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Population Ageing:  
Dynamics, and Social and Economic  
Implications at Family, Community and Societal Levels

by

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## NOTE

Any data provided under the heading "Yugoslavia" relate to the Federal Republic of Yugoslavia which, in accordance with the General Assembly Resolutions 47/1 and 47/229, cannot continue automatically the membership of the former Socialist Federal Republic of Yugoslavia.

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### ***Introductory Remarks***

Population ageing is the process of a gradual shift of demographic weights toward the older age-groups in the age structure. Since 1950, the proportion of people aged 65 and older has until the end of the 1980s, increased by a third or more in the United Kingdom and the United States and by more than a half in former Western Germany. The ageing process is projected to go on in the decades ahead for all countries covered by ECE. All these countries are awaiting a re-enforced „gerontological transition“ after the year 2000 when the baby boom cohorts will reach the age of retirement.

This process has some historical conditions, foremost a certain stage of civilisation apt at controlling mortality. Also in this respect, the modern or industrially advanced societies were the forerunners, as always when demographic movements showed new tendencies which could not be foreseen or were held, at that time, for impossible. If we think back to the times of Malthus and his „Essay on Population“ whose bicentennial anniversary of its edition we commemorated this year, then we realise what momentums and potentials for growth and change were hidden in the pre-modern population structures. We become aware of the power of innovation and progress which caused a fundamental re-structuring of societies. Only the greater less developed countries of our time which undergo much more a growth and change will prove out to be of similar global importance. Each generation had to adapt itself to new forms of work and thought and contributed by correspondingly altered demographic behaviour to the gradual re-shaping of the age pyramids. The inner movements they fulfil and the diversity they display throughout all European regions are well known and the conclusions which could be drawn from it say this: Population, subjected to modernising forces and social and economic progress, does not - like nature - make leaps. Like a maturing organism it is pushed by inner forces into a new organisation of its parts, which by its own, prepares and facilitates the next stage of socio-economic development. Only natural, economical or political catastrophes like war and tyranny, can cause a sudden break-up of a development and divert the vital events from a course they have engaged in.

The annually registered number of births and deaths forms the age structure. Although we speak of vital events and modes of „natural“ increase, we know that the tendency of the vital events, fertility and mortality, is indebted only to a lesser degree to nature and, in the meantime, overwhelmingly to civilisation and progress. So if we speak of a demographic structure we also speak of a developmental stage a society has reached and which, in turn, has generated the demographic behaviour.

So the European history of population and modernisation went on through the *Malthusian model* of high levels of births and deaths among impoverished masses to the model of a completed *demographic transition* of low levels of births and deaths in the Western setting of unforeseen prosperity among individuals who prudently and cautiously plan their life course. But even this first modern setting served as a basis for further modernising steps and brought about a post-industrial society which has generated the most recent demographic structure and has gone through a „second demographic transition“. (van de Kaa, 1987)

The characteristics of a post-industrial society were delineated first by the Harvard-sociologist *Daniel Bell* twenty five years ago but he is circumspect enough to renew and to adapt his original version from time to time, not to mention the growing literature of other scholars on the recent stage of „modernity“ or „late modernity“ - all together very complicated texts which seem to reflect the complexities of our day and age. Demographers eager for finding out the post-industrial, late modernist population structure were confronted soon with diversity and the dissolution of phenomena which were typical of the former stage of industrialism: birth levels were balancing out the numbers of death, relatively stable marital unions and their offspring brought about a reasonable quantitative relation between the active population and the elderly. This had formed the clock-like shape of the age pyramid between the World Wars and lasted on till the end of the 1960s. From then on, the age structure seemed to have been put upside down by the second demographic transition. It has undergone the most visible change - from a slightly growing population with a solidly situated age pyramid, notwithstanding the indentations slain by wars and economic crises, to a constrictive one, meaning shrinkage of the population and ageing.

## **1. Population Ageing the main characteristic of industrially advanced societies**

Population ageing as a longer term process relying upon a particular combination of vital events over time. It should be kept in mind that it is a process which populations undergo. Ageing does not mean an „old population“. Even young populations can engage on the way of ageing as Western populations coming out of a „baby-boom“ had done. It is a matter of fact that the downward movements of mortality and fertility as the pre-conditions of ageing had already attracted the attention of science and policy before they flew together into a stagnation of population growth and, after some time, into the phenomenon of population ageing. Social demography was pre-occupied by these movements of the vital events and assigned them to new forms of behaviour which, by their own, reflect the requirements of new complex social circumstances.

### **1.1 Mortality**

The decline of mortality offered always much less pondering than the course in which fertility had engaged. The natural striving of all creatures for survival makes mortality more predictable and more responsive to public action than fertility. The low level of mortality is indebted to the density of modern health services and care and, therefore, based on public efforts and individual responsibility.

So we consider mortality as a lesser complicated subject because it followed, at least throughout the demographic transition, conceivable rules. But post-industrialism brought also some complications into the mortality declines as such and, therefore, into its analysis. Also mortality has reached a new stage:

Since the beginning of the 19<sup>th</sup> century the mortality of the grown-up and active people fell first because the new facilities for a better health were used by the generation in power for itself. At the beginning of our century was the turn of tackling successfully infant mortality by medical invention and public health services. This endeavour could be summed up as a fight

against „premature death“ and concluded the chapter of the secular mortality decline in the course of European industrialisation. Under the eyes of a medical historian, its demographic transition proved out to be an „epidemiological transition“.

Post-industrialism and its second demographic transition re-enforced mortality decline, pushed mortality of some younger age-groups close to zero, but displayed its principal effects in the growing group of the elderly. This stage is marked by a steady postponement of the death away from a point in one's lifetime when it has occurred usually and was, therefore, considered as „natural“. The rise in expectation of life was for a long time due to fewer cases of death in the early stages of life. Expectation of life at birth grew in the same measure as birth became lesser a hurdle and the early years of the new-born gained more prospects of being really lived. Life tables show the rising number of years people have to live through because of fewer early deaths and ever more survivors in old-age groups. A comparison of the further longevity of males and females after having reached the age of 65 of two decades ago and now illustrates this movement in the higher age-ranks.

TABLE 1.1.1

**The Change of Age Structures in Selected Countries  
(Percentage of Total Population between 1960 and 1996)**

Countries	under 15		16-64		65 and over	
	1960	1996	1960	1996	1960	1996
Austria	22.0	17.6 <sup>b</sup>	65.8	67.4 <sup>b</sup>	12.2	15.0 <sup>b</sup>
Belgium	23.5	17.9 <sup>c</sup>	64.5	66.0 <sup>c</sup>	12.0	16.1 <sup>c</sup>
Canada	33.7	20.0	58.7	67.8	7.6	12.2
Czech Republic	-	18.1	-	68.5	-	13.4
Denmark	25.2	17.6	64.2	67.3	10.6	15.1
Finland	30.4	18.9	62.3	66.7	7.3	14.4
France	26.4	19.3	62.0	65.4	11.6	15.3
Germany	21.3 <sup>a</sup>	15.9 <sup>c</sup>	67.8 <sup>a</sup>	68.2 <sup>c</sup>	10.8 <sup>a</sup>	15.8 <sup>c</sup>
Greece	26.1	18.6	65.8	67.6	8.1	15.8
Hungary	-	17.8	-	67.9	-	14.2
Iceland	34.8	24.2	57.1	64.3	8.1	11.4
Ireland	30.5	23.9	58.6	64.7	10.9	11.5
Italy	23.4	15.3 <sup>b</sup>	67.6	68.9 <sup>b</sup>	9.0	15.8 <sup>b</sup>
Luxembourg	21.4	18.5	67.9	67.3	10.8	14.2
Netherlands	30.0	18.4	61.0	68.3	9.0	13.3
Norway	25.9	19.5	63.2	64.6	10.9	15.9
Poland	-	22.2	-	66.5	-	11.3
Portugal	-	17.5	-	67.7	-	14.8
Spain	27.3	16.2	64.5	68.2	6.2	15.6
Sweden	22.4	18.6	65.9	63.8	11.8	17.3
Switzerland	23.5	17.6	66.3	67.5	10.2	14.9
Turkey	41.2	31.7	55.1	63.5	3.7	4.8
United Kingdom	23.3	19.3	64.9	64.9	11.7	15.7
United States	31.0	21.7	59.7	65.5	9.2	12.8
G7	27.9	18.9	62.9	68.9	9.2	14.2
EU-15	24.3	17.4	65.2	67.1	10.4	15.5
OECD Total	-	21.5	-	66.9	-	12.6

- not available

a Ex-FRG only

b 1994

c 1995

*Source:* Labour Force Statistics: 1976-1996, OECD, Paris, 1997

## 1.2 Fertility

As fertility below replacement level is concerned, it is due to a modern reproductive behaviour. Modern or post-industrial man watches anxiously the relatively high standard of living and clears up the latter with expectations for the further lifetime and risks which could make it to drop. So the desire for children is counterbalanced to the maintenance of a rather individualistic welfare optimum. Even little doubts whether this strategy successful will

diminish the motivation for parenthood. As the cases of doubt abound in late modernity, because it changed pre-modern communal security for individualistic freedom and traditional patterns for an ego-centred planning of life course, this new balance of reproduction against lifestyle will, in sum, necessarily result in a deficient procreation.

