980 American population census, 36 per cent of population lived in the state other than the state of birth; by 1990 that proportion increased to 38 per cent (in 2000 the relevant question was omitted from the census questionnaire). The indicators for Europe and the United States are different but comparable. They imply that in the United States spatial mobility is several times higher than in Europe.

country is typically 50 per cent or higher than that of the sending country. When this ratio falls, migration decreases. Currently, intra-EU-15 differentials of GDP per capita are below 50 per cent. Another, more specific factor restraining intra-Union migration is that social security nets are universally praised, but eligibility criteria and entitlements vary and are not exportable.

Concurrently, the reservoirs of potential migrants from outside the Union may, for all practical purposes, be considered unlimited. Deep economic gaps separating the respective countries from the EU are likely to persist and incite migration for decades to come. It follows that immigration policies of individual EU member states or collective arrangements will remain by far the major factor shaping international labour flows in this part of the world.

Scenarios

Migration as eventual compensation for low fertility was explored in a well-known United Nations study (United Nations, 2000) that combined one fertility scenario with five migration scenarios using the "back-from-the future" approach, whereby the volume of immigration is defined as a function of preset demographic targets. Lutz and Scherbov (2003) used the probabilistic expansion of the alternative "if-then" approach to simulate a thousand scenarios combining a multitude of fertility, mortality and migration assumptions. The numeric results of these studies are consistent. Yet, neither set of projections explicitly introduced non-demographic variables.

Combining LU with demographic projections of WAP helps to enlarge the range of policy options. For that, labour supplies generated for 2050 by fertility, migration and labour utilization scenarios are compared with actual labour supplies in 2002. Two points in time provide quick snapshots of possible futures aimed at pondering the relative weights of demographic and non-demographic factors. This should not be interpreted as if the relevant processes are expected to be linear. In fact, the non-linearity is already factored in the demographic block, while doing the same for labour utilization factors would be unreasonably complex.

Two groups of scenarios were implemented. The first group consists of "if-then" scenarios, which combine four variants of the most recent United Nations population projections (United Nations, forthcoming) with two values of LU - effectively observed (for 2002) indices for respective countries and the index for Portugal that was highest among EU-15 countries in 2002. These scenarios determine LS in 2050. Two other scenarios use the "back-from-the future" approach to determine net migration needed to keep LS constant with medium-level fertility under two LU assumptions.

Table 3 summarizes UN projection assumptions. In the constant-fertility variant, total fertility remains constant at the level estimated for 2000-2005. The medium variant assumes that over the first 5 or 10 years of the projection period, fertility will follow the recently-observed trends in each country. After that transition period, in countries where total fertility is below 1.85 children per woman (all EU countries except France and Ireland) fertility is assumed to increase linearly at a rate of 0.07 children per woman per quinquennium. In France and Ireland, fertility is supposed to decrease slightly in order to converge at 1.85. As a result, in 2030 fertility levels will vary within a narrow interval of 1.69 (Italy) – 1.85 (France, United Kingdom and several smaller countries). In the high variant, total fertility is projected to remain at 0.5 children above the total fertility in the medium variant. For example, countries reaching a total fertility of 1.85 in the medium variant reach a total fertility of 2.35 in the high variant. In the constant variant, fertility is held at the level estimated for 2000-2005. The medium variant was calculated with and without

migration. This allows estimating the individual contribution of fertility and migration to the dynamics of labour supply.

Table 3. Assumptions of United Nations population projections

Country	*TFR in 2030*			*Average annual net migration (thousands), 2010-2050*	
	Constant	*Medium*	*High*	*Total*	Persons aged 15-64
France	1.87	1.85	2.35	180	103
Germany	1.32	1.73	2.23	600	477
Italy	1.28	1.69	2.19	360	185
United Kingdom	1.66	1.85	2.35	390	344
Austria	1.39	1.76	2.26	60	54
Belgium	1.60	1.80	2.19	40	36
Denmark	1.75	1.85	2.35	36	23
Finland	1.72	1.85	2.35	24	15
Greece	1.25	1.60	2.10	105	93
Ireland	1.94	1.85	2.35	60	57
Luxembourg	1.73	1.83	2.23	12	11
Netherlands	1.60	1.81	2.24	90	66
Portugal	1.47	1.81	2.31	120	75
Spain	1.27	1.73	2.23	180	158
Sweden	1.64	1.85	2.35	60	40
EU-15	1.57[a]	1.79[a]	2.27[a]	2,317	1,737

