

Population evolution in Romania during 1948-1998

Years	Population size (thousand persons)	Period	Annual average rate of increase (%)	Annual average natural increase (thousand persons)
Census 1948	15,873	1948-1956	1.2	202
Census 1956	17,489	1956-1966	0.9	165
1.07.1966	19,141	1966-1977	1.1	229
20.06.1969	20,000	1977-1990	0.5	119
1.07.1977	21,658	1990-1992	-0.9	-209
3.12.1987	23,000	1992-1998	-0.2	-48
1.07.1990	23,207	1998-1990	0.9	+175
1.07.1992	22,789	1990-1998	-0.4	-88
1.07.1998	22,503			

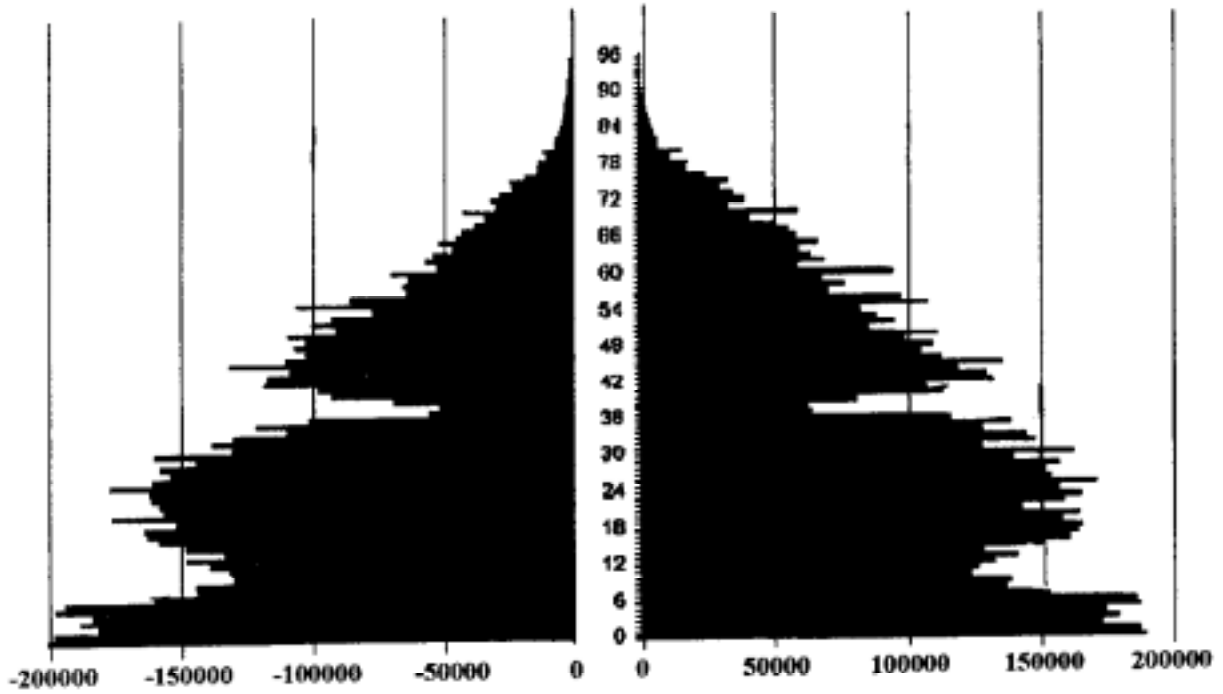
Source: - "Romanian Demographic Yearbook- 1996", NISES (National Institute for Statistics and Economic Studies), Bucharest, 1996 and *Population size and structure on July 1st, 1998 Papers*, NISES., Bucharest, 1997