This higher stage of social and economic organisation, put in demographical terms, means that the reproductive reasoning and behaviour need no longer mortality, resp. infant mortality, take into account. So the reproductive behaviour has lost its demographic point of orientation and fails, therefore, the reproductive minimum of 2.2 children for a couple - in Middle and Southern Europe with a total fertility rate (TFR) between 1.4 and 1.2 by far. If the point of orientation is the personal standard of living, and its groundwork is guaranteed and delivered by modern institutions and collective bodies, the personal welfare standard will be cherished and watched over in terms of avoiding risks and more fate control. Both are typical sources of anxiety in post-industrial societies based on rapid flows of knowledge, fluid occupational chances and non-transparent globalism. (Schmid, 1988; 1989)

In former times, the means of subsistence came from intergenerational ties within the greater family. The risks consisted of a break-up of these ties by an excess of mortality which could suddenly take away the male breadwinner. Maternal death during confinement required an immediate re-marriage because of the care of already born children whose number had to be augmented by some so-called „insurance births“. These were the circumstances under which the necessities of life had enforced an equilibrating demographic balance between births and deaths and entailed the effect of a slightly growing population in Europe until the threshold of the Industrial Revolution. To be sure, nobody wants such circumstances back but what has been erected upon the ruins of our agrarian past is far from being sustainable in demographic terms.

If the European fertility level has reached at a final bottom, is not quite clear, although we witness a certain stagnation around the TFR of 1.2 in the mediterranean regions. Northern European countries show an elevated fertility level which may be indebted to a long and consistent tradition in family policy and a nation-wide supporting system. So we speak of the post-industrial fertility as an unpredictably fluctuating one and as the result of an avalanche-like modernisation after having been bared from it until the last decades under authoritarian or ecclesiastic dominance. Whereas fluctuating fertility characterises the North and a down-fall fertility the South, the low fertility in Eastern Europe is the consequence of a low level of living in course of a post-communist situation and transformation. In spite of its tendency to converge, post-industrial fertility continues to offer regional and historical varieties.

### **1.3 Population ageing**

The ageing of modern populations follows the usual way of demographic change. For a long time, it is a very slow process and, therefore, underestimated as a shape-changing movement. Initially, it consists of little increments which elevate slightly the mean age of population but, finally, pile up to a new demographic structure. Although the phenomenon is not a new one to demographers, it is apt to stir up the modern states: this structure generates an ever growing portion of the elderly and will entail social and economic problems of a new kind.

Population ageing gains momentum when mortality had been successfully battled down and this endeavour is after a certain time lag reinforced by a drop of fertility and insufficient immigration of a younger population. Except of very few cases, low fertility of the post-industrial kind stands below replacement-level of the parents' generation and has become a

common feature of European population. At the same time, Europe has taken over an ambiguous attitude toward immigration since migratory movements between European countries themselves are no longer the main stream but the constant influx from outside the borders of European culture.

Whether immigration be a debatable measure to rejuvenate an ageing population depends on the quantum of people to be substituted annually and the cultural and religious origin of the immigrants as the decisive point concerning their ability and propensity to adopt European occupational and civilian standards. Taking this into account, European populations are on the move toward ageing without any prospect in the near future, of a reversal of tendencies contributing to it.

## **2. *The quantitative look on population ageing***

Population ageing was for long a well-known phenomenon to demographers. Only during the last decade it became its place among the pre-occupations of states and administrations. About 1900, an interest in analysing the age distribution of populations and how they may differ began to rise. *Gustav Sundbärg* pre-conceived a typification of the age of populations and their societies. He took as a criterion, the proportion of the population between the ages of 15 and 50 of the total. If they represented more than 50 percent, a population was progressive and „youthful“, was it equal to 50 percent, the population was a stationary one, and if below of this percentage, it was regressive and „old“. *Sundbärg* offered an analogy to Adolphe Landry's model of demographic revolution he detected also immediately after 1900, when he implied that populations may progressively move through three types of developmental stages over man's history. (Myers, 1985)

The Anglo-Saxon models of demographic transition as constructed by W. Thomson (1928) and Frank Notestein (1944) combined mortality and fertility transitions into an evolutionary scheme which allowed to classify the countries according to their efforts to come through the four stages toward a new industrialised situation. What has been called post-industrial society and second demographic transition plays, therefore, in an unforeseen *post-transitional fifth stage*. It shows deficient fertility on a fluctuating course and a mortality nearly overcome in the younger and middle age-groups and about to be contained in the old-age groups, including the growing group of very old. The survivors of an old-age group entering the next one are rising in numbers, as annually reported, and widen the apex of the age-pyramid. The already mentioned „epidemiological transition“ can be seen as a restructuring of the causes of death: contagious diseases, epidemics and pestilence gave gradually way to infirmity and defects accompanied by the ageing process. Cancer, cardio-vascular diseases and degenerative symptoms became the most frequent causes of death in the West. At the same time, modern medicine and gerontology are about to cope with ever more of such maladies. The rising cost of medical progress and its application to a growing number of patients cause a regular financial gap which has to be narrowed by budget reserves.

For dealing with population ageing as an economic and political problem also the U.N.-system gave important incentives. Since the 1950s, the causes and the social and economic implications of the ageing of populations are a current topic in the UN population reports in the mid 1950s. In 1983 at Vienna's UN-city could be held the first conference on ageing from which a line of growing interest in the subject can be drawn until the social summit at Copenhagen in 1995, not to mention the efforts of ECE to put ageing on the list of topics for

the last European Population Conference at Geneva in 1993 and the World Population Conference held in Cairo in 1994.

In addition to the demographic division and population sections of the UN-system, also the Population Council, IUSSP and CICRED stand for the academic and analytical side of the topic. They deliver the data base which contains the determinants of the ageing process in all their variety. (Bourgeois-Pichat, 1981; Coleman 1996)

## **2.1 Determinants of the ageing process**

The ageing process is determined by a particular combination of vital events, migration and a time-factor. The temporality of particularly combined numbers of births and deaths reveal the dynamics of an ageing process; it is the goal of its analysis and the most important base for a social and political response.

When we analytically divide relative ageing and absolute ageing, then we find the relevant determinants for each kind of ageing. *Relative* or „*bottom-up*“ ageing means a growing proportion of the elderly by virtue of a fertility decline and a dwindling youth base in an age composition. Here the elderly grow in percentage of the total population even if their number did not change at all. The determinants are the excess of births over deaths or vice versa, and the quantitative consequences over time. The watching of little time spans will not be much revealing but the results compared with those after a decade or more can show the dynamics of change. In a quarter of a century, Germany's birth decline cumulated up to an absolute population decline and raised the relative proportion of the elderly - and their political importance in an electoral democracy.

*Absolute* or „*top-down*“ ageing refers to a real prolongation of the lifespan. Its most important determinants we find in the national life tables, the medical statistics and the success and progress of the research in gerontology. Here also rises the proportion of people who are at older ages but regardless of other biosocial shifts in the population such as deaths and over births. In societies which had brought down the infant mortality to lowest levels, an expectation of life at birth will steadily go up and illustrates the process of an absolute ageing.

As medical statistics chronicle kinds of age-related morbidity which medical research and gerontology tackle with good prospects or visible success, absolute ageing will go on. More popular an indicator is the growing number of people reaching their hundred years and the growing group of population between the ages of 80 and 100. The „very old“ became a particular segment in the distribution of ages which requires most a custodial care.