Note: [a] unweighed average

UN projection reckons that net migration into several EU countries, including Germany, soared during the 1990s and then subsided to the levels that are assumed to continue into the future. The assumption for Italy and the United Kingdom is that net inflows that have been growing rapidly in recent years reached saturation levels. Eurostat's assumptions are little different from the UN's. Eurostat projection assumes that in the late 2000s net migration into EU-15 will be higher than according to UN projections, but the ensuing decline will be steeper. Around the mid-point of the projection period net migration will stabilize -- for major receiving countries at approximately 10 percent higher level than according to UN projections. The

pertinent feature of both projections is the assumption that recent increases were transient and in the future migration will stabilize at lower levels.

Net migration into EU-15 would equal the sum of net influxes into member countries if all inflows originated outside the Union. This assumption, however, is incorrect. EU citizens constitute large percentages of foreign labour force. In terms of alleviating labour shortages for the entire Union, all flows of labour within the Union are irrelevant. Consequently, our assumption is that in the future, all immigration into EU-15 will come from outside the Union. Data reported above illustrate the changing structure of immigration and therefore are consistent with this assumption. For a projection benchmark, we apply the conservative estimate of the proportion of non-EU nationals in net influxes (75 per cent) to transform the observed data into the actual level of net migration in the early 2000s (table 5).