Population age pyramid in Romania

21 02 1956

Male

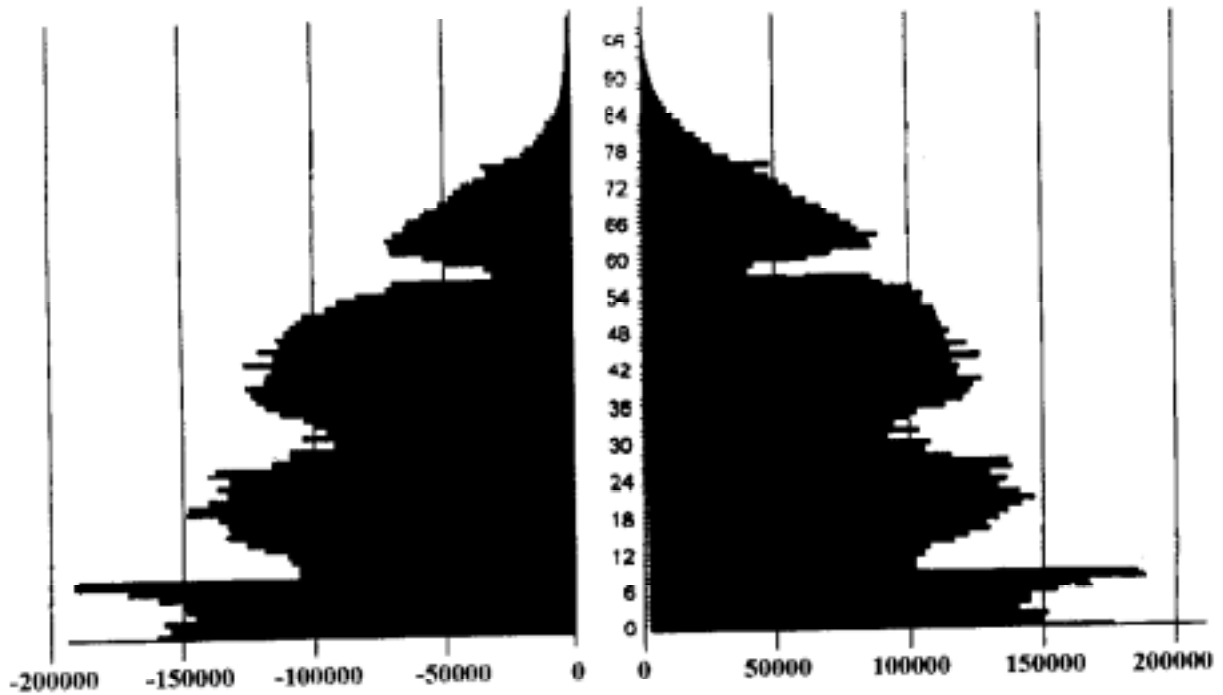
Female



05 01 1977

Male

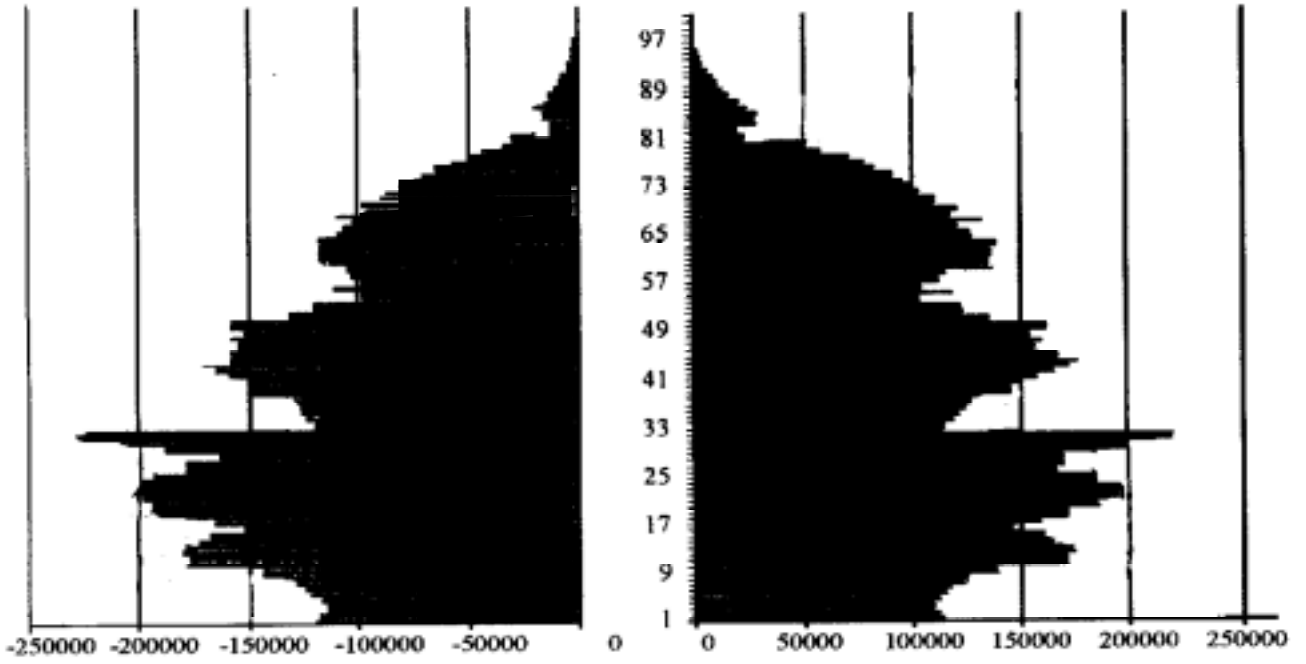
Female



01 01 1999

Male

Female



Source: based on NISES data

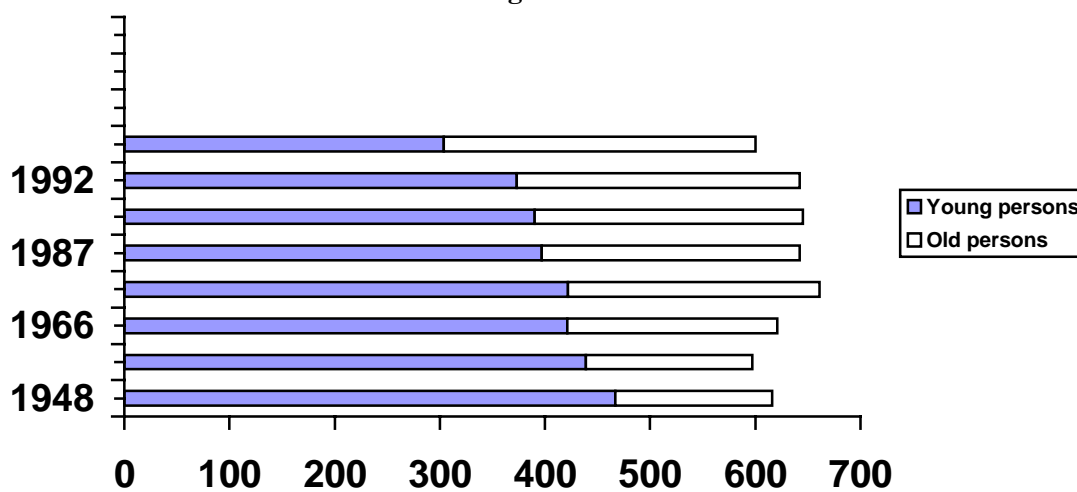
**Population structure by great age groups,
average age and the dependency ratio, during 1948-1999**

Indicator/Years	1948	1956	1966	1977	1987	1990	1992	1999*
Total population	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0-14 years	28.9	27.5	26.0	25.4	24.2	23.6	22.7	19.0
15-59 years	61.9	62.6	61.7	60.2	60.9	60.8	60.9	62.5
15-29 years	26.5	27.1	23.1	23.5	22.4	22.6	22.9	24.5
30-44 years	20.5	19.2	23.3	19.9	20.2	21.0	21.0	20.7
45-59 years	14.9	16.3	15.3	16.8	18.2	17.2	17.0	17.3
60 years and over	9.2	9.9	12.3	14.4	14.9	15.6	16.4	18.5
65 years and over	5.6	6.4	7.9	9.9	9.7	10.3	11.0	13.0
Average age	29.8	30.0	32.4	33.0	34.5	34.9	35.5	36.8
Median age	25.2	25.4	30.1	30.1	30.3	30.4	30.4	34.3
Depend. ratio per1000), total , of which	616	597	621	661	642	645	642	600
Young persons (0-14 years)	467	439	421	422	397	390	373	304
Old persons (60 years and over)	149	158	200	239	245	255	269	296