TABLE 2.1.1

**The Growing Number of Centenarians  
(1960 and 1990)**

Country	1960		1990	
	Number	Per million	Number	Per million
Austria	25	3.5	232	29.8
Denmark	19	4.1	323	62.8
England & Wales	531	11.6	3890	76.3
Finland	11	2.5	141	28.3
France	371	8.1	3853	67.9
Germany (West)	119	2.2	2528	40.0
Iceland	3	17.0	17	66.7
Italy	265	5.4	2047	35.5
Netherlands	62	5.4	818	54.7
Norway	73	20.4	198	70.7
Sweden	72	9.6	41	68.1
Switzerland	29	5.4	583	50.4

*Source:* Kannisto, 1994.

## 2.2 Types („models“) of ageing in countries covered by ECE

The dynamics of the ageing process becomes clear when it gains momentum through a combination of determinants of relative and absolute ageing. Therefore we can give a new typification of the ageing process according to its tempo. And here we can state that in modern European societies, the relative ageing has begun to set the trend. Four tentative models of ageing should be presented. They have been constructed on grounds of the mode of birth decline and the level of fertility and the constantly growing expectation of life for both sexes. (Stolnitz, 1994)

- (1) *The model of sharp ageing on grounds of constant and long lasting effects of its determinants:* It combines long-lasting fertility below replacement level and growing longevity through high standards of living and health services. This model encompasses those countries which were first to show the lowest fertility level in history, i.e. immediately after the baby-boom, and whose health services hold a high standard in medical care and financial generosity. Typical of it are the countries of the „Germanic cluster“: Germany, in its former both parts, Austria and Switzerland generated in the early 1970s total fertility rates around 1.4 and nobody could imagine that it would prove out to be a longer-lasting phenomenon. This level of fertility which means a lack of one third of births to balance out numerically the preceding generation diminishes, already for a quarter of a century, the juvenile bottom of the age pyramid and entails ageing from the bottom. At the same time, the health services and the generous endowment of the present generation of pensioners work together in rising the longevity.

In 1960, during the baby-boom, the age-distribution of Western Germany was that of a

stationary population: the young up to 15 were 21.3 per cent of the total, the active population stood at 67.8 per cent and the elderly of 65 and over at 10.9 per cent. Only 30 years later, the distribution has already changed: the young under 15 made only 14.9 per cent, the active ones 69.7 per cent and the percentage of the elderly climbed up by half, i.e. to 15.4 per cent of the total.

Whereas on the territory of the former German Democratic Republic this distribution of ages was rather stable until the end of the 1990s on grounds of a pro-natalist policy, its effects vanished with Germany's re-unification and the incorporation of the younger Eastern German Population into the greater Western German Population showing the sharpest ageing process in the world. This can be stressed by a substantial rise in the expectation of life from 68 for males and 72 for females in 1960, up to 73 for males and 80 for females in 1997. (E. Grünheid, 1998)

Beside of Germany, Austria and Switzerland, other countries of the Western European region fit into this model such as Belgium, Luxembourg and the Netherlands. The latter fell from a higher fertility level in the 1970s to the usual low-one and registered a rise in longevity as it is going on in central Europe. The countries subsumed under this model combine the determinants of ageing in a way which brings it on a sharp course. (Table 1.1.1)

- (2) *A second model of sharp ageing but coming later and at an accelerated pace* points out to countries which, combine a rapid birth decline down to the lowest level in Europe only in the last decade and a longevity growing out from lower proportions of elderly. The ageing process will be a sharp one but its incidence is postponed because of a later-coming in fertility decline.

Characteristics of this model show countries of southern Europe which became members of the European Union when they had not yet reached the level of overall modernity like other northern and central European states. Much investment and some steps forward on the way toward more liberalism in economics and politics brought about a change of people's mobility, family life and also of demographic behaviour. This may not be enough for an explanation of total fertility rates of the lowest kind but it must be part and parcel of the modernisation push in these countries. The shift from traditional Mediterranean family and fertility pattern of a TFR of 2.3 at the average around 1980 down to a TFR of 1.2 for Italy and Spain, and of 1.4 for Portugal and Greece in the early 90s, was an astonishing fact for the community of social scientists.

A comparison of the distribution of the main age-groups at different points of time reveal that these countries are later-comers to modernisation and ageing but eager to catch up the level of forerunners and, maybe, to surpass them. The development of the proportion of the young up to 15 years points out to the brute fertility decline and, additionally, to the lowest level ever known. The proportion of the elderly of 65 years and more fits into the general age-distribution as found in other Western regions. But the countries concerned brought it about from a lower proportion of elderly in their 60s. This may justify to speak of an accelerated model of ageing and to see it bound together with equally accelerated efforts to modernisation.

The tendency underlying this model applies also to Malta and Cyprus. The countries lag behind regarding the ageing process from the bottom of the age distribution. But their life expectancy drew level of the southern Europeans.

TABLE 2.2.1

**The shift toward ageing in southern European countries  
(Sharp, but postponed ageing - Model 2)  
- main age-groups between 1960 and 1995 -**

Country	0-14			15-64			65 and over			Expectation of life at birth			
	1960	1990	1995	1960	1990	1995	1960	1990	1995	1960		1995 *	
										m	f	m	f
Italy	24.7	16.8	15.1	66.1	68.5	68.5	9.2	14.7	16.4	67.2	72.3	74.1 <sup>a</sup>	80.5 <sup>a</sup>
Greece	24.8	19.5	17.1	65.8	66.8	67.6	9.4	13.7	15.3	67.3	72.4	75.0 <sup>b</sup>	79.9 <sup>b</sup>
Portugal	29.2	20.8	18.0	62.8	65.9	67.6	8.0	13.3	14.4	61.2	66.8	71.5	78.6
Spain	27.4	20.0	16.9	64.4	66.7	68.0	8.2	13.3	15.1	67.4	72.2	73.2	81.2
Malta **	36.9	23.4	22.0	55.7	66.1	67.1	7.4	10.5	10.9	-	-	74.9 <sup>b</sup>	79.0 <sup>b</sup>
Cyprus **	36.6	26.0	25.4	56.9	63.1	63.6	6.5	10.9	11.0	-	-	74.6 <sup>a</sup>	79.1 <sup>a</sup>

*Source:* EUROSTAT. Population Statistics 1996.

\* Council of Europe. Recent Demographic Developments. 1996.

\*\*United Nations, The Sex and Age Distribution of the World Populations - The 1996 Revision.

- Own calculations -

<sup>a</sup> 1993

<sup>b</sup> 1994

- (3) *A model of a gradual and creeping ageing*: it is a delayed process due to higher levels of fertility which exert a retarding effect on the process of both relative and absolute ageing. For some immigration countries, covered also by ECE, the preference for young immigrants has a similar effect of retardation and delay of an ageing process which would, otherwise, reinforced „from the bottom“.

Northern European countries and France, well-known for higher levels of fertility can be comprehended under this model. They hold, for decades a mean total fertility rate of 1.7 which is considered as an elevated one in today's Europe. It brings about an ageing model that means a greater distance to those countries which display of the former-mentioned models. As to the development of the expectation of life, they make no significant difference to other Western ECE-countries. (Table 2.2.2)

**TABLE 2.2.2**

**Sharp Ageing (Model 1) and Delayed Ageing (Model 3) in Europe  
(Comparison of selected estimated Indicators for 1998)**

<b>Model 1 countries</b>	<b>TFR</b>	<b>0-15*</b>	<b>65 +</b>	<b>Model 3 countries</b>	<b>TFR</b>	<b>0-15</b>	<b>65 +</b>
Germany	1.3	16	15	Norway	1.8	20	16
Austria	1.4	17	15	Denmark	1.8	18	16
Switzerland	1.5	18	16	Ireland	1.9	23	11
Belgium	1.6	18	16	Iceland	2.0	24	11
Netherlands	1.5	18	13	Sweden	1.6	19	17
Luxembourg	1.8	19	14	U.K.	1.7	19	16
Lichtenstein	1.5	19	10	Finland	1.8	19	17

*Source:* 1998 - Data Sheet, Population Reference Bureau, Washington D.C.

The ageing ratios like expressed in the relation „old“ (65+) to „young“ (0-15) show for the gradual and delayed model of ageing lower scores than those for the first model based on constant determinants conducive to a sharpened ageing.