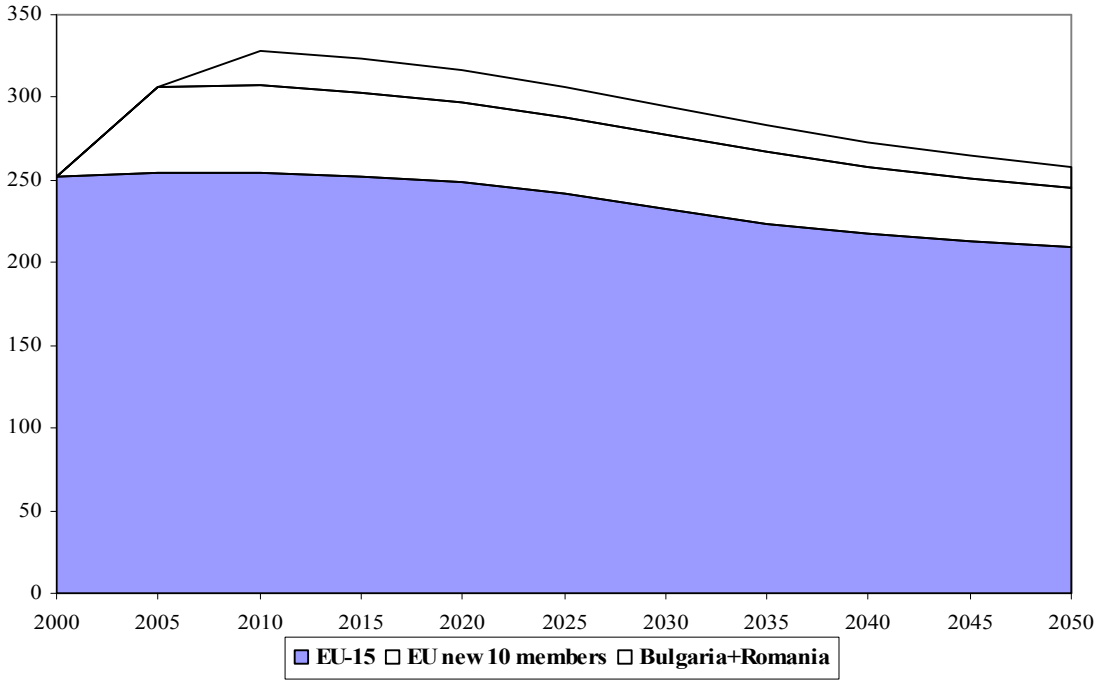
Results

Every eventual enlargement will increase the combined population of the Union. However, WAP will be shrinking between enlargements (figure 3). For instance, in 2004 WAP of the Union instantly increased by 52 million. The entry of Bulgaria and Romania will bring another 20-odd million. But the demographic decline will gradually wipe out those gains. Even assuming that fertility increases according to the UN medium variant (which is not guaranteed), and the cumulated net inflow of 36 million migrants (UN assumption) to 45 million (Eurostat assumption), by the middle of the century the combined WAP of 25 EU countries will drop by 40 million or 14 per cent. In the meantime, the US labour force will keep growing, surpassing EU-15 in about 25 years, and by 2050 closely approaching the combined population of EU-27.

Table 4 illustrates the impact of different demographic and labour utilization assumptions on labour supply. Even if fertility significantly exceeds replacement level (UN high variant), total WAP of EU-15 will decline unless net immigration increases above UN assumptions. This approach allows comparisons of the impacts of each variable by controlling the other two. For instance, the differences between the medium variant with migration and the constant variant with migration reflect the effect of fertility. Similarly, differences between two options of the medium variant reflect the impact of net migration. The effect of the rises in fertility from its current values to the medium level (1.85 children per woman) is more relevant than the impact of its further growth. At least from the current perspective this seems beneficial because raising current levels is perhaps easier trough policy interventions or even without them by just relying on tempo effects.

Typically, fertility effects are weaker than the impacts of migration and labour utilization. The anticipated fertility effect amounts to 5 per cent in Germany, Italy and the United Kingdom. It will be nil in France because fertility there is already at the medium level. Indeed, the effect would be more than twice as large had total fertility of the order of 2.35 had been achieved.

Figure 3. Working-age population of the European Union, estimate for 2000-2005 and projection for 2010-2050 *(millions)*



Source: United Nations 2004

Table 4. "If-then" scenarios of labour supply in 2050 (percentage of supply in 2002)

Country	*Actual labour utilization*				*Labour utilization of Portugal*			
	Constant fertility, immigation	*Medium fertility*		*High fertility, immigration*	*Constant fertility, immigation*	*Medium fertility*		*High fertility, immigration*
		Zero migration	*Migration*			*Zero migration*	*Migration*	
EU-15	82	74	86	98	106	96	111	127
France	92	89	92	105	120	115	120	137
Germany	75	63	80	91	97	82	104	119
Italy	63	61	68	78	81	80	88	101
United Kingdom	100	86	105	119	130	112	136	154

Net immigration of the magnitude assumed by the United Nations would add 7 per cent to WAP in Italy, 17 per cent in Germany, and 19 per cent in the United Kingdom. Lower figure for France (3 per cent) results from lower projected net immigration relative to population size – a level consistent with the recent analysis by F. Héran (2004).

Fertility increase to the medium level (or stability in France), coupled with the inflows of migrants (according to UN assumptions), will be insufficient to prevent large contractions of WAP in Germany, Italy and France, but not in the United Kingdom. Even hardly imaginable increases of total fertility by one child per woman (supported by immigration according to UN assumptions) could not prevent substantial contractions of WAP in Germany and Italy – in the latter country by as much as 22 per cent. For EU-15 as a whole, the medium variant yields a WAP contraction of 14 per cent: only high fertility could prevent decline.

Labour utilization has the highest potential in ascertaining steady supply of labour. Increasing economic activity, improving employment prospects and extending working time to significantly higher – but not unprecedented levels even within EU – would provide most EU-15 countries with more labour than they have now, even if fertility remains at current levels. This, however, will not be sufficient for Italy. In case of fertility increases according to UN medium variant, labour supply in Germany will be 4 per cent higher than now, in France – 20 per cent higher and in the United Kingdom – 36 per cent higher. Again, Italy will still face sever shortages. Even lifting the labour utilization index from the bottom to the top of the EU scale, and raising the total fertility rate to 1.85, maintaining immigration at 360 thousand per year would not be enough to prevent WAP decline. This is achieved only in the high fertility/high labour utilization scenario.

