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Challenges facing financing of social security systems from the European union enlargement and opening the inner borders in Europe: Results of simulations with a simple model

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CHALLENGES FACING FINANCING OF SOCIAL SECURITY SYSTEMS FROM THE EUROPEAN UNION ENLARGEMENT AND OPENING THE INNER BORDERS IN EUROPE: RESULTS OF SIMULATIONS WITH A SIMPLE MODEL

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DEMOGRAPHIC CHANGES

United Nations population projections¹ show that after 2005 population of Europe will start to decrease and in 2050 will be smaller than in the year 2000 by over 90 million persons. Population of the current European Union members (plus Switzerland, Norway and Iceland) will be smaller by nearly 40 millions, population of current candidate countries to the EU (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovenia, Slovak Republic) will decrease by 20 millions and only population of Turkey will be still increasing relatively fast: in 2050 it will be greater than in 2000 by 48 per cent, that is by over 30 millions. Population of all the other European countries (including Russia) will shrink by 28 per cent, that is by 65 millions.

Population of EU member countries (plus three Western European non-members) constitutes now about 49 per cent of the overall European population and this share will slightly increase to 50 per cent by 2050. Population of the twelve candidate countries (without Turkey) is now 13 per cent of the European population and in 2050 this share will be 12 per cent. Population of Turkey, which is now 8 per cent of the European population, will increase its share to 14 per cent in 2050 and a share of population of all the other European countries will decrease from current 29 per cent to about 24 per cent (see Figure 1).





Source: own calculations based on: UN (2001) (medium variant)

¹ UN (2001). See also analysis in: EUROSTAT (2001 b). UN demographic projections include assumptions on migration rates for each of the countries. However, a change in the migration policies may of course have significant impact on future demographic developments and population age structures. See also OECD (2001 a) for an in-depth analysis of the problem.

Due to the ageing process, a slightly different pattern of changes will concern population in a working age, defined here as age bracket 20-64. Total European working age population will still be increasing until 2010 and start to decrease only afterwards. In 2050 it will be lower by

23 per cent (that is by nearly 110 million persons) compared to its 2000 level. Working-age population in the current European Union member countries will decrease by nearly 60 million, that of twelve candidate countries by 20 million and of other European countries by 50 million. Working age population of Turkey will increase by 20 million (54 per cent) and will constitute 15 per cent of the total European working-age population (8 per Share of working-age cent now). population in the current EU members and twelve candidate countries will decrease from 62 per cent to 60 per cent of the total European working-age population, while share of the other European countries will decrease from 30 per cent to 25 per cent (see Figure 2).

Figure 2. Working-age population in Europe 2000-2050



Source: own calculations based on: UN (2001) (population at age 20-64, medium variant)

A change in the population structure and impact of the ageing population is best shown by changes in the total demographic dependency ratio (number of population younger than 20 and population older than 64 per hundred of the working-age population). Dependency ratio measures also a potential demand for transfers coming from the demographic structure of the society: it tells us how many of those below or above working age have to be supported by those in working age. Figure 3 compares future demographic dependency rates calculated for three groups of countries: (1) present fifteen EU members plus Iceland, Norway and Switzerland (EU 18), (2) twelve candidate countries (except Turkey, CC12), (3) all the above thirty countries taken together (EU 30)².

Within the European Union countries, average total demographic dependency ratio will be slowly decreasing until 2010 but will start to increase sharply afterwards: in 2050 it will reach 95.6, compared with 63.5 in 2010 and 64.2 in 2000. Similar pattern will characterize 12 candidate countries, however with a certain time lag. Also, a current level of the total demographic dependency is lower in candidate countries and will stay lower until 2050, although the gap will be narrowing in the second half of the projection period.

² From this point onward, Turkey is not included into the presented statistical calculations due its very different demographic patterns. However, one has to bear in mind that Turkish relatively young and growing population and labour force will have a significant impact on labour markets and social protection finances in the future Europe without inner borders.

As a result, for all 30 countries taken together (EU plus 3 Western European non-members plus 12 candidate demographic countries). а total dependency ratio will be lower and growing slower than for the European Union countries alone. One can thus say that the EU enlargement may slightly ease the demographic pressure and demand for transfers in the enlarged Union treated as a whole.





