

GÉRARD-FRANÇOIS DUMONT*, JEAN-MARC ZANINETTI **

UNIVERSITY OF PARIS-SORBONNE*, UNIVERSITY OF ORLÉANS**

DEMOGRAPHIC PROSPECT FOR 2030 IN POLAND: THE STAKES OF THE EU ENLARGEMENT

ABSTRACT. The downfall of the Socialist regimes resulted in an inevitably long and difficult transition imperative. In Poland, the transition process is accompanied by a high unemployment rate, but also by demographic side effects. Poland is coming now to a turning point of its demographic evolution, with a very low fertility rate. Natural growth has become negative since 2002 and the population dwindles with a persistent flow of emigration. Yet, Poland has very large workforce reserves until the years 2020. Therefore, 15 years are granted to Poland to become rich before growing old. The stakes of the European integration are high.

KEY WORDS: Poland, Demography, Foresight, European Union enlargement

The end of the Soviet empire and the downfall of the Socialist regimes resulted in an inevitably long and difficult transition imperative, because of the inheritance of habits of political centralization and of out of date economic structures. The transition process is accompanied by a high unemployment rate, in Poland as elsewhere, but also by demographic side effects, as the sharp decline of the fertility rate. Unemployment, which strikes down particularly the young adults, encourages emigration toward Germany, where the labour shortage is already very perceptible. Consequently, Poland is the only large country of the European Union to show a structural emigration.

According to statistics of the Council of Europe, the peak of population of Poland has been reached in 1999 with 38.667 millions inhabitants. Now, the population of this country decreases, as in the eight other countries of the fifth EU enlargement issued from the former East block. Yet, Poland has very large

workforce reserves until the years 2020. Therefore, 15 years are granted to Poland to become rich before growing old. The stakes of the European integration are high, and the over-cautiousness of the major central countries of the European Union could have troublesome repercussions on Central Europe and, by way of consequence, constitutes a supplementary hindrance to growth in Europe.

After a summary of the demographic evolutions between 1950 and 2005 in Poland, we will specify the present situation. Then we will focus on the prospects for 2030 according to the UN projections medium variant, and in the case of a rising fertility rate as an alternative. In conclusion, we will have a brief look at the 2050 horizon.

1. RETROSPECTIVE 1950-2005: DEMOGRAPHY, SIGN OF THE SLOW DECOMPOSITION OF THE COMMUNIST SYSTEM, AND OF THE TRANSITION ONWARD

With its 38 millions of inhabitants, Poland is the main country to join the European Union (EU) in May 2004; having now the sixth larger population of the EU member countries. A retrospective look on some more than one half a century of its demographic history displays two distinctive stages. First, its population increased of +56% between 1950 and 1999, then the population of Poland decreases now.

A closer look at the components of the whole period reveal that Poland knew a weak but almost continuous emigration current. On the other hand, its natural growth reduced little by little to become negative since 2002. In the years 1950, the fertility rate is often superior to 3 children by woman and different indicators (fertility, rate of urbanization, infant mortality) correspond then to the level of a developing country. To a certain extent, Poland is then comparable to Spain, at a time by the dimension of its population and by its demographic history until the Spanish turn of the period 1970-1990. While Spain knows a historic drop of the fertility rate, a spectacular receding of the infant mortality, a quick rise of the life expectancy and a stop of the emigration, all indicators that testify the economic takeoff of Spain out of dictatorship, the evolutions are a lot less clear in Poland. Certainly, the fertility rate remains superior to the level of replacement of the generations until 1988, but the life expectancy stagnates or progresses hardly and the infantile mortality recedes weakly. The Communist regime doesn't succeed therefore in assuring a significant improvement of the life conditions like what one notes in Western Europe at the same period.

The progressive decomposition of the socialist system has serious impacts on the conditions of life of the Polish populations. From 1965 to 1990, the life expectancy of men stagnates and the one of women is nearly stationary from 1975 to 1990. The fall of the regime stresses the drop of the fertility rate until

a real downfall, passing 2.1 children by woman in 1988, in the last years of the regime, to 1.24 child by woman in 2002. Yet, according to some vital indicators, Poland, unlikely to the Successor States of the Soviet Union and to some Balkan countries, rather has very well succeeded its transition toward market economy: the infant mortality rate diminish distinctly since the end of Communism and life expectancy at birth progresses again since 1990, including for men.

But the strong decrease of the fertility rate entails an ageing process by the basis of the age's pyramid. Median age, that had increased of 2.4 years between 1950 and 1970, then of 4.1 year between 1970 and 1990, increased further of 4.2 years between 1990 and 2005. However, the population of Poland remains again relatively young in comparison to the EU average. During the whole Communist period, the total dependency rate oscillates around 53% to 54%, not only because of the important size of the families, but also of the weak longevity. In 1985, the youth dependency rate is of 39 children aged of less than 15 years for 100 adult people of age contained between 15 and 64 years, and the senior dependency rate was of only 14 people aged of 65 years or more for 100 adult people of working age. In two decades, these proportions altered appreciably: the size of the families shrank away, making the juvenile dependency rate to drop of 16 points between 1990 and 2005. In the same time, the senior dependency rate progresses of +4 points. Consequently, Poland benefits today from an exceptional demographic dividend, with a total dependency rate of 41% only, weaker that in Spain, but it is not without consequence on the pressure on the labour market.

2. POLAND IN THE EUROPEAN UNION: SITUATION 2000-2005

On the verge of the XXIth century, Poland is coming to a turning point of its demographic evolution, with a very low fertility rate, comparable to the situation that prevails in Germany or in the Mediterranean countries of the EU. Natural growth has become negative since 2002 and the population dwindles with a persistent flow of emigration.