Immigration countries like the USA, Canada and Israel have a built-in counterbalance against ageing as immigrants are in the younger and active age-groups and mean a steady rejuvenation of the age-structure. The ageing ratio (66+/0-15) makes for the USA 22:13, for Canada 20:12, and for Israel 30:10. So an immigration of usually younger people functions as a breaking-shoe against a faster pace in the ageing process.

- (4) There is a *fourth model of ageing in the eastern European countries in transformation* whose future prospects and even the results of projections are very unsure. In this model the determinants of natural increase respectively decrease combine in a perplexing manner. By this typification should be described the demographic situation of Eastern Europe, i.e. of the Community of Independent States, the parts of the former USSR and other „post-communist“ states in eastern and middle Europe. They are considered as being in transformation and about to install a Western style of democracy and market economy in a strange rhythm of success and backlash.

Among the new states we count those which have altered the political regime but remained in their post-war borders (Bulgaria, Poland, Romania and Hungary) and others which were erected within new borders by a splitting process of a former greater whole. (Belarus, Russian Federation, Ukraine, Moldavia, Czech-Republic, Slovakia,).

This populations offer a picture of a *demographic transitional paradox* as they show a low fertility which is only found in central and southern European populations and, at the same time, mortality rates which are uncommonly high. Both vital rates, in sum, flow into an absolute population decline. The distribution of the main age-groups show an elevated proportion of the young (0-15) like in the Nordic model of 20 percent and over, the proportion of the elderly (65 and over) lies at 12 percent and slightly below to the average in Europe. The data base for the Czech-Republic and Hungary points out to their insertion into the middle European pattern. A superficial review of the vital rates would put these eastern populations at the last stage of a successfully completed demographic transition. But a closer look at other indicators of mortality such as life expectancy at birth for both sexes reveal that the higher mortality rates are, by no means, due to an ageing by modernisation, but much more to anomical situations in the transformation countries, to a loss of norms and reliable patterns of trust, which exert influence on the daily life and the demographic behaviour: the life expectancy for both sexes in Eastern Europe is, on the average, with its 68 years up to ten years below to the average of total Europe. The life expectancy for men lies at about 62 years and that means a considerable distance to an average of 73 in all other parts of Europe. The same is, to a lesser degree, reported for women. Their life expectancy lags about five years behind women in western Europe. The paradox of the eastern European model lies in the fact that it combines lowest fertility levels of highly modernised regimes with the lower life expectancies as they existed during the recovery period in post-war Europe. The western demographic transition delineates the decline of mortality followed with some time-lag, by a similar decline of fertility. The eastern European model displays a movement which contradicts all experience and what is held for general knowledge: declining fertility encounters equally declining life expectancy. So we find here an effect of retardation of the overall ageing process, by frequent, premature deaths, particularly of the male sex.

If we are about to speak of countries which came into being in course of the break-down of a greater empire, then some remarks should be made on the situation in the southern-eastern region, the Balkan. The former Yugoslavia fell to five resurgent pieces which display their ancient religious, historical and geographical preferences. Civil war, secession movements and on-going ethnic conflicts confirm the multicultural feature of this region, and its existence at mercy of greater powers for centuries. Regardless of irregularities like migration, expulsion of people, losses by use of force and asylum-seeking in neighbouring countries which may have an influence on the frequency of vital events, the crude birth rates and death rates draw level of the Western „natural decrease“, i.e. a slight absolute loss of population or stagnation. The expectations of life at birth

show a certain lag in comparison with other regions of middle, western and northern Europe, but not in the dimension of Eastern Europe. Both Yugoslavia and Bosnia-Herzegovina have an estimated expectation of life of 70 years for men, that one of Croatia has only 66 years, and for women that comes to 75 years. The data of Slovenia, the nation state which did not get entangled in the Balkan conflicts, insert completely into the Western European model.

**TABLE 2.2.3**

**Expectation of Life at Birth in selected ECE-Countries**

Country	1960 *		1980 **		1995 **	
	male	female	male	female	male	female
<b>- Model 1 -</b>						
Germany	-	-	70.2 <sup>b</sup>	76.9 <sup>b</sup>	72.8 <sup>a</sup>	79.3 <sup>a</sup>
Luxembourg	66.5	72.2	70.0	76.7	72.6 <sup>1</sup>	79.1 <sup>1</sup>
Switzerland	68.7	74.5	72.4	79.1	75.3	81.7
Netherlands	71.5	75.3	72.6	79.3	74.6	80.4
<b>- Model 2 -</b>						
Italy	67.2	72.3	70.6	77.4	74.1 <sup>2</sup>	80.5 <sup>2</sup>
Spain	67.4	72.2	72.5	78.6	73.2	81.2
Greece	67.3	72.4	72.2	76.6	75.0 <sup>3</sup>	79.9 <sup>3</sup>
<b>- Model 3 -</b>						
Norway	71.6	76.0	72.3	79.0	74.9 <sup>3</sup>	80.6 <sup>3</sup>
Denmark	70.4	74.4	71.2	77.3	72.5 <sup>3</sup>	77.8 <sup>3</sup>
United Kingdom	67.9	73.7	70.8	76.9	74.2 <sup>3</sup>	79.4 <sup>3</sup>
France	66.9	73.6	70.2	78.4	73.7 <sup>2</sup>	81.8 <sup>2</sup>
<b>- Model 4 -</b>						
Bulgaria	-	-	68.4	73.6	67.3 <sup>3</sup>	74.9 <sup>3</sup>
Rumania	-	-	66.5	71.8	65.7	73.4
Czech Republic	-	-	66.8	73.9	69.5 <sup>3</sup>	76.6 <sup>3</sup>
Hungary	-	-	65.5	72.7	64.8 <sup>3</sup>	74.2 <sup>3</sup>
Poland	-	-	66.9	75.4	67.6	76.4
Russian Federation	-	-	61.5	73.0	57.6 <sup>3</sup>	71.2 <sup>3</sup>
Turkey	-	-	59.2	64.8	65.7 <sup>4</sup>	70.3 <sup>4</sup>

*Source:*\* Eurostat. Population Statistics. 1996

\*\* Council of Europe. Recent Demographic Developments. 1996.

<sup>a-</sup> after Reunification      <sup>b-</sup> before Reunification

<sup>1</sup> 1992

<sup>2</sup> 1993

<sup>3</sup> 1994

<sup>4</sup> 1989

### **2.3 Demographic diversity and the drive to convergence**

These four types of ageing refer to four different sets of indicators conducive to it. But in spite of differences between the sets of indicators, of coefficients and time-lags we cannot help confirming a growing convergence in overall demographic trends. The tendency toward ageing prevails upon the regional diversities. (European Commission, 1995)

It would be a premature or an utopian assumption that the regions under ECE would engage into a way to uniformity and to a situation where country reports are no longer necessary because they allegedly show very similar demographic data, are facing the same problems and can make therefore, the same policy. On a grand scale, the development of modern societies will go the same direction, as modernisation and aspirations are related to an increase of possible options and will be extended to all social strata. Similarity we find in age-structures. It was the base for constructing the four models presented above. Diversity between the models themselves can be expressed in terms of time-lags and it will take the time-span of another generation until the four models would have been shrunk to a number of two - leaving over, maybe, a western and an eastern European model.

An other conjecture that differences between ECE-countries will not vanish soon comes from experiences with modernity endangering traditions and the resistance it provokes on the local level. Geographical and historical particularities form local identities and condition attitudes and behaviour. So the idea and the shift of cross-national data toward convergence raises a twofold question:

1. On what level one can argue for a coming convergence?
2. Will a convergence of structures and problems also lead to a similar set of problem-solving measures in different countries?

As to the first question we have to look upon the common characteristics of the age pyramids, like the shrunk base meaning low fertility levels, the baby-boom bulge, above it, with the most numerous age groups currently between 25 and 45 year olds and finally, the ageing process from the top. The ageing indicator relates the old-age groups of 60 and over to the younger groups up to 19 and yields a ratio of four elderly people to five of the younger group. The indicator for the intensity of ageing is the ratio of the very old of 80 and over to those between 60 and 79 and it is now about 1 to 5. Both ratios are likely to increase; the first one with an extension of the elderly of 60 and over, the second ratio when the larger age groups pass the threshold to 80 and over. As many social, economic and political decisions require a reliance upon demographic data such as the age structure and the size of the age groups, the patterns of political action will make the countries more or less similar: education and school enrolments, age of legal responsibility, age of entry into work, retirement etc. are in the centre of modern societies' concerns. Problems arise when the balance between the active population and the dependent groups of the old and the young is lost, i.e. only small-sized young age groups enter into activity and ever larger old-age groups retire. This imbalance is usually in all countries compensated by growing portions of the public budgets.