Source: own calculations based on: UN (2001) (medium variant)

DIFFERENCES IN ECONOMIC AND LABOUR MARKET PERFORMANCE AND SOCIAL PROTECTION EXPENDITURE

Demographic structure however, is only one of the whole set of factors shaping actual demand for social transfers and determining actual levels of social protection. What matters, are actual employment and unemployment levels, levels of income and overall economic performance as measured by growth rates of productivity and employment. Here, the differences between EU member countries and candidate countries are much more significant than differences in patterns of the demographic development. Figure 4

shows average annual growth rates of GDP, productivity and employment for the five-year period between 1995 and 2000. While GDP has been on average growing only slightly faster in candidate countries than in the EU member countries (2.9 per per compared to 2.6 cent cent respectively), a structure of factors contributing to this growth was significantly different. In the EU member countries productivity growth (1.4 per cent) and employment growth (1.3 per cent) has contributed nearly equally to GDP growth, while in candidate countries employment has been still, on average, declining (by -0.8 per cent) and thus whole growth has to be attributed to productivity increases (3.6 per cent annually).





Source: own calculations based on EUROSTAT (2001, 2001a, 2001c) and Economic Commission for Europe (2001)

Income (and productivity) levels are differentiated with the European Union (see Figure 7) but the differentiation is even greater among the candidate countries. Average level of GDP per capita in candidate countries is only 39 per cent of the EU level and average productivity (GDP per employed person) is in candidate countries at 41 per cent of the average EU level (see Figure 5). EU enlarged with all the twelve candidate countries would thus have an average GDP per capita and average GDP per employed person of 87 per cent of the level before enlargement.

Average employment rates (for population aged 20-64) in the enlarged EU would also decline a bit, as employment rates are lower in the candidate countries (64.2 in candidate countries, for both sexes, compared to 67.1 in the EU). In fact, female employment rates are slightly higher in candidate countries than in the EU and these are the lower male employment rates that make the difference. Only 70.8 per cent of the male population aged 20-64 is employed in candidate countries, compared to 77.2 per cent in the EU. The reason is only to some extent in higher unemployment rates, but mainly rather in lower labour force participation due to earlier retirement and higher disability rates.





Source: own calculations based on EUROSTAT (2000, 2001, 2001c) and Economic Commission for Europe (2001)





Source: own calculations based on EUROSTAT (2001)

Lower employment rates in candidate countries have to result in higher social protection beneficiary ratios: more old age or disability pensioners or unemployment/social assistance benefits' recipients. But both absolute and relative benefit levels in candidate countries are significantly lower than in the EU. Social protection expenditure per capita is in candidate countries only at 29 per cent of the EU level (see Figure 5). Also the overall public social protection expenditure (measured as percentage of GDP) is on average lower in candidate countries: 20 per cent of GDP as compared to average 27.4 per cent in the EU. From Figure 7 one may also notice that differentiation of social protection expenditure ratios is greater among the candidate countries. Social protection expenditure of the enlarged EU (15 EU member countries plus candidate countries) would be at level slightly below 27 per cent of the total GDP.



Figure 7. Social protection expenditure (per cent of GDP) and GDP per capita

Source: based on EUROSTAT (2000) and ILO (2000)

SCENARIOS FOR THE FUTURE: EMPLOYMENT, ECONOMIC GROWTH AND SOCIAL PROTECTION EXPENDITURE

How would the future social protection expenditure's ratio to GDP evolve for the enlarged European Union? The results of the simulations, using a simple model, are presented below.

One of the key variables determining future costs of social protection is employment. Two scenarios have been considered which differ with respect to employment rates. Status quo scenario assumes the employment rates in both EU and candidate countries to stay unchanged at the 2000 level. Coupled with a declining working age population this would mean dramatic consequences for employment: unless there is an additional and significant inflow of migrants from outside the enlarged EU, employment will start to decline after 2010 and average employment in the year 2050 would be only at 75 per cent of its 2000 level (see "status quo" scenario line on Figure 8).

It is thus obvious that employment rates have to increase: for those younger than 65 but eventually also for those older. The second ("growth") scenario assumes that over the next 50 years employment rates (for those aged 20-64) will be gradually increasing in all countries to the highest levels currently experienced in some of the countries of the region: 90.5 per cent for men and 84.6 per cent for women. Additionally, it is also assumed that employment rates for those over 64 will start to increase after 2010 and reach the



Source: own simulations

average level (both sexes) of 87.6 per cent in 2050. Such an assumption seems to be rather optimistic but it would open the way for employment to grow until 2025 and decline slowly only afterwards. In 2025, an average level of employment in the region would be about 15 per cent higher than in the year 2000, and in the year 2050 employment would be only 10 per cent higher than it is now (see "growth" scenario line in Figure 8).