* **Note:** Data refer to January 1st only for 1999; for the rest, the reference moment is July 1st

Source: Information taken-over or computed from the *Romanian Demographic Yearbook*, 1994 and 1996 editions of NISES, Paper on *Population size and structure in Romania, on 1.01.1999*, NISES, Bucharest 1999, and „*Demographic analyses. Romania's demographic situation during 1990-1998*”, NISES, Bucharest 1999.

Evolution of dependency ratio and of its componenets during 1948-1999



Source: Made-up on information from: the *Romanian Demographic Yearbook*, 1994 and 1996 editions of NISES, Paper on *Romania's population size and structure on 1.01.1999*, Bucharest, 1999.

Number, structure and annual average rate of evolution for population of 60 years and over, during 1956-1999
(both genders)

Years/age gr.	1956	1966	1977	1989	1992	01.01.1999
<i>Size (persons)</i>						
60-74 ys.	1447788	1897426	2384784	2626286	2819904	3214499
75-84 ys. -	253129	396958	547154	809114	778826	755729
85 ys. and over	33798	45731	78086	120034	140834	179854
<i>Structure (%)</i>						
60-74 ys.	8.28	9.93	11.06	11.34	12.36	14.29
75-84 ys. -	1.45	2.08	2.54	3.49	3.41	3.36
85 ys. and over	0.19	0.24	0.36	0.52	0.62	0.80
<i>Annual average rate of change (%)</i>						
	$C_{66/56}$	$C_{77/66}$	$C_{89/77}$	$C_{92/89}$	$C_{99/92}$	
60-74 ys.	2.74	2.10	0.81	2.40	1.89	
75-84 ys. -	4.60	2.96	3.31	-1.26	-0.43	
85 ys. and over	3.07	4.98	3.65	5.47	3.56	

Source: Made-up on Appendix no.5 basis.

Evolution of population structure by age groups of 60 years and over, during 1956-1999
(in %)

Years/ age gr.	C 1956		C 1966		C 1977		C 1.07.1989		C 1992		1.01.1999	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
60-64 ys.	3.16	3.92	4.30	4.57	3.78	4.56	4.97	5.45	5.18	5.62	5.16	5.83
65-69 ys.	2.37	3.10	2.99	3.57	3.69	4.29	3.56	4.58	4.10	4.91	4.47	5.27
70-74 ys.	1.71	2.24	1.84	2.56	2.63	3.15	1.68	2.42	2.00	2.89	3.42	4.39
75-79 ys.	0.84	1.22	1.11	1.66	1.50	2.03	1.90	2.73	1.65	2.50	1.92	2.98
80-84 ys.	0.33	0.49	0.52	0.84	0.59	0.95	0.96	1.39	1.06	1.60	0.65	1.14
85 ys. +	0.14	0.25	0.17	0.31	0.26	0.47	0.42	0.62	0.46	0.77	0.59	1.00

Source: Calculations based on information from the *Romanian Demographic Yearbook – 1996*, NISES, Bucharest, 1996; *Romanian Statistical Yearbook – 1990*, NISES, Bucharest, 1990; Paper on *Romania's population size and structure on January 1st, 1999*, NISES, Bucharest, 1999.