A common policy within economically based associations of countries (European Union, Visegrad-treaty countries, NAFTA) and global market may lead to a common level of aspirations which bring about a demographic and reproductive behaviour taking into account a personal welfare optimum. Local cultures are not strong enough to counteract the existing trends. Age structures and problems arising from the former shifts seem really to converge in the more advanced regions under ECE.

The second question aims at the means of problem-solving, and here, the countries must use the wide range of political and economic instruments to cope with constant pressure on financial resources by virtue of demographic ageing.

The idea that an overall convergence of demographic trends will allow a general responsive policy toward ageing is a premature one. To be sure, many differences which existed 10 or 20 years ago have levelled out between many countries but some will last and exert influence. This idea of an overall convergence pre-supposes an equal economic situation and development because mortality and also migration are much dependent on economic cycles. The maintenance of a low mortality level and a high life expectancy needs constant investment and synergetic efforts.

Differences will, surely, last in the realm of immediate demographic behaviour like in household and family life. A great number of personal choices are about to dissolve the clear patterns which held good during the prosperity in post-war Europe. But beyond the individualistic mainstream in life-course choices the ageing of the population has become the common feature of the demographic development in countries under ECE. Even if the diversity of the indicators of ageing should have narrowed because of assimilating age structures the response of the countries' administrations, financial policies and social networks must rely upon a variety of measures and will be selected in accordance with a country's capacities and experience.

### **3. Social implications of ageing**

After reviewing the phenomenon of ageing, its profile and intensity in different regions and states under ECE, one has to turn over to implications for social and administrative units. Findings on that will be the point of departure and application for inevitable public action. Let us give in advance an overview of the social sciences' concern about the subject. The first issue is how to define „old“ or „being old“ in modern societies with rising life expectancy.

The next step will be the attempt to differentiate old-age groups and to analyse their respective functions in a society. Life course and family systems as affected by low mortality and indicators of ageing, and the relationship between retirement and social security are taken into account. (Myers, 1985; Stolnitz 1994; Dooghe, 1994)

#### **3.1 „Old“ - at odds with biological and socio-political definitions**

„Being old“ refers to a social definition and reflects the sociological variety of meaning which old age can display. Being of old age is to be defined twofold - according to objective criteria offered by a society's culture and administration, - and according to criteria of subjectivity: one's age is, therefore, a matter of determination („as old as one feels“), a self-identification by biological and physical properties and matter of a psychological self-concept. Both levels of definition were identical in pre-modern, pre-bureaucratic times. Modern administration in labour markets, public services and armed forces gave prevalence to their own, i.e. objective or bureaucratic criteria of being „old“. And the main criterion is determined by the interests of institutions and corporations to renovate the body of actives. Peasant societies had a need for long-lasting experience in agriculture and wisdom of the old-aged. For that reason, they were highly esteemed and addressed with „venerable hoary“. Industrial society with its technical

framework made a shift of importance to the younger age-groups. The intrusion of precision, punctuality, calculation and uncommon decision-making concerning into the working process debased ancient wisdom thoroughly. This has become a societal tendency and proved out to last-on till these days.

The variety of life-styles and forms of employment have made it more difficult than ever before to state a generally accepted threshold whose trespassing is identical with becoming „old“. So all fixations, also only for statistical registration's sake, are unsatisfactory and entail lots of clarifying footnotes. International reports let old age begin with 65. But we know that at the end of 50s many countries allow retirement from the active life, particularly for women. So the Europeans agreed on setting the fixed age of 60 for describing a person's belonging to the aged population. But labour exchange-offices, for instance in Germany, admit that most actives quit before reaching their 60 years or take a transition into retirement via disability benefit. Only the group of academic and independent professionals remains in active positions at least until the mid-60s.

If the inclination of workers and employees to quit as early as possible and the interests of entrepreneurs to get rid of staff because of more „lean production“, and of the older staff-members in particular flow together and should be effectuated by means of a „retire early“-system, the budget for a growing number of aspirants for pension and annuities must be well-endowed and have good prospects for further financial inputs. An unlimited early retirement system within a Bismarckian frame of social security (the pensioners are supported by the active labour force) is self-destructive, because an increasing number of retired diminishes the number of actives and, continuing this path, they will undermine their base of existence. This downward trend would be accelerated as youth for substituting the elderly on the same scale is not available in a low-fertility population and as in high social standard systems the hiring of workers and employees is held by entrepreneurs for an avoidable risk

For keeping the social protection system functioning, policy must have in mind: the attitudes of the active age groups with respect to the time to be spent in the labour force until retirement, and the willingness and the capability of the economic entities to employ payroll tax contributors to the old-age security system and to contribute to it by themselves via taxation. All European countries feel already affected by shortcomings which regularly occur at one ore more of these crucial points in the fabric of a social security system. So we are a bit lost if it comes to us to determine or fix a date which should mark the entry into the sub-population of the aged. Ageing societies are low-mortality societies which count among them the younger old from 60 to 75, the old-aged between 75 to 80 with whom the cases for custodial care begin to grow and the very old from 80 onward to the amazingly growing number of centenarians.

*Norman Ryder*, the family demographer, made the proposal to fix the entry into old-age at ten years remaining to life expectancy (Ryder, 1975). But this is a biosocial idea and public institutions will follow their own ways and try to fix the end of activity according to their own convenience. There are army positions which one has to quit for pension relatively early in order to make free the career ladder and to elevate the job satisfaction of successors.

### **3.2 Differentiation of the old-age group**

Age boundaries are relevant for some important questions: what age-group is able

- to retain a self-responsibility and autonomy regarding the necessities of daily life
- to accomplish functions in economic and public institutions - in full accordance with their physical constitution, mental capacity and render life experiences to younger age-groups
- to support children and close relatives by virtue of a prosperity which „better times“ had provided for and to bring them better through phases of life which are charged with the particular burdens like family formation and so on
- to estimate, on grounds of medical statistics, the point of time from which a growing number of cases in need for part-time or day care will substantially grow
- to co-operate with institutions which are apt or inclined to facilitate the societies' tasks bound up with the ageing process: the first to address will be gerontology for extending the group of the younger old, usually kept in good health and able to fulfil functions in particular social segments. In other words: it deals with postponing the boundary between the younger old and the old old and, therefore, working on an ongoing ageing „from the top“. At the same time, institutions for aged people must undergo a regular revision as to their number and places in it for the future, and as to their state of sick-nursing and treating old people needing care. A decisive role is already attributed to architects. They have to design and to carry through new ideas on how the homes of the old-aged could be constructed and what infrastructure could compensate old-aged people's declining agility and mobility.

Social planning must take into account the number of old-aged who are able to stay at their home and to manage some sort of self-supporting, in the second stance those who are in a morbid state and must be kept in a medical centre, at least in an institution for the old attached to a hospital. Each group has own organisational needs and requires a staff trained in the most recent state of knowledge of old-age care and nursing.

The capability of maintaining the existing level of services when the claimants inevitably grow in number depends on financial resource and the amount which can be budgeted for it. In order to cope with the rising amounts for all these purposes administration and policy must mobilise all acuteness for weighing out rising cost by more ingenious organisation, innovation and synergetic input.

### **3.3 Life course and family cycles as affected by indicators of ageing**

Life course refers to life stations which one has to reach during the formation or working life or which are institutionalised at a particular age; may it be related to personal duties, choice or achievement, the people concerned are entitled to address the community or the state for particular services. So they belong to administrated bodies for a shorter span of time like in education and occupation or by a lifelong membership to a family, religion and nation. Economics places labour force participation and its termination in the forefront, demography lays more weight upon the family cycle and partnership. (Schrage-Dijkstra, 1994)

The prolongation of life has changed the timing of events and the time-span between important events in the personal life course. This has changed also the family cycle. Education, family formation, child-bearing, parenthood and later family life in an „empty nest“ are important phases of the family cycle whose duration have extended as death of a partner, mostly the male partner, comes later in old-age. The usual phase of widowhood may,

according to the current female life expectancy, experience a considerable extension. As such an increase of lifetime influences the choices to be made during the life course, it has been debated if there exists a connection between longevity and the divorce rate. Men spend more years than ever in their active phase of life and will be kept longer in good health conditions. Males can expect, after having left the working position at about 60, another 15 years of „being on earth“. It would be difficult to find out an immediate causality but the temporal postponement of death makes more inclined for a re-orientation of one's life course and partnership. The concept of a „mid-life crisis“, often used with its ironical connotation, is a topic of public discussion since life expectancy for men has risen beyond 70 years. Some family historians insist on a more decisive point for explaining the comparatively high divorce rate: the loss of supportive and economical functions of the family and a better access to public assistance for mothers after divorce. Although the petitions for divorce from women's side have augmented during the last decades, the high divorce rate is, to a greater extent, due to a male attitude as the frequency of re-marriage of men is much greater than that of divorced women, especially of those with children.