THE DEMOGRAPHIC WEARINESS OF THE LAST YEARS OF COMMUNISM INTENSIFIES SINCE ITS DOWNFALL

The age's pyramid of Poland for year 2005 displays the painful past of this country, whose population has been decimated during World War II, with 5.8 millions casualties, of which 5.675 millions of civilians, among which 3.2 millions of Jews. Also the proportion of people aged of 60 years or more in the population is still weak in Poland. Despite a high birth rate between 1945 and 1960, the most numerous generations are born between 1974 and 1985 and are

now in the 30 - 39 age group. Unfortunately, the fertility rate dropped after 1985 so that the basis of the pyramid is narrower for each generation born after this date.

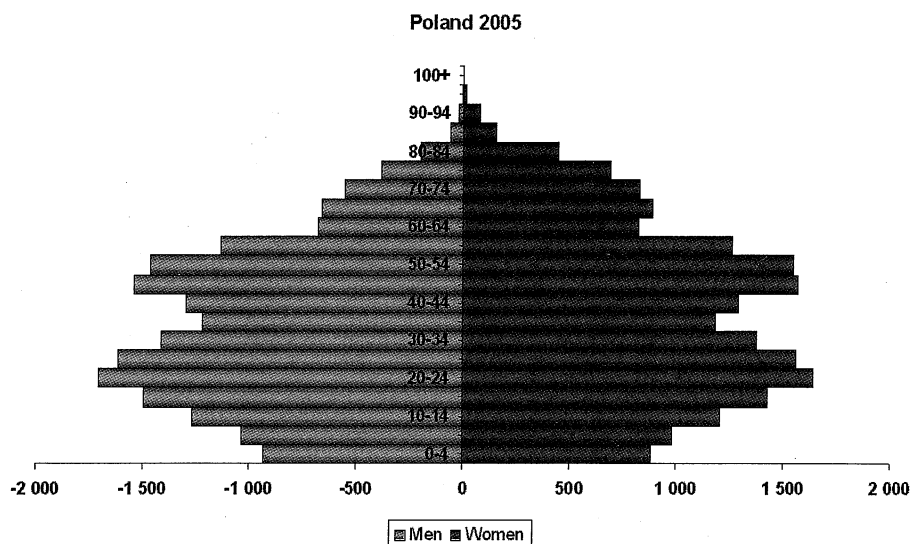


Fig. 1. Age's Pyramid of Poland in 2005

Table 1. Comparative Demographic movement (yearly average)

PERIOD GEOPOLITICAL ENTITY	RATE OF TOTAL DEMOGRAPHIC GROWTH (FOR ONE THOUSAND INHABITANTS)	NATURAL GROWTH RATE (FOR ONE THOUSAND INHABITANTS)	MIGRATORY GROWTH RATE (FOR ONE THOUSAND INHABITANTS)	MIGRATORY BALANCE (THOUSANDS)
1995-2000				
Poland	0.3	0.7	-0.4	-14
European Union (to 25)	3.2	0.7	2.5	837
2000-2005				
Poland	-0.6	-0.2	-0.4	-16
European Union (to 25)	3.3	0.7	2.6	1,191

Source: UNO official population estimations

The accentuated decrease of the total fertility rate after 1989 is interpreted as the consequence of the disappearance of the implicit pro-birth policies practised by the Communist regimes. The weakness of the domestic policies and

a high unemployment rate, that especially affect the youth, discourage the formation of large families. The number of births has been divided by two between 1985 (348,000 births) and 2002 (171,629). The fall of the fertility rate includes the fact that many young couples postpone the decision of the births. In consequence, the mother's mean age at birth rose from 26.2 years in 1990 to 27.8 years in 2002. However, the question is to determine if the decrease of the fertility rate is more circumstantial than structural, considering social factors different from those of Spain for example.

Being a former Communist country placed under the sway of the Soviet „big brother”, Poland is nonetheless also a Catholic country. This fact can explain the weak proportion of births occurring outside marriage. That proportion was only of 5% in Poland in 1985 (against 8% in Spain and 15% in the EU 15). It is either only of 14.4% in 2002, against 18% in Spain (30% in the UE15).

Table 2. Total fertility rate (children by woman)

PERIOD	POLAND	EUROPEAN UNION
1995-2000	1.48	1.46
2000-2005	1.26	1.47

Source: UNO official population estimations

Life expectancy at birth is 5 years lower in Poland than the EU average, supplementary reason of a proportion of aged people distinctly lower to the one of Western European countries.

Table 3. Life expectancy at birth (years) and specific dependency rates (for 100 adult of the 15 - 64 age group) in 2005.

GEOPOLITICAL ENTITY	BOTH SEXES TOGETHER	MEN	WOMEN	TOTAL DEPENDENCE	JUVENILE DEPENDENCE (0-14 AGE GROUP)	SENIOR DEPENDENCE (65 OR MORE AGE GROUP)
Poland	74.3	70.2	78.4	41	23	18
European union	79.4	75.8	83.1	49	24	25

Source: UNO official population estimations

In 2005, a typical feature of Poland results therefore from the particularly high proportion of the potential active population of the 15-64 age group. It is of 27,253 millions people, either 70.7% of the total population (against an average of 67.4% for the 25 countries of the EU). This potentially active population increased from +3.9 millions from 1980 to 2005, at a mean rate of growth of +1.04% per year (EU 25 average of +0.46%). One counts still 161 youth of

the 15-24 age group per 100 seniors of the 55-64 age group, the replacement of the workforce is guaranteed and the pressure of youth at the entry of the labour market is very high. Since the end of the Communist regime, the size of the generations of children aged of less than 15 years have dwindled sharply. In the same way, representing less than 13% of the total population, the people aged of 65 years or more are relatively less numerous in Poland than the EU average and the ageing process is still limited therefore. However, the growth rate of the older generations size, which is named «*gérontocroissance*» by G.F. Dumont (1996), is fast (more of +1.3% per year).