Activity rates by gender and age in 1977 and 1992 Census and in Amigo surveys, 1996, 1997 and 1998
(in %)

Age group	Both genders					Male					Female				
	1977	1992	1996	1997	1998	1977	1992	1996	1997	1998	1977	1992	1996	1997	1998
14-19 ys.	29.8	30.8	30.7	28.4	24.5	32.0	33.3	35.2	31.6	30.2	27.6	28.1	26.0	25.1	22.2
20-24 ys.	81.4	80.9	70.1	68.1	62.2	87.1	88.6	78.2	76.4	73.7	75.6	73.0	61.6	59.2	56.1
25-29 ys.	90.1	87.6	84.2	83.6	80.0	97.0	95.8	91.6	90.7	89.6	83.1	79.1	76.6	76.3	73.7
30-34 ys.	90.7	89.5	87.9	86.9	86.4	98.0	96.7	94.5	94.3	92.4	83.4	82.2	81.0	79.3	78.2
35-39 ys.	90.4	89.7	88.9	88.7	85.7	97.2	96.5	94.8	94.9	93.6	83.6	82.8	82.9	82.5	80.8
40-44 ys.	88.8	88.2	87.6	88.0	85.7	95.9	96.1	94.0	93.7	93.0	81.7	80.3	81.3	82.3	80.9
45-49 ys.	85.7	83.2	84.4	84.7	82.5	93.7	92.8	91.6	92.0	91.0	77.7	73.9	77.3	77.6	75.7
50-54 ys.	78.9	65.5	75.1	75.2	72.4	88.8	78.9	83.1	83.1	81.7	69.7	52.9	67.6	67.7	64.7
55-59 ys.	64.1	38.8	56.1	57.7	56.8	78.6	46.9	67.9	68.6	67.4	52.4	31.3	45.6	48.0	47.5
60-64 ys.	33.9	16.7	44.2	46.9	45.7	44.6	21.9	50.8	54.1	52.9	25.3	12.1	38.5	40.8	39.5
65 ys. +	14.6	5.9	32.5	33.8	34.8	17.8	5.6	38.4	39.6	40.7	12.2	6.1	28.3	29.6	30.5
Total	50.1	45.9	51.8	52.5	51.4	55.2	51.6	57.5	57.8	57.1	45.1	40.4	46.4	46.9	46.0

Source: Author's data and calculations take-overs upon information by *Romanian Statistical Yearbook – 1990*, NISES, 1990; *Romanian Statistical Yearbook – 1997*, NISES, Bucharest 1998; *Workforce balance on 1.01.1998*, NISES, Bucharest, 1998; *Survey on household workforce (AMIGO) – 1998*, Bucharest, 1999.

Activity rates by age groups in some European developed or in economic transition countries

Age group	Romania	Czech Rep.	Poland	Slovenia	Hungary	Spain	Portugal	France	Germany	Italy
14-19 ys.	30.7	25.9	13.3	9.3	15.3	24.3	23.5	7.4	30.5	19.8
20-24 ys.	70.1	71.9	64.9	68.2	61.3	60	63.5	53.4	72.6	52.7
25-29 ys.	84.2	79.4	82.4	91.2	72.3	81.3	85.6	86.8	79.9	71
30-34 ys.	87.9	87.4	86.2	94.7	78.2	79.5	87.3	88.7	84.1	77.6
35-39 ys.	88.9	92.1	88.1	93	83.1	78.3	87.1	89.5	85.5	78
40-44 ys.	87.6	94.1	87.5	92.1	84.1	74.8	86.2	89.1	86.7	76.6
45-49 ys.	84.4	92.5	82.1	88.1	79.5	69.1	80.9	88	84.7	71
50-54 ys.	75.1	85.3	69.7	64.9	62.3	61.7	71	82.1	79	57.8
55-59 ys.	56.1	55.3	44.4	30.7	29.2	48.2	57.3	61	62.3	39.6
60-64 ys.	44.2	22	25.6	16.3	7.4	27.9	39.7	15.8	19.8	18.7
65 ys. and +	32.5	5.4	11.1	6.3	3.0	1.8	15.6	1.4	2.7	3.5
Total	51.8	50.4	44.2	47.5	39.9	40.8	48.8	45.3	48.2	40.3

Source: "Annuaire des statistiques du travail – 1997", BIT,UN , New York, Genève, 1997.