The results of the "back-from-the future" scenarios are summarized in table 5. Assuming that the demographic trends will unfold according to the medium variant of UN projections, and that country-specific LU will remain constant, immigration into EU-15 should double to prevent WAP contraction. As a result of demographic differences among countries, the need for foreign labour will vary greatly. Italy will need to quintuple the inflow of immigrants. The United Kingdom, on the other hand, would enlarge its labour supply with any inflow above the level equal to two-thirds of the current number of migrants. In France, the eventual increase of demand for foreign workers looks impressive only in relative terms because the absolute size of immigration is now modest.

Increasing labour utilization would decrease dramatically the demand for foreign labour. In fact, provided that migration inflows do not change, three-quarters of new migrants into EU-15 will contribute to the growth rather than to the stabilization of the labour supply. Italy, however, is the outlier for the country will still need to more than double immigration just to maintain the volume of available labour.

Table 5. "Back-from-the future" scenarios: net annual inflows needed to maintain the size of working-age population

Country	*Actual level of the early 2000s (thousands)* [a]	*Target level (thousands)*	*Per cent change*
A. Constant labour utilization			
EU15	863	1,630	89
Italy	135	750	456
Germany	165	440	167
France	45	160	256
United Kingdom	135	90	-33
B. High labour utilization			
EU15	863	220	-74
Italy	135	320	137
Germany	165	180	9
France	45	-180	-500
United Kingdom	135	-70	-152

Discussion

At this stage, EU-15 (and, by extension Europe, or even the entire group of developed countries) is heterogeneous with respect to all factors of labour supply. Moreover, implacable demographics are likely to strengthen that heterogeneity. This will necessarily have repercussions for the development of the Union. For example, continuing "business is usual" in the United Kingdom would wnsure the expansion of the labour force; all productivity growth will then translate into economic growth. In contrast, Italy would need to almost double fertility, maintain immigration and raise the labour utilization index by half just to preserve the labour supply. Differences in dynamics of labour supply could determine varying national priorities and perhaps conflicting national interests.

Although shortfalls of working-age population may have positive consequences (e.g. stimulating technological innovations), we assume that on the balance the society's interests point to the need to alter the trends leading to continuing shrinking of the labour supply. The crude calculations above illustrate the impressive magnitude of these trends. Yet, they limit the problem to the goal of sustaining the size of labour supply. Stationary labour supply implies that productivity growth becomes the sole source of economic growth, a rather uncharted territory.

Otherwise, stagnation or contraction of national economies may shift all sorts of balances in favour to better-endowed dynamic economies of the outside world. From the viewpoint of economic development as we know it any increment in labour supply above this bare minimum would be viewed positively. Moreover, stabilization of the labour supply by no means solves the multitude of economic problems associated with population ageing. As it was demonstrated in the United Nations study (2001), reversing this process through migration would involve incredible redistribution of the world population.

It is a platitude to say that the three components of labour supply considered above are shaped by multitudes of interacting factors. It would certainly be overambitious to try to develop an all-encompassing model of such interactions. Perhaps it would be more realistic to sketch selected policy-relevant factors keeping in mind that they may be interchangeable, complementary or antagonistic and almost unavoidably controversial (Demeny, 2003).

The determinants of reproductive motivations and the social mechanisms of their implementation in the modern societies are not yet understood enough to inform proactive policies. In particular, significant controversies remain about the factors separating the regime of "lowest-low" fertility from reproductive behaviour whose outcome corresponds to the (presumably more acceptable) medium variant of UN population projections. Yet, such understanding would be crucial for the development of societal responses specifically aimed at the transition from the former to the latter.

Concurrently, a growing body of evidence point to resilient factors leading to demographic heterogeneity of low-fertility countries (e.g. United Nations, 2003). For instance, certain societal commonalities that are proper to Germany and Southern European countries seem to be conducive to particularly low fertility, which is in fact "lowest-low" in these countries. Somewhat unexpectedly, this coexists with low labour utilization. Consequently, there should be specific background characteristics that are common to these particular types of fertility and employment. Such characteristics could either produce negative synergies or constitute the domain of policies with double positive effects.

Without serious improvements in labour utilization, the demand for foreign labour will grow considerably (and in selected countries – tremendously), which could challenge the ability of recipient countries to ensure societal integration of immigrants. Five observations are pertinent here.