Table 4. Poland: indicators of ageing 2005

GEOPOLITICAL ENTITY	POPULATION AGED OF 65 YEARS OR MORE IN 2005 (THOUSANDS)	PROPORTION OF THE TOTAL POPULATION AGED OF 65 YEARS OR MORE IN 2005	PROGRESSION OF THE PROPORTION OF THE 65 YEARS OR MORE AGE GROUP SINCE 1980	INDEX OF VARIATION OF THE POPULATION OF THE 65 YEARS OR MORE AGE GROUP (BASIS 100 IN 1980)	YEARLY MEAN RATE OF GROWTH OF THE 65+ AGE GROUP 1980- 2005 (PERCENTAGE)
Poland	4,981	12.9%	+2,9	138	+ 1.31%
European union (to 25)	75,893	16.6%	+3,2	133	+ 1.13%

Source: UNO official population estimations

PAINFUL TRANSITION ON THE LABOUR MARKET

With a demographic structure that creates a very strong job demand and an economy that pass progressively since 1989 from obsolescence to modernity, through an inevitably traumatic reorganization, as other former East Block countries, Poland is struck by a very high unemployment rate, two times more than the EU average, and therefore very far from achieving the employment rate of 70% targeted by the Lisbon summit of 2001. The employment rate of the 15-24 age group is 6 points below the EU average, and the total employment rate of the 15-64 age group is hardly superior to 50%, against an EU average of 63.7%. These features are similar to those of the five oriental Länder of Germany coming from the former East-German Republic, of Slovakia, Lithuania, Romania or Bulgaria, as well as, in a least measure, Latvia and Hungary. Of the eight countries of the EU enlargement of May 2004 coming from the former East block (Bulgaria and Romania having to adhere in 2007), only the Czech Republic, Estonia and Slovenia escape a high unemployment rate. But, because of its importance and the fossilisation of the large parts of its agriculture during decades, Poland is the country that faces the bigger problem of unemployment.

The collectivist economy privileged the agricultural and industrial production, planned in an authoritative way, instead of services. The soviet economic theory only posted the agricultural, industrial and mining production in the „Net Material Product” that served, until 1980, to measure the achievement of the objectives of the quinquennial plan. The tertiary sector was supposed to be only „free” services to the proletariat. On the labour market, this regime, which lasted close to 45 years in Poland, succeeded to maintain a plethoric administrative and industrial workforce in activities deprived of objectives of profitability.

Otherwise, it is necessary to insist on a particularity of Poland in the East block: agriculture has hardly been collectivized, because of the farmer’s resistance to collectivization in the years 1950. This state resulted in the maintenance of an important agricultural population working in agriculture of subsistence, without any possibility of technical improvement or of land ownership reorganization. Poland is therefore in 2005 the country of the European union that counts the strongest proportion of agricultural workers in its active population.

After the downfall of the system, the Eastern European countries fit in the circuits of the European and world economy, and the bulk of local products were now competed by products of better quality and of lower prices coming from Western Europe or from elsewhere; numerous unproductive factories should have closed one after the other, dragging a domino-effect among their suppliers. The Polish peasants were confronted to the competition of the subsidized EU products, and an increasing number began to leave their farm. The imperatives of restructuring resulted therefore in a dramatic rise of the unemployment rate.

Table 5. Situation of the labour market and situation of employment of the 15-24 age group, of the 55-64 age group and of women

LABOUR MARKET 3 rd QUARTER 2004	POLAND	EUROPEAN UNION
Activity rate of the 15-64 age group	64.1%	69.9%
Unemployment rate	18.5%	8.9%
Employment rate of the 15-64 age group	52.5%	63.7%
Labour market 2003	Poland	European Union (EU 25)
Employment rate of the 15-24 age group	21.2%	37.6%
Employment rate of the 55-64 age group	27.1%	40.1%
Employment rate of women of the 15-64 age group	46.0%	55.1%

Source: Eurostat harmonised Statistics; Source Eurostat, LFS

The Polish society has found different answers to come up against the disastrous Communist legacy. In particular, the fertility rate collapsed facing the uncertainty of the times to come, and several categories of population are disco-

uraged to participate in the labour market. The rate of long term unemployment is the highest of the European Union and the involvement of women in the labour market is of 12 points inferior to the one of the men (activity rate of 58% against 70% for the men of 15 to 64 years). This hidden unemployment concerns in priority the most aged and the youngest.

As in other countries issued from the former East block hit by high unemployment rates, the involvement of the 55-64 age group in the labour market, measured by the activity rate, decreased very quickly. Anticipated retirement acted as variable of adjustment to lessen the shock of the indispensable restructuring of the obsolescent industries. It is a common feature with France, that managed this restructuring in an analogous manner, notably in its Northern regions, except that the industrial restructuring were even more imperative to the former East block countries because of an incomparably bigger obsolescence of particularly unproductive and polluting industrial plants. Also, in 2003, the rate of employment of the 55-64 age group is 13 points inferior to the EU average, even lower than in France or in Italy, and Poland stands in antepenultimate EU position before Slovakia and Slovenia (22.7%, the lowest level of the union).

In a symmetrical way, the youths of the 15-24 age group are placed in waiting line and often discouraged to search for work. The activity rate of this age group reaches the bottom level of 36% for an employment rate of only 21.2%. More than 4 young active Polish people on 10 are therefore in search of a job, and 15% of the total of the 15-24 age group are out of work, (against 6% on EU average) sad record of Poland, before Slovakia (13.4%) and Finland (14.1%). By comparison, France, country where the insertion of the youth on the labour market is difficult, accounts only 7% of the totality of its 15-24 age group jobless, level that remains nevertheless superior to the EU average.