In pre-modern societies, the time spent in marriage amounted only to 15 years on the average because the high mortality had ended marriages more often and earlier. Today the family formation (birth of the first child) begins between 25 and 30, the sequent phase of parenthood lasts up to 30 years and the following time spent in post-parental partnership (after the youngest child's leaving the home) can last as long as that.

As to the living arrangements of the elderly, the divergence of the life expectancy of both sexes gains importance. Old-age males are more often married than females who are more often widowed after entering the older age groups. While with increasing age the mortality of (mostly married) males also increases, the females enter, to a much greater extent, widowhood. The data for persons who remained married until the entry to the aged population show better survival chances throughout the later years of life than celibataries. So the „increasing *joint* survival of married persons“ (Meyers, 1985) becomes a force behind longevity.

A look on German data of the birth cohorts from 1912 to 1916 for both sexes gives an example for the consequences of ageing for family systems: males who had reached in 1972 their 55-59 years of age are still alive 20 years later only by half; females, however, survive by half 25 years later. (Schwarz, 1989). In 1987, when the cohorts were between 70 and 74 years old, 80 per cent of the males were still married, but only about 35 per cent of the women. During the 15 years (1972-1987) the proportion of widowed men rises to 13 per cent and that of women to over 50 per cent. Since most of men in the advanced age groups are still married and very few are living alone, women at the mid-70s live alone up to more than 70 per cent. Living alone becomes ever more reality as nuptiality decreases, divorce rates go up and fertility falls, and so the chance of a care and nursing by family members diminishes drastically. Women between 20 and 40 are usually to be seen as the most apt to care for older parents and grandparents. But their growing incorporation in the female labour force and their wish to pursue an own occupational career will make them less available for nursing duties. Furthermore, it must be kept in mind, that the number of 20 to 30 year old women will also decrease by half by virtue of the birth decline from the 1970s and onward in most parts of Europe and ECE-countries. (Schwarz, 1989)

#### **4. The Economic Implications of Ageing**

The modern world is heading for a pincer-like situation. Although ageing is going on since about two hundred years, it has been disregarded for a long time because the level from which it took off was very low and its slow mounting was hidden behind all other improvements of life conditions. In spite of conjections by Lord Keynes, the star-economist in the 1930s, demographically-induced imbalances were meant to be problems of a second order and put aside in good conscience. The invention of a flexible and dynamic economic system reassured concerns about imbalances including demographical ones which would not find their self-restoring mechanism. Only at the present, major shifts of demographic structures became a matter of deeper concern again or a generally felt predicament..

The baby-boom in the 1960s when extended youth cohorts were born in modern welfare states, made economists and politicians inclined to take into account not only of business cycles, but also demographic waves. As times went on, the baby-boom generation is now in their working-age years. It causes, alternately, revitalisation and shortages and raises the discussion on its destiny when it will reach retirement age. So the long forgotten relationship between the generations and their mutual dependency came to light again after having been concealed behind collectivistic and apparently functioning social bureaucracies. The combined processes of ageing from the bottom through birth decline and that one from the top by increased longevity will be reinforced by a baby-boom coming of age and may push the overall ageing of modern societies on to a precarious momentum.

The pincer-like situation turns up when demographic shifts and ageing begin to affect the economy which has to generate sufficient output to meet the growing needs of social security or protection systems. Unless they are not fed by additional contributions they will come under serious financial strain and will have an unsettling effect on the political system as a whole. The UN-system, the World Bank included, draws the attention of the member states to this problem, defines ageing as the inevitable challenge for the future of all political regimes and urges policy response and planning in this respect. Although the modern world is hit first by the challenge of ageing populations, the phenomenon gains remarkably ground in the less developed world.

##### **4.1 Social security under demographic and economic strain**

When the social security systems were created around the turn of the century, the European populations and even the economy, resp. the employment rates seemed never to become a threat to their functioning. The young and active cohorts outnumbered by far the relatively few elderly and the systems, on insurance base, widened the field to all vicissitudes of life: injury, illness, unemployment, beside of the inevitable human fate, i.e. old-age and morbidity as its concomitant.

French demographers, well known for their frankness in this matter, call ageing also an „inversion of the age pyramid“ with the following consequences: (Calot, Chesnais, 1997)

- aggravation of demographic deficits
- ageing of the labour force entailing modified economic behaviour
- growing pressures on public budgets, and
- heavy strain on the financial funding of social security/protection systems.

Additionally to the impressing change of the age distribution during few decades, the dependency ratios, resp. the aged dependency ratio show more immediately the impending burden which the shoulders of the coming generation will have to bear. Birth decline is about to reduce the number of people in the active age during the number of people at retirement age. This relationship is expressed in a elderly dependency ratio ( $> 60/20-59$ ) is rising and will reach its peak around 2030 when the baby-boomers have passed through working life and have entered retirement. For the time between 1950 and 2025 shows the following Table 4.1.1 the diminishing youth burden, according to the preceding mode of birth decline, and the growing ratios of the aged of 60 years and more. The grouping of the subregions corresponds roughly the model typology in chapter 2.

**TABLE 4.1.1**

**Dependency ratios by subregions, 1950-2025 \***

<i>Dependency ratio</i>	<i>1950</i>	<i>1975</i>	<i>2000</i>	<i>2025</i>
<b>ECE region</b>				
<b>Total</b>	<b>63,5</b>	<b>68,7</b>	<b>64,7</b>	<b>75,3</b>
Youth	44,6	42,9	35,7	35,6
Aged	19,0	25,8	29,0	39,7
<b>Western Europe</b>				
<b>Total</b>	<b>62,1</b>	<b>72,2</b>	<b>63,7</b>	<b>80,5</b>
Youth	38,9	40,0	29,2	31,0
Aged	23,2	32,2	34,5	49,6
<b>Southern Europe</b>				
<b>Total</b>	<b>67,8</b>	<b>75,6</b>	<b>66,2</b>	<b>66,5</b>
Youth	52,6	55,2	42,9	37,0
Aged	15,2	20,4	23,3	29,6
<b>Eastern Europe</b>				
<b>Total</b>	<b>62,9</b>	<b>65,3</b>	<b>68,1</b>	<b>74,0</b>
Youth	47,2	41,8	38,5	37,5
Aged	15,7	23,5	29,6	36,6
<b>North America</b>				
<b>Total</b>	<b>64,6</b>	<b>66,5</b>	<b>60,2</b>	<b>78,2</b>
Youth	44,7	42,1	34,6	35,9
Aged	19,9	24,4	25,6	42,3

\* Number of persons under 15 years and 60 years and over per 100 persons aged 15 to 60 years

*Source:* ECE-Secretariat, in: Stolnitz, 1992, p. 26

For Germany, this ratio stands today at 39; but in 2040, hundred active contributors will have 65 claimants to support. This means an uprising of the financial burden on social-protection systems because the number of workers who have to fund these systems will decrease and not only for reasons of former birth declines. Ageing affects the supply of labour.