Another assumption made, the same for both scenarios, is about the productivity (GDP per employed person) growth. It is assumed that productivity will grow at a constant rate of 2 per cent annually in most of the current EU member countries, 3 per cent annually in Greece, Portugal, Spain and Cyprus and 3.5 per cent annually in the candidate countries. Employment growth and productivity growth assumptions are then used to calculate future Gross Domestic Product. With the above assumption status quo scenario would still allow for continuous but rather slow growth: after 50 years GDP per capita in the region would be only about 80 per cent higher than in the year 2000 (see "status quo" scenario line in Figure 9). Employment growth scenario would result in a much higher economic growth and GDP per capita in 2050 would be nearly four times higher than it is now (see "growth" scenario line in Figure 9). Growth scenario would also close large part of the income gap between current EU member countries and candidate countries: in 2050 average income in present candidate countries would be lower than average income of the current EU members by 21 per cent (see Figure 10).

Figure 9. GDP per capita: two scenarios (year 2000=100)



Source: own simulations





Source: own simulations

Future social protection expenditures were crudely estimated in the following way. Average expenditure per potential beneficiary in 2000 was calculated separately for 3 groups of benefits: old-age ("old-age" expenditure according to ESSPROS methodology divided by not employed population over 64), health care (it was assumed that health care consumption of non-working elderly is four times higher than for all the other population) and other benefits (other benefit expenditure divided by population at age 0-19 and non-working population 20-64).

It was further assumed that these average benefit expenditure would grow in line with GDP per capita (unless GDP per capita falls when average benefit would stay constant in real terms). Projected numbers of potential beneficiaries were then multiplied by estimated

average benefit to arrive at expenditure on each of the 3 groups of benefits. All the three summed up give the total social protection expenditure.

Of course, the projection method used is extremely crude; moreover it assumes no changes in the design of social protection systems in different countries with respect to benefit levels and entitlements. It even does not take into account social protection reforms already implemented (like pension reforms in Poland, Hungary, Sweden, Italy and other countries³), which will have significant impact on future benefit and expenditure levels. It simply extrapolates the current levels of generosity of the benefits currently provided. However, growth scenario does assume implicitly significant changes in the retirement behaviour by assuming increasing employment rates.

Results should be therefore interpreted only as a "what – if" exercise: they show only approximate trends in the costs of the existing social protection systems under specific assumptions concerning employment and productivity.

"Status quo" – low employment scenario would result in social protection expenditures' ratio to GDP growing from current 27 per cent to nearly 38 per cent over the next 50 years. High growth stimulated by growing employment rates and later retirement would significantly reduce the increase in social expenditure ratio: the ratio would increase "only" to slightly over 30 per cent between 2040 and 2045 and then even go down a little. The effect is strong and shows that future costs of social protection are strongly dependent on stimulating higher labour force participation and job creation.



Figure 11. GDP per capita, GDP per employed person and social protection expenditure per capita (year 2050, growth scenario, EU15=100)

Of course, due to the ageing process, allocation of social protection expenditure between elderly and other benefit recipients will change significantly and much bigger proportion of

Source: own simulations

³ Recent study by OECD (2001) presents results of the projections of "fiscal implications of ageing" based on more detailed country specific projection models which take into account ongoing reforms. It shows that while in OECD countries average old-age pension expenditure would increase until 2050 by over 3.4 per cent of GDP, in Poland, for example (mainly as a result of the pension reform introduced in 1999) this expenditure would decrease by 2.5 percentage points of GDP and in Italy by 0.3 percentage points).

the total social expenditure will go to the elderly. But one should also take into account the fact that changes in the demographic structure, higher employment and certainly lower unemployment (due to the future relative labour shortages) will also ease the current tensions of competing needs for different types of social protection.

CONCLUSIONS

Enlargement of the European Union and opening the inner borders of Europe pose many challenges to the existing social protection systems. Migration, different income and benefit levels, different legal, financing and governance regimes of the social protection schemes existing in European countries – these all will have to be dealt with through intense policy and co-ordination efforts. However, the purpose of this short paper was to show that, at the same time, an enlargement of the EU gives a chance for all the European countries to improve the standards of living and income security of the population through higher employment and growth and decent social protection. It may help all the countries to meet the common challenge they face: that is a challenge of ageing population. If the expansion of the economic integration processes in Europe would be successful in stimulating productive employment in all the member countries, then the alleged burdens of the ageing population might not appear to be so dangerous as they are often perceived.

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