Poland holds other extreme features; the high share of temporary contracts, the weak access to continuous education, the weak proportion of part-time jobs, the weak proportion of services in the total employment, the rhythm of job deletion, etc. These features of the years 2000 show that the transition from collectivist economy toward market economy needs time and that the economic difficulties of the transition contribute to the demographic crisis.

How to explain the Polish record of youth unemployment? As Spain, Poland remained a predominantly farming country, with low levels of education for a long time. Certainly, the Communist regime had invested in the school system and the bulk of the Polish population has had access to the secondary educational level. The proportion of the 25-34 age group having achieved secondary studies as higher level of education is of 24% superior to the proportion of the 55-64 age group in the same situation (EU average: +18%). On the other hand, the access of the Poles to higher education progressed slowly. The proportion of the 25-34 age group having achieved tertiary studies as higher level of education is only superior of 7% to the proportion of the 55-64 age group in an equivalent situation,

against 9% on EU average. In Spain, country most comparable to Poland, the progression is of 24.5%. In France, the progression is of 19%.

This weak progression of the educational levels in Poland is very similar to the situation that prevails in all of the Central European countries. An economy insufficiently turned toward services relies still weakly to tertiary education and limit itself to a technical secondary education, often with programs needing to be modernized. The very strong youth unemployment rate is the consequence of this situation, fundamental difference with the countries of Northwest Europe that know a state of almost full employment thanks to the development of a knowledge-based services economy. Contrary to the youth of Spain (or of France, Belgium or even Italy), the Poles aged of less than 25 years prefer still to look for jobs that to prolong their studies, what increases the unemployment rate.

3. DEMOGRAPHIC PERSPECTIVES ON THE 2030 HORIZON

The prospective part of this paper focuses on the middle-term prospects for 2020 and 2030 according to the medium variant of the United Nations (UN) "2004 revision" of the official World Population estimates and projections, delivered in February 2005.

AN EXPECTED DECLINE FOR 2020 ACCORDING TO THE MEDIUM VARIANT

According to the medium variant of the UN projections, the expected number of inhabitants of Poland is about 37.7 millions persons in 2020, with a mean rate of decrease of -0.14% per year. The projections foresee an acceleration of the trend towards depopulation observed since 1998. Poland is not an isolated case; all the former communist countries of Eastern Europe are expected to depopulate in the same way.

The medium variant of the UN projections relies on three hypotheses for Poland:

1. The fertility rate is supposed to go back up very slowly (TFR 1.41), remaining of 0.24 child by woman lower than the EU average (TFR 1.65) to the 2020 horizon.
2. The life expectancy must progress of 3.2 years in 15 years (73.9 years for men and 81.1 year for women), but it is expected to remain of 4.6 years lower than the EU average (78.3 years for men and 83.9 years for women).
3. The expected migratory balance remains in deficit, keeping the mean rhythm noted during the latest past decade: 16,000 net exits per year.

Following these three hypotheses, the newer generations born after 2005 will be fewer that those previously born. The median age would rise to 41.7 years, after an ageing of +5.2 years between 2005 and 2020. The total depen-

dependency rate would gain 6 points, with -2 points for the juvenile dependency, and +8 points for the senior dependency.

The potentially active population (15-64 age group) should count 25.6 millions persons in 2020, around 68% of the total population (EU average of 64.8%), a decreasing proportion of 2.7 points since 2005. This would represent a net loss of 1,621 000 of potentially active population from 2005 to 2020, at a mean rhythm of -0.41% per year between 2005 and 2020 (EU average -0.16% per year). The workforce replacement index would fall below the point of balance, with only three youths of the 15-24 age group for four seniors of the 55-64 age group. This decline is due to the past demographic evolutions, that is the very sharp decrease in the number of births in the period 1995-2004 in relation to the more numerous generations born between 1955 and 1964.

THE RHYTHM OF EXPECTED DEPOPULATION ACCELERATES BETWEEN 2020 AND 2030

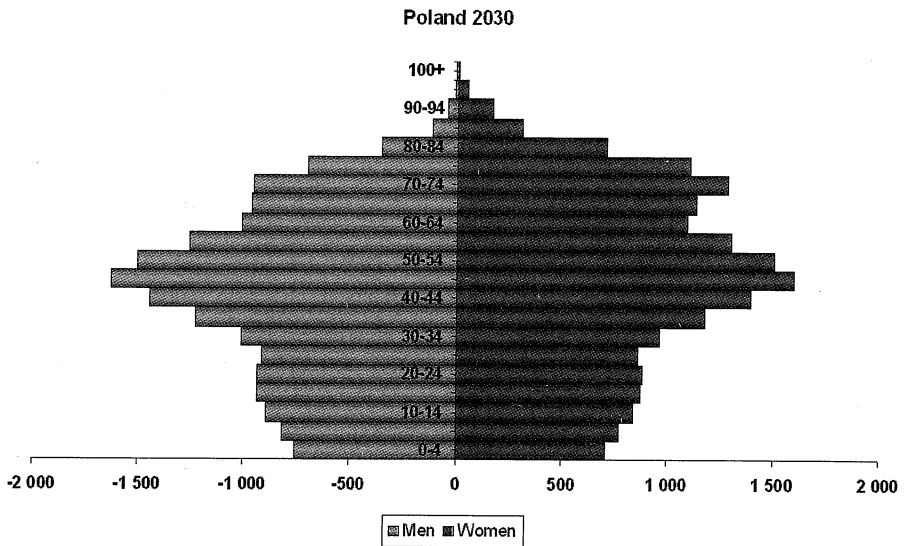


Fig. 2. Projected age's pyramid of Poland in 2030 (according to the medium variant of the UNO projections)

According to the medium variant of the UN projections, the expected number of inhabitants is about 36.2 millions persons in 2030, with a mean rate of decrease of -0.39% per year between 2020 and 2030. The ageing process would intensify in this decade, with a median age rising up to 46.1 years. The total dependency rate would pass to 54% (+7 points), and the senior dependency to 34% (+8 points).