As the active and wage-earner potential remains relatively stable, in absolute figures for the whole, so the distribution between the 15 to 20 years old and those between 21 and 65 experience an amazing shift. This will be aggravated when the baby boom bulge moves into the ranks of higher age of activity. (Schmid, Chruszcz 1994). The climbing up of the mean age of a labour force triggers off concerns about its innovative capacities in a world of science-based productivity and economic success. A push toward higher skills and qualifications of the labour force has already become necessary in the course of technological progress and had

downgraded workers with lower skills or the unskilled. Greater portions of unemployed are conducive to lower contributions to security systems and lower tax revenues. Furthermore, high-technology economics require a longer school attendance and the propensity of workers to retire earlier than ever before. So the periods in wage-earning work is substantially shortened up and became questionable if the higher wages under modern working conditions and productivity will match the rising cost which stem from more elderly, and higher prices for health-care. According to opinions of experts, post-industrial economies whose knowledge-base yields up to 60 per cent or more of the gross domestic product (GDP), have under global competitive conditions difficulties to bring about full employment and simultaneously constrained to cut down expenditures. So demography, economy and technology on a large scale and the many personal preferences concerning the point of time for retirement combine to an ever smaller base of contributors to a social security system, which will, all things remaining unchanged, operate on the edge of bankruptcy. (Keyfitz, 1982, 1983)

#### **4.2 Ageing and the pension expenditures**

The growing pressure on public budgets and on funding the social security or protection systems becomes the key of problem of economics with population ageing. This means the financing of retirement pensions under severe conditions. In order to bring more balance in this deficient accounting of increasing members of claimants and decreasing numbers of contributors one has to look again at dimensions: the demographic dimension, and additionally at the principle on which the financing of the retirement pensions is based, and the dimension of investment to raise the level of productivity and the organisational levels for old-age life-styles and care.

The demographic dimension behind such a pressure on public resources and expenditures is best described by the elder population growth. Table 4.2.1 on the distribution among the 60 years old and over. Above, it was already mentioned that this age-group will augment to a third of the population at about 2030. The following table illustrates how between 1950 and 2025 the so-called very old will grow up to a third of the elder population. It has to be reminded that about 1950 the life expectancy at birth stood below the 75 years, on the average.

TABLE 4.2.1

**Population distribution among those 60 and over, by age and subregions, 1950-2025  
(Per cent)**

<i>Age group</i>	<i>1950</i>	<i>1975</i>	<i>2000</i>	<i>2025</i>
	<b>ECE region</b>			
<b>60 and over</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
60-74	78,9	75,7	72,1	72,1
75 and over	21,1	24,3	27,9	27,9
	<b>Western Europe</b>			
<b>60 and over</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
60-74	78,1	74,7	69,1	68,8
75 and over	21,9	25,3	30,9	31,2
	<b>Southern Europe</b>			
<b>60 and over</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
60-74	80,1	78,8	76,3	74,4
75 and over	19,9	21,3	23,7	25,6
	<b>Eastern Europe</b>			
<b>60 and over</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
60-74	79,7	77,9	76,9	73,8
75 and over	20,3	22,1	23,1	26,2
	<b>North America</b>			
<b>60 and over</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
60-74	78,9	72,8	66,5	72,2
75 and over	21,1	27,2	33,5	27,8

*Source:* ECE-Secretariat, in: Stolnitz, 1992, p. 27

The modelling of the relationship between the three generations for successive and mutual support are accustomed to treat demography as an exogenous factor. To influence the age structure by family allowances may not be false an idea but will last too long and its goal-attainment is doubtful. So the main interest concentrates on fund raising and on making economic measures a success. The point of departure is the current structure of social expenditures under the usual principle of distribution among beneficiaries and claimants - often called the „pay-as-you-go system“. The redistributive mechanisms does not hide that the elderly, although only 15 per cent of the population, are provided for up to 40 or 45 per cent of available social transfers. The proportion allocated to adults between 15 and 65 is not less important and may rise to 50% like in Italy (European Commission, 1995).

A social security or protection expenditure includes old-age and healthy family and unemployment allowances and others. In the European Union, in 1992, old age survival made

45 per cent and sickness 35 per cent; they account for 80 per cent of expenditures. ECE-countries show differences in their redistributive levels of the social expenditure although many of them share the same standard of living. The northern European countries lie at the top and UK at the bottom and we can state that there exist some forms of income besides of the official public benefits. This will underline the fact, that the levels of social expenditure and its increase will not automatically threaten the economic situation of a country. The lowest levels, however, are found in the post-communist transformation regimes in Eastern Europe; they are due, there, to a lack of substantial contributions and of monetary stability.

An other look at the levels of social protection expenditure offers a ratio social protection versus gross domestic product (GDP). The highest ranks in percentage of GDP have The Netherlands, Denmark and France between 30 and 35 per cent. Germany and Luxembourg hold the highest ranks in the GDP per inhabitant but lie behind as to the percentage of the GDP for social protection expenditure. A distance in these respects show the southern European countries but they have started to catch up central and northern European levels. (European Commission, 1995)

Societies must be aware that the existence of generous social security systems tends to diminish the labour force and the savings rate which, in turn, would reduce the potential size of the GDP. Private savings seems not to be necessary because a „re-electoral democracy“ promises a steady income during one's old age. But this will depress economic growth as less capital is available for investment. If we have a closer look on the wave of early retirement spilling over the European continent it is easy to see how a long-established social security encourages this attitude as income and benefits are assured. But more time spent in formation and shorter periods spent in work life sum up to a smaller contribution over lifetime to the GDP. For the time being, all economic regimes may it be liberal market economies or those based on central planning, feel threatened by too much generosity of a welfare state. As it undermines the individual's achievement motives and runs a moral hazard, it endangers its own presuppositions. (Weaver, 1986, van Praag, van Dalen, 1992)

As to the principle on which the financing of the social security and retirement income systems is based we have to ask what principle is more in keeping with the impending pressures exerted by ageing. There are two main principles; one of them is in practice throughout the modern world: the unfunded, distributing system or „pay-as-you-go“-system; the other is, more found in debates than in reality, based on the principle of capitalisation, i.e. on a stock piled up by constant contributions. The former principle became the most common and will, in all probability, prevail in the future. It has as its carrier the tax payers and the tax revenues of the state - and more generally spoken: the current activities gainfully organised in a national economy. So it has to bear the bite when demographic and economic deficiencies coincide:

„If a social security system is not funded, workers pay heavy taxes to support the benefits. Faced as well with other taxes on income to support various government programs, the worker perceives his diminished discretionary after-tax income as inadequate to support a family; hence more wives enter the labour force, resulting an lower birth rates than would otherwise occur. As the retirement age and birth rate fall, there are fewer workers to support older non-workers. As a result, taxes are usually increased. Benefit growth is rarely restrained.“ (Ricardo-Campbell, 1986)

This is both the situation and the prospect for the above-mentioned three ageing models of the Western sphere. For eastern European model the prospect may be even worse as, additionally

to the perplexing demographic situation, the economic transformation is far from being completed. A minimum of stability in economic, monetary and social affairs is required before an administration is capable of collecting taxes and distributing pensions. So the situation of the old-aged in these countries is precarious.

The other principle on whose grounds retirement incomes can be raised is capitalisation. Here a capital reserve is the source which is destined to bring over with interests to secure, on this way the elderly's existence. The capital reserve will be built up by the individual's savings during work life, and the gains coming from it will be consumed when the individual is old. This system is suitable for private pension insurance and is meant to be independent from demographic risks because each cohort pays for itself. To build up a capital reserve needs some conditions: firstly a constant income during the active years of a sufficient number of a birth cohort entering about six decades later in retirement, and secondly a long-lasting period of economic growth and prosperity in order to make the piling up of a capital reserve possible. The ideal base for a capitalisation system would occur when full-employment and high wage levels come together and social inequality is not considered as an upsetting fact.

Although the drawing of pensions from own capital stocks does not raise the moral hazard problem, the relying of a country's pension expenditures upon a capital reserve remains *Fata Morgana*. Because this requires successful occupational careers with no interruption and an egalitarian society to prevent it from becoming split into payroll tax-payers or depositors for a capital reserve and unemployed or even idle people whose savings must be allocated by public funds.

Regarding the world economic situation and outlook, the existence of a capital reserve would evoke some apprehensiveness: first of all, it deals with tremendous amounts. If Germany would pay its pensioners on grounds of a capital stock it had to be equivalent to the whole estate and property of the country. Such amounts have to be saved by investment in capital goods, enterprises, promising loan funds. So the capital cannot easily drawn back, on the contrary: it requires an investment strategy maximising profits which will not always be balanced with a policy of enduring stability and stock maintenance. It would be, by no means, off the track to transfer the capital into a country with the highest interest rates or to make it a treasury operating on global finance markets. But to make pensioners shareholder-value owners seeing their existence exposed to the ups and downs of an international economy is a nightmarish idea.