First, the very success of the European Union in promoting peaceful and amiable coexistence of culturally different nations with long history of difficult relations provides ground for optimism. Second, the estimates of growth of immigration needed to balance the effects of low fertility, although substantial, contradict largely inflated figures that are often used in public discourse. Third, the development of the EU common labour market could smooth the consequences of cross-country differences in WAP shortfalls.

Fourth, facts seldom support the allegation that foreign labour competes and always worsens the situation of nationals. For example, in the EU-15 the dynamics of employment and immigration apparently are not correlated[8]. To the extent the foreigners get low-paying jobs for which the nationals have little demand, foreign labour does not depress wages. In fast-growing

[8] R^2 between immigration rates and changes of employment rates in 1990-2000 vary between 0.1 and 0.2 depending on the time series.

economies the negative relationship between foreign labour and wages does not appear in job classes either. However, this relationship may emerge and strengthen as immigration intensifies, fueling the conflict between the interests of workers and employers. Lastly, alleviating the reluctance to immigration by encouraging the influxes of only low-skill workers could alleviate the doubts of nationals but hamper the integration of immigrants.

Bar substantial increases of immigration and tremendous growth of fertility, rising labour utilization should become the high road to prevent the contraction of labour supply. Still, increasing labour utilization may be the least popular solution, especially in countries with most generous labour legislations and traditions of valuing leisure time over incremental income. In addition, dwindling labour supplies increase labour's bargaining power, which may translate either into increased wage (thus further limiting investment and growth) or resistance to raise labour utilization, i.e. by. extending working time or raising the statutory retirement age. Recent past demonstrates that labour utilization parameters are not rigid. For example, in Ireland and Spain, the EU employment index has grown just in 5 years (1995-2001) by 10 percentage points. On the other hand, however, the average workweek in EU-15 has shortened by one hour.

Conclusion

The consequences of below-replacement fertility for labour supply are likely to be unavoidable, serious and long-lasting. Variations in past trends and current levels of fertility produce serious differences in future shortfalls of working-age population.

For most countries, changes in utilization of labour may be sufficient to maintain labour supply. In some countries, however, preventing shrinkages of labour supply would require, in addition to increases in labour utilization parameters, deep transformations of reproductive behaviour coupled with greatly increased inflows of migrants. It would be crucial to ensure consistency of respective policies with the purpose of minimizing their contradictions and maximizing their positive synergies, as well as their harmonization within the Union.

Understanding the past evolution is crucial for forecasting. This paper, while simply comparing two points in time, implicitly incorporated this knowledge, but only with respect to fertility. Indeed, in the realm of migration the past and the future are also interrelated, but the dependence of migration on a host of volatile factors necessarily hampers the formulation of credible projection assumptions. This may be partly improved by incorporating the conclusions of economic, political and socio-cultural studies of migration. Labour variables are perhaps even more challenging, in part because they involve contemplating U-turns in several behavioural determinants rather than extrapolating past trends.

References

Demeny, P. (2003). Population policy dilemmas in Europe at the dawn of the twenty-first century. *Population and Development Review*, 29 (1): 1-28.

Goldstein, J., W. Lutz and M.R. Testa (2003). The emergence of Sub-Replacement Family Size Ideals in Europe. *European Demographic Research Papers*, No. 2.

Héran, F. (2004). Five immigration myths. *Population and Societies*, No. 397

Lutz, W. and S. Scherbov (2003). Can Immigration Compensate for Europe's Low Fertility? *European Demographic Research Papers*, No. 1

Sobotka , T. (2004). Is lowest-low fertility in Europe explained by the postponement of childbearing? *Population and Development Review* 30 (4): 195-221

Tierry, X. (2004). Recent immigration trends in France and elements for a comparison with the United Kingdom. *Population*, 59 (5): 635-674.

United Nations (2001). *Replacement Migration: Is it A Solution to Declining and Ageing Populations?* Sales No. E.01.XIII.19

United Nations (2003). *Partnership and Reproductive Behaviour in Low-Fertility Countries*. E.03.XIII.5

.