DEMOGRAPHIC PROSPECT FOR 2030 IN POLAND: THE STAKES OF THE EU ENLARGEMENT

The potentially active population (15-64 age group) should count only 23.5 millions persons in 2030, around 64.9% of the total population (EU average of 61.2%), a decreasing proportion of 1.1 points since 2020. This would represent a loss of potentially active population at a mean rhythm of -0.85% per year between 2020 and 2030 (EU average -0.6% per year). The workforce replacement index would remain very low, with only 78 youths of the 15-24 age group for 100 seniors of the 55-64 age group (EU average of 73%).

Table 6. Expected demographic movement (yearly average), age-structure of the population and comparative ageing in 2030, Poland: indicators of ageing 2005-2030 and Potentially active population 2030

GEOPOLITICAL ENTITY	POPULATION 2030 (THOUSANDS)	TOTAL DEMOGRAPHIC GROWTH RATE FOR ONE THOUSAND INHABITANTS) 2020-2030	TOTAL FERTILITY RATE (CHILDREN PER WOMAN) 2030	LIFE EXPECTANCY AT BIRTH (YEARS) 2030
Poland	36,253	-1.4	1.55	78.8
European Union (to 25)	464,201	-0.3	1.76	82.2
Geopolitical Entity	Median age (years)	Total dependency ratio (for 100 15-64 age group)	Juvenile dependence (0-14 age group)	Senior dependence (65+ age group)
	Variation 2005-2030	Variation 2005-2030	Variation 2005-2030	Variation 2005-2030
Poland	46.1	54	20	34
	+9.6	+13	-3	+16
European Union (25)	46.4	63	24	40
	+6.5	+14	0	+14
Geopolitical Entity	Age group 65 or more in 2030 (thousands)	Proportion of the 65+ age group in the total population in 2030	Relative progression of the proportion of the 65+ age group from to 2005 to 2030	Index of growth of the 65+ age group (basis 100 in 2005)
Poland	7,920	21.8%	+7,9	159
European Union (to 25)	95,775	20.6%	+4	126
Geopolitical Entity	Potentially active population (15-64 age group) 2030 (thousands)	Proportion of the 15-64 age group in the total population 2030	Yearly mean rate of growth of the 15-64 age group 2020-2030 (percentage)	Workforce replacement index (15-24 age group to one hundred 55-64 age group)
Poland	23,542	64.9%	-0.85%	78
		-5.8		
European Union (UE25)	284,162	61.2%	-0.60%	73
		-6.3		

Source: UNO projections, medium variant

According to the medium variant of the UN projections, the Polish lag behind the EU average would remain important, both in terms of fertility rate that in terms of life expectancy. Also, notably for this last reason, the ageing of the population of Poland, although fast, would remain yet lower than the EU average.

Until 2030, the Polish demographic perspectives are paradoxical. Although affected by a severe demographic crisis and an accelerated ageing process, Poland would remain younger than the EU average, but with a declining population. On the one hand, the dip in potentially active population would mechanically limit the pressure of demand on the labour market. On the other hand, it is preoccupying in an economic point of view insofar as it implies a decreasing human capital and a possible decline in consumption.

Two main points are to be noted. On the one hand, if the fertility rate doesn't go back up above the level of replacement of the generations, the end of the demographic decline cannot be foreseen at any time horizon. Not only Poland loses the demographic dividend of the end of the demographic transition, which she arranges in 2005, but the ageing process and depopulation become very sharp too. On the other hand, the point is to determine if Poland is going to experiment with an economic growth in the next 25 years comparable to what happened in Spain in the two decades following its integration in the European Union (1986).

But these projections, based on exogenous hypotheses, can be completely refuted by a fast economic recovery bound to cause an improvement of the fertility rate and a faster elevation of the life expectancy. Let's examine then how this alternative future could take place.

4. A STRATEGIC ALTERNATIVE BY THE RECOVERY OF THE FERTILITY RATE

What will happen if Poland evolves according to an alternative scenario based on the recovery of the fertility rate? The UN foresaw a high variant to their projections that permits to clarify such perspectives. These last hypotheses suppose that the European integration strengthens the Polish economy and permits a progressive cut in unemployment.

DEPOPULATION STOPPED IN 2030, BUT REDUCTION OF THE POTENTIAL ACTIVE POPULATION STILL CONTINUES

The alternative scenario is based on a progressive recovery of the fertility rate that doesn't reach the level of replacement of the generations nevertheless by 2030, but only in the following decades. Consequently, the ageing process would continue between 2020 and 2030 in Poland, but at a rhythm much lessened than in the medium variant.

Table 7. Poland: expected evolution of the fertility rate according to two variants of the UN projections (children by woman)

PERIOD	MEDIUM VARIANT	HIGH VARIANT
2005-2010	1.24	1.49
2010-2015	1.27	1.67
2015-2020	1.34	1.84
2020-2025	1.41	1.91
2025-2030	1.48	1.98
2030-2035	1.55	2.05
2035-2040	1.62	2.12
2040-2045	1.69	2.19
2045-2050	1.76	2.26

Source: UNO projections

Table 8. Poland: perspectives of ageing according to the level of fertility on the 2030 horizon: Median age (years)

YEAR	MEDIUM VARIANT	HIGH VARIANT
2020	41.7	40.5
2030	46.1	43.9

Source: UNO projections

According to this high variant, the total population would stop decreasing and Poland would recover in 2030 a population equivalent to its historic maximum of 1998, against a loss of 6% of total population in the medium variant. This evolution would especially entail a growing number of children aged of less than 15 years, while the "gérontocroissance" is supposed equivalent to the one of the medium variant, because the hypotheses related to life expectancy are not modified. The total dependency ratio would increase (+5 points between 2020 and 2030) in the „high” variant as in the „medium” variant, because of the progression of the juvenile dependence (+6 points), whereas the senior dependence would be nearly equivalent (-1 point).