As the unfounded, pay-as-you-go system will, if controlled, get into troubles the decades ahead, it stands for reason that politicians and social scientists look out for a solution. Here, the first ideas suggest a mixture between these two principles; at least, there are hopes that a capital reserve funded by private savings and public shares would ease the old-age burden. So the states will gradually complement the unfounded system with a compulsory capital-formation. The first steps in this direction will be done for securing the old-age elevated income of the civil servants whose number has multiplied during the last decades in all modern European countries (van Praag, van Dalen, 1992)

In view of the severe objections to a full shift to a capital reserve system, the modern world will further stick to the pay-as-you-go system because welfare states need room for equalisation and levelling between heterogeneous risk groups. But the risks are manifold and most of them are age-related. They include labour disability, sickness and the general cost of health services, unemployment compensation, public social assistance to families and persons in need, early retirement and old-age income, resp. widow(ers) pensions. According to the

cross-national inquiries of the International Labour Office in Geneva on the cost of social security or what is comprehended by income-maintenance programs accounts since the 80s for half or more of total government spending in Germany, France, Austria, Sweden, Belgium and the Netherlands; for about 40 percent of spending in the United Kingdom, Canada, and Italy; slightly below of that level stand the United States.

In summing up, the social security spending amounts to one-fifth to one-quarter of the GDP in most of the Western ECE-countries. Widowhood, old-age pensions, disability insurance and Medicare account for about 50 per cent of annual government budgets (Weaver, 1986).

The EU-office EUROSTAT presented a very revealing projection for the 15 member states which is worth being reported here: In order to avert any impact of ageing upon a society's economy, about four measures could be taken into account: The way they had to be mobilised quantitatively to countervail ageing offers an impressive example of the extent to which ageing is able to transform the citizen's position and life in a welfare state from 1995 till 2045. (Calot, Chesnais, 1997)

- to raise the social security payroll tax would mean its doubling within the 50 years to come
- a possible lowering of the retirement incomes will need their reduction by half of the contemporary level on the average.
- the age of retirement would have to be postponed for about 10 years.
- to compensate the dwindling and ageing labour force it would be necessary to augment it, up to 2045, by three fourth of its initial scope of the mid 1990s.

All welfare states are entangled in finding out the sustainable mixture of these alternatives and are becoming aware that a mere shifting of quantitatives does not go beyond medicating symptoms.

### 4.3 Ways out of the social security trap

Population ageing is a trend whose reversion is inconceivable. The co-occurrence of low fertility, rising longevity beyond 70 and of well-grounded doubts that immigration and economic growth be a remedy at hand, make it justified to speak of a „trap“. This metaphor is also applied to expressions like „social security dilemma“ (Ricardo-Campbell, 1986) or „demographic dilemma“ (Schmid, 1993) with respect to the German situation. Both, the aged dependency ratio and the mean age of the population are crawling upward and so do the cost of social security and protection. Nowhere, they will be brought to a halt in the future. A reasoning on the ways out of social security traps and dilemmas has to keep in mind strategies of a possible rejuvenation on several levels of a society. It has to clear up

- what could be done to lessen the old-age burden from a demographical and political side
- what resources for care and custody of the elderly could be found in family systems
- what economic institutions must be mobilised in order to yield that surplus which can support the elderly's life and make an economy competitive for global constraints and chances.

To lessen ageing from the bottom requires a turn to a higher fertility level. What can be assured about fertility in post-industrial societies is that it is fluctuating. We do not have an effective concept for a substantial increase of fertility levels within highly industrialised settings. The northern Europeans keep them at higher levels partly by tradition, partly by social investing in family formation. The central European and southern European fertility levels show no signs of moving. The same is true for eastern European transformation countries. Family policy and allowances in ECE-countries aim at social justice and not at more offspring. A outspoken pro-natalistic policy seems to be postponed till a later time when the lack of births will be felt more pressing than today.

As to the ageing from the top efforts have to be made to keep older people longer in jobs and in good health. An attitude change is necessary: firms have to detect older workers as a source of experience, and workers themselves should hold their remaining in an active position as an appreciation. This would prolong working life, reduce early retirement and save Medicare for older people kept in motion and duties.

It is doubtful if the current situation of the western family will contribute to an exoneration from pressures on the social budget. The high divorce rate concerning a third or more of all marriages in the West makes many families an institution „in suspense“. Because of the small family size and female employment there will be no hands enough for a day-care of old parents. Day-care subsidies must be much higher than all other opportunities for women. So one can not rely upon a „family reserve“ for the elderly's care on a society's scale. Labour force and working life harbour some improvements of a social budget's situation. Besides of the above-mentioned remaining longer in jobs, there is an endeavour to increase labour force as a whole. Regardless of the extent of unemployment, female working activity is considered to augment the labour force and, therefore, the number of payroll tax contributors. But female employment is divided into a full-time and part-time employment. The former, however, justifies a retirement income according to female life expectancy. The initial payroll tax contributions, will be one generation later, transformed into claims. (Deferred annuity) Part-time jobs are not so much conducive to raise the social security budget but is more a flexible response to alleviate the „double burden“ of women who decided to work and to have children

simultaneously So a part-time female employment facilitates trade-offs between working life and fertility decisions. In other words, it helps to contain the further drop of the number of births and to bring motherhood in tune with other life goals of a women.

In the course of efforts to raise and to rejuvenate the labour force there is often pointed out to immigration as a solution. The question is threefold: what number of immigrants is needed to replenish the dwindling juvenile base of the occidental age-structure? What qualifications and personal criteria of immigrants are required for a highly modernised society? And from what parts in the world could come such numbers of qualified people regularly? The influx of qualified people in their active age which could prevent the aged dependency ratio from climbing would be tremendous and would go beyond integrative capacities. A certain amount of immigrations will take all western European ECE-countries into account, but only immigrants with high occupational credits and chances can raise the labour force. As often forgotten, immigrants undergo also an ageing process and cause deferred annuities for the host country's pay-as-you-go system budget. (Schmid, Chruszcz, 1994; Heigl, Mai, 1996)

The measures presented here and destined to defuse the time bomb of an unsolved social security trap do not leave us satisfied and allayed. The much more reason we have to criticise mere compensatory mechanisms for coping with annually augmented expenditures: a portion of the retirement incomes and benefits become taxable, dynamic adjustments can be delayed or benefits generally trimmed, the social security payroll tax rates are increased, the earnings of civil servants are curbed and so on. The trap or dilemma is obvious when governments resort to zero-sum-games only to ensure the pension payments. (Schmid, 1996)

Measures which could complete the unsatisfactory and short-term solutions to the long-term problems of a social security system must hit the centre of post-industrial societies, i.e. its knowledge base. As the GDP is generated up to 60 per cent by information-elaborating processes, communication and innovative knowledge, the solution of social security problems can only come from a higher productivity and from investment in its coefficients. The living base of modern productivity and competitiveness in which demography, occupational formation and economy flow together, is human capital. It is the local precondition for the global success of intelligent products and for creativity as the renewal of own carrying capacities is concerned. So the highly qualified human capital assuring productivity and economic success will show the way out of societal strains and shortcomings. Investing in young people to form a resource base means a qualitative rejuvenation which can provide for the needs of a quantitatively ageing society. Zero-sum-games cut in expenditures for the young because the elderly have become the greater electoral power and must be cherished will provoke the so-called „war between generations“. Economic success under post-industrial conditions will make it unnecessary. With the pre-eminence of the formation of the young and the qualification of the younger age-groups in the labour force the problem of a constant low fertility gains new importance. Demographic implosion in modern societies can diminish the younger birth cohorts and make them drop below the quantitative minimum which is necessary to maintain a qualitative human capital. Pronatalism does not find much support in these days but an attitude change could occur in this respect in the next century. (Ter Meulen, 1994; Schmid, 1993, 1996).

### ***Concluding Remarks***

The early writing of Robert Malthus and the early reports to the Club of Rome have shown

that pessimism is not as bad as all that, because it provoked a re-orientation of thoughts and strivings and a re-direction of policy. It is legitimate that demography functions as an early warning system for securing a brighter future. Population ageing is mastered best by young institutions which have not lost the mental capacity to perceive material and financial deficiencies and are willing to react. Institutions will remain young when young people find good prospects and feel self-confidence entering working life.

Ageing societies have no alternative to action, but the manipulation of quantities is not the promising path. There is needed an action which mobilises knowledge, productivity and wisdom, also from the elderly's side. Ageing means an on-going victory over death which also the coming generations have a right to enjoy.

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