Table 9. Effect of the „high” variant on the age structure in Poland in 2030 and effect of the „high” variant on the potential active population

GEOPOLITICAL ENTITY AND VARIANTS	TOTAL POPULATION 2030 (THOUSANDS OF INHABITANTS)	VARIATION INDEX 2005-2030 (BASIS 100 IN 2005)	PROPORTION OF THE 0-14 AGE GROUP (PERCENTAGE) 2030	PROPORTION OF THE 15-64 AGE GROUP (PERCENTAGE) 2030	PROPORTION OF THE 65+ AGE GROUP (PERCENTAGE) 2030
Poland, medium variant	36,253	94	13.2%	64.9%	21.8%
Poland, high variant	38,877	101	16.7%	63%	20.4%
European Union (EU 25), medium variant	464,201	101	14.4%	61.2%	24.4%
European Union (EU 25), high variant	493,057	108	17.5%	59.5%	22.9%

Geopolitical Entity and variants	Population of the 15-64 age group 2030 (thousands)	Variation index of the 15-64 age group 2005-2030 (basis 100 in 2005)	Yearly average rate of growth of the 15-64 age group 2020-2030 (percentage)	Proportion of the 55-64 age group in the potentially active population (percentage)	Workforce replacement index (num. of age group 15-24 for 100 age group 55-64)
Poland, Medium variant	23,542	86	-0.85%	19.8%	78
Poland, high variant	24,483	90	-0.46%	19.1%	98
European Union (to 25), Medium variant	284,162	92	-0.6%	23.1%	73
European Union (to 25), high variant	293,537	95	-0.27%	22.3%	87

Source: UNO projections

Table 10. Specific dependency rates (for 100 adult people in the 15-64 age group) in 2030.

GEOPOLITICAL ENTITY	TOTAL DEPENDENCE	JUVENILE DEPENDENCE 0-14 AGE GROUP/ /100 15-64 AGE GROUP	SENIOR DEPENDENCE 65+ AGE GROUP/ /100 15-64 AGE GROUP
Poland 2030 Medium variant	54	20	34
Poland 2030 High variant	59	26	32
European Union 2030 (UE25) Medium variant	63	24	40
European Union 2030 (UE25) High variant	68	29	39

Source: UNO projections

In spite of a rising fertility rate, who will be certainly progressive and to a limited extent, the reduction of the potentially active population of the 15-64 age group would be ineluctable because of the considerable reduction of the dimension of the generations being born between 1990 and 2005.

Whereas it would lose 14% of its potential active population according to the medium variant, Poland would all the same lose 10% of this population according to the high variant. Nevertheless the workforce replacement index would go back up toward its level of balance in 2030, what means that the hemorrhage in the potentially active population could stop in the following decade.

THREATS OF DECLINE VERSUS STRATEGIC ALTERNATIVE: THE STAKE OF THE EUROPEAN INTEGRATION

Let's foresee two contrasted economic scenarios for 2030, associated either with the medium variant or with the high variant. The first one is the underlying "base-scenario" associated with present demographic trends of decline. It corresponds to a situation in which Poland only benefits weakly from the European integration. A soft continental growth, a persisting structural unemployment and a gloomy economic climate maintains the fertility rate at a weak level and induces the depopulation therefore. In spite of these dark perspectives, Poland has enough labour forces in reserve. So it can create 0.8 million of jobs between 2003 and 2030, while losing 1.3 million of potentially active population at the same time, even though its unemployment rate doesn't drop below 10%.

In these conditions, the country would not reach to Lisbon targets, of which it is very distant in 2005, since the rate of employment of the 15-64 age group, although progressing of 9 points, would be still 9 points under the targeted level of 70% and 4 points below the EU average. The employment rate for women would progress again more appreciably (+10,7 points) than the global employment rate of the 15-64 age group, but would miss again from more than 3 points the targeted level of 50% fixed by the Lisbon summit. The employment rate of the 55-64 age group, that would constitute a fifth of the potential active population by 2030, would progress of 6 points, but would remain below to the EU average (7 points), and miss the targeted level of 50% too. As for the insertion of the youth on the labour market, it would remain very weak. Indeed, the employment rate of the 15-24 age group would progress of 9,6 points, but would remain nevertheless distinctly below the EU average (11.3 points).

The so-called "base" scenario brings therefore relatively bad prospects, supposing either a decline of the European integration, either a half-failure in the transition towards market economy. It underlies that Poland (and the other countries in transition) would not know such successes comparable to those that knew Ireland and Spain that, certainly, adhered to the EU at one time where the demographic growth and the economic growth were better, although less fast than the

world growth. It is probably more difficult, for the countries who joined in with the 2004 enlargement, to benefit from the driving force of the European integration in their turn if the loco of the main European economies functions badly.

Table 11. Two contrasted scenarios for Poland on the 2030 horizon

INDICATORS	POLAND 2030 BASE SCENARIO	POLAND 2030 STRATEGIC AL- TERNATIVE	EUROPEAN UNION 2030 (EU25) BASE SCENARIO	EUROPEAN UNION 2030 (EU25) STRATEGIC AL- TERNATIVE
Potential active population (millions) (reference 2003)	15.99 (16.94)	18.46 (16.94)	199.43 (211.65)	217.84 (211.65)
Activity rate of the 15-64 age group (%) (reference 2003)	66.8% (63.9%)	73.9% (63.9%)	69.2% (69.3%)	72.3% (69.3%)
Unemployment rate of the active population age group 15-64 (%) (reference 2003)	9.6% (19.2%)	3.5% (19.2%)	7.9% (8.9%)	3.0% (8.9%)
Jobs (millions) (reference 2003)	14.47 (13.62)	17.84 (13.62)	183.91 (192.81)	211.38 (192.81)
Average yearly growth rate of employment 2005-2030	+0.26%	+1.09%	-0.19%	+0.37%
Employment rate of the 15-64 age group (reference 2003)	60.3% (51.2%)	71.3% (51.2%)	63.7% (63%)	70.1% (63%)
feminine employment rate age group 15 - 64 (reference 2003)	56.7% (46%)	67.4% (46%)	58.1% (55%)	66.1% (55%)
employment rate age group 15-24 (reference 2003)	30.8% (21.2%)	47.2% (21.2%)	42.1% (40%)	49.9% (40%)
employment rate age group 55-64 (reference 2003)	33.3% (27.1%)	49.2% (27.1%)	40.4% (37.5%)	48.1% (37.5%)

Source: UNO projections and calculations of the authors

It is clear that the so-called "base" scenario would induce an absolute and relative decline in Poland, with depopulation during the years 2005-2030. On the other hand, the strategic alternative applied to the European Union and to each of its member countries, therefore to Poland, tells us a quite different tale. It starts from the hypothesis that the European integration can succeed and drag Poland as the other countries who joined in with the latest enlargement in comparable economic recovery dynamics, although perhaps slower, to what Ireland, Greece, Portugal and Spain experienced. In spite of the ineluctable reduction of the potential active population, Poland could create 4.2 millions of supplementary jobs if one applies the EU activity rates targeted at the Lisbon summit to its age's pyramid and if the labour market reach full employment (for instance with an unemployment rate of 3.5% of its active population). It represents a rate

of creation of employment of +1.1% per year, what is a growth potential without equivalent in the other European countries, even in Spain (country that comes only in second position). Under these conditions, Poland could reach the Lisbon target of an employment rate of 70% of its potential active population in the 15-64 age group.

Still according to the alternative scenario, thanks to its large workforce reserves and contrary to most other countries of the European union, Poland can reach its potential growth targets without resorting to immigration until a rate passing +1% of job creation per year from 2005 to 2030. This exceptional growth potential would probably imply a stop of the net emigration therefore. In the higher hypothesis, with a job growth rate of +1.5% every year, immigration would become necessary in order to fuel the growth of the labour market because of the strong reduction of the potentially active population. In this hypothesis, 1.3 million of jobs would remain vacant and Poland should attract, while adopting by convention the ratio of 23 immigrants for 10 workers, a yearly net immigration of 75,000 entries.

In conclusion, these contrasted scenarios show that Poland has a significant potential of economic growth on the medium run, in spite of its demographic crisis that would have some effects nevertheless. The question is to know if the European integration will permit the realization of this potential.

5. CONCLUSION: WHAT CAN STILL HAPPEN UNTIL 2050?

According to the medium variant of the UN projections, the population of Poland would be of less than 31.9 millions of people in 2050, after a decrease of -0.85% per year between 2030 and 2050. This variant, based on a slight increase of the fertility rate up to 1.76 child by woman by 2050, foresees a mean life expectancy at birth of 80.5 years in 2050 and the pursuit of a net emigration of 16,000 people per year between 2030 and 2050.

In consequence, the ageing process would be very fast after 2030, since the median age should increase of 8.8 years between 2030 and 2050 to reach the unprecedented level of 50.8 years! The dependency ratio would reach some records therefore. For one hundred people of the 15-64 age group, one would count 23 children of the 0-14 age group (3 points higher than in 2030) and 52 seniors of the 65+ age group (18 points higher than in 2030)! The total dependency ratio would reach consequently the level of 76%.

Yet, the potentially active population (15-64 age group) would decrease again, to less than 18.2 millions people in 2050, either 57% of the total population of Poland (56.5% in the EU 25 average), a proportion reduced of 7.9 points since 2030. The loss of 5.36 millions of potential workers would correspond at a very fast fold mean rhythm of -1.71% per year during twenty years (-0.55% per year

for the EU 25). Still according to this medium variant, the population of Poland of 2050 would represent only 83% of the one of 2005, and the potentially active population, 67% of its present level. Obviously, it is a catastrophic scenario.

Among the three variants projected by the United Nations, the „low” hypothesis on fertility, that supposes that the total fertility rates cannot pass through the ceiling of 1.35 child by woman, is evidently the bleakest scenario. It would imply for Poland a loss of 12 millions of inhabitants in 45 years (31% of the current population of 2005) and a loss of 45% of the potentially active adult population. According to the “high” variant on fertility, with a total fertility rate reaching 2.26 children by woman by 2050, Poland loses only 570,000 inhabitants from 2005 to 2050, but it loses still 21% of its potentially active population.

The survey of these three variants point to the fact that Poland would pay the tribute of the demographic crisis noted from years 1980 to the years 2000 in any case. The problem of Poland consists in improving its economic growth to resolve unemployment in the twenty years that comes, while expecting for a recovery of its fertility rate. Although it has some very important workforce reserves for the present, that can give him the fuel for this growth, Poland is under serious threat of long-term decline if the European integration doesn’t succeed, and that could only darken the future of the whole of Europe. The enlargement of May 2004 is an opportunity, let us not waste it!

REFERENCES

Except for the statistics on the present situation of the labour market, provided by the Labour Force Survey of Eurostat (for years 2003 and 2004), all demographic data come from the “2004 revision” of the UNO official population estimations and projections.

Aglietta, M., Blanchet, D., Heran, F. 2002: *D mographie et Economie, rapport du CAE*, f vrier.

Avramov, D., Maskova, M. 2004: *Vieillissement actif en Europe au-del  de l’an 2000, Etudes d mographiques n  41*, volume 1, Conseil de l’Europe.

Calot, G., Chesnais, J-C. 1997: *Le vieillissement d mographique dans l’Union Europ enne   l’horizon 2050 : une  tude d’impact. Travaux et recherches de prospective num ro 6* Octobre 1997. Futuribles, Paris: LIPS, DATAR.

Chagny, O., Dopke, J., Plane, M., Schmidt, R. 2001: *Labour supply and labour force participation in Europe, a discussion on some recent developments and projections. Kiel working paper n 1049*: may.

Chaunu, P., Chaunu, H., Renard, J. 2003: *Essai de prospective d mographique*, Fayard.

Conseil de l’Europe, 2003: *Evolution d mographique r cente en Europe*, Strasbourg.

Coomans, G., 2004: *Atlas of prospective labour supply 2005*. Bruxelles: GeoLabour.

- Coomans, G.** 2004: *The demography / growth squeeze in a Knowledge-based Economy: the role of Education*, IPTS.
- De Jong, A.** 1999: *Population and Labour Force Scenarios for the European Union. Acceleration, Continuity or Reversal?* Statistics Netherlands: paper for the European Population Conference EPC99, The Hague.
- Dumont, G.-F.** 2004: *Les populations du monde*, Paris, Editions Armand Colin, deuxième édition.
- Dumont, G.-F.** 2004: "L'Europe rétrécit ses familles", *Informations sociales*, Paris.
- Dumont, G.-F.** 2004: « L'héritage démographique du système soviétique ». In : Yann et Sanguin, R., André-Louis, direction, *L'Europe de l'Est quinze ans après la chute du mur*, Paris: L'Harmattan.
- Dumont, G.-F., Flament R.,** 2004: "La Pologne, le géant de l'élargissement", *Population & Avenir*, n° 667, mars-avril.
- Dumont, G.-F.** 2003: « Les mutations démographiques en Europe occidentale à l'orée du millénaire ». In : Auphan, Etienne, Dézert, Bernard, *L'Europe en mouvement*, Paris: Editions Ellipses
- Dumont, G.-F.** 2003: « Population et avenir de l'Europe ». In : Bossuat, Gérard, direction, *Dangers d'Europe, Europe en danger*, Cergy-Pontoise, Les cahiers du CICC.
- Dumont, G.-F.** 1996: *Les spécificités démographiques des régions et l'aménagement du territoire*, Editions des journaux officiels.
- Dumont, G.-F., Zaninetti J.-M.** 2005. *Perspectives démographiques de la France et de l'Europe à l'horizon 2030*. Rapport remis pour le compte de l'association « Population et Avenir » à la Commission des finances, de l'économie générale et du plan de l'Assemblée Nationale. Mai.
- Eurostat, *Statistiques en bref Enquête européenne sur les forces de travail. Principaux résultats pour 2003*. Numéro 14/2004.
- Eurostat, *Statistiques en bref Dernières tendances du marché du travail. Les chiffres du 3^e trimestre 2004*. Numéro 3/2005.
- Eurostat, *Statistiques sociales européennes, Résultats de l'enquête sur les forces de travail 2002*, Edition 2003.
- Eurostat, *Statistiques sociales européennes, Population statistics*, English edition 2004.
- Eurostat, *Statistiques sociales européennes, Démographie*, Editions 2002 & 2003.
- Eurostat, *Statistiques en bref. Premiers résultats de la collecte des données démographiques pour 2003 en Europe*. Numéro 13/2004.
- ITPS *the spatial effects of demographic trends and migration*. Third Interim Report. ESPON, March 2004.
- Lecaillon, J.-D.** (editor), 2001: *Les enjeux de la démographie européenne*, Zürich: Thésis verlag.
- ONU, 2005: *World Population Prospects: the 2004 Revision*, ONU.
- Palomba, R., Kotowska, I.** (eds), La population active en Europe, *Etudes démographiques* n° 40, Conseil de l'Europe.
- Pennec S., Veron J.,** 2000, Famille et génération. Actes du colloque « Premières rencontres Sauvy ». INED, Paris.
- Population Reference Bureau (PRB), 2004: *World Population Data Sheet 2004*, PRB.
- Punch A., Pearce D. L.** (eds), 2000: La population et le marché du travail en Europe au-delà de l'an 2000, *Etudes démographiques* n° 33, volume 1, Conseil de l'Europe.

- Punch A., Pearce D. L.** (eds), 2000: La population et le marché du travail en Europe au-delà de l'an 2000, *Etudes démographiques* n° 34, volume 2, Conseil de l'Europe.
- Rakhsat S.**, *Projections démographiques de quelques pays de l'Union Européenne*. Paris, CEPPII, document de travail n°2002-13.
- Vimont C., Zaninetti, J.-M., 2003: *Compétitivité et vieillissement*, Institut Montaigne.

CORRESPONDENCE TO:

Gérard-François Dumont
Université Paris IV Sorbonne
UFR de Géographie
191, rue Saint-Jacques, 75005 Paris, France
[e-mail: Gerard-Francois.Dumont@paris4.sorbonne.fr]

Jean-Marc Zaninetti
Université d'Orléans
UFR Lettres, Langues et Sciences Humaines
10 rue de Tours BP 46 527
F-45 065 Orléans cedex 2, France
[e-mail: Jean-Marc.Zaninetti@univ-orleans.fr]