Main demoeconomic indicators for 1966-1998 period
(in thousand of persons excepting contrary specifications)

Indicator/Year	C 1966	C 1977	1989*	C 1992	1995*	1996*	1997*	1998*
Total population	19103	21560	23161	22810	22681	22608	22546	22526
Working age population	12625	13870	15278	15118	15311	15339	15338	15318
Civil active population	10362	10794	10946	10466	10491	10037	9929	9904
Employment	10362	10794	10946	9602	9493	9379	9159	9023
Employment rate of active civil population(%)	100	100	100	91.7	90.5	93.4	90.9	92.5
Employment rate of total population(%)	54.2	50.1	47.3	42.1	41.9	41.5	40.6	40.1
Registered unemployed number	0	0	0	864	998	658	770	881
Economic dependency ratio (1) (‰)	844	997	1116	1179	1162	1252	1271	1274
Economic dependency ratio (2) (‰)	844	997	1116	1376	1389	1410	1462	1497

Note: C –census; data taken-over from the workforce balance, made-up by NISES; Economic dependency ratio (1) = inactive population/active population (‰); Economic dependency ratio (2) = employed population/unemployed population (‰). *Proportions calculated on the above-mentioned information basis are not concordant with the ones resulting from Amigo survey (we especially refer to the activity and employment rates which usually are higher by approx. 8 percentage points).*

Source: Information taken-over or obtained on data basis from *Romanian Demographic Yearbook– 1996; Romanian Statistical Yearbook– 1997*, NISES, Bucharest, 1997.

Employment structure by gender, area and age groups, during 1996-1998

Age/years	Total			15-24 years			25-34 years			35-49 years			50-64 years			65 years and over		
	1996	1997	1998	1996	1997	1998	1996	1997	1998	1996	1997	1998	1996	1997	1998	1996	1997	1998
Total	100.0	100.0	100.0	13.8	13.6	13.0	23.3	23.3	24.1	35.6	35.4	35.1	19.1	19.1	18.7	8.2	8.6	9.2
Male	54.7	54.3	54.6	15.0	14.7	14.1	23.6	23.6	24.4	34.9	34.8	34.6	19.1	19.1	18.7	7.4	7.8	8.3
Female	45.3	45.7	45.4	12.4	12.2	11.7	22.9	22.9	23.7	36.4	36.1	35.7	19.1	19.2	18.7	9.2	9.6	10.3
Urban	49.3	48.7	48.6	11.1	10.7	10.6	28.7	28.5	29.0	46.7	47.1	47.2	12.4	12.6	12.3	1.1	1.1	1.1
Rural	50.7	51.3	51.4	16.5	16.2	15.2	18.1	18.4	19.5	24.8	24.3	23.9	25.5	25.4	24.7	15.1	15.7	16.7

Source: Made-up on information basis of Amigo survey –annual data for 1996, 1997 and 1998, NISES, Bucharest, 1997, 1998 and 1999.

Employment structure by branches and age groups

%

Branch/Age group/Year	15-24 years			25-34 years			35-49 years			50-64 years			65 years and over		
	1992	1996	1998	1992	1996	1998	1992	1996	1998	1992	1996	1998	1992	1996	1998
Agriculture and sylviculture	15.7	14.0	13.4	13.5	12.9	14.0	30.4	20.7	20.0	34.9	31.4	29.9	5.5	21.0	22.6
Industry	22.5	10.6	9.6	30.3	31.6	31.2	38.6	47.9	49.9	8.5	9.6	9.2	0.1	0.3	0.1
Construction	18.0	15.8	14.8	25.5	27.3	29.6	43.1	43.1	43.0	13.4	13.9	12.7	0.0	0.0	0.0
Trade	17.6	19.2	19.9	27.0	32.8	34.3	44.4	38.1	37.7	11.0	9.5	7.8	0.0	0.4	0.3
Hotels and restaurants	24.1	21.6	17.6	27.0	31.1	33.1	40.2	40.5	38.0	8.6	6.8	11.3	0.0	0.0	0.0
Transport and telecommunications	17.2	8.9	7.0	24.9	31.6	33.1	44.9	46.5	48.2	13.0	13.0	11.7	0.0	0.0	0.0
Finance, banking, insurance	19.3	8.0	4.9	28.1	36.8	35.8	40.4	43.7	44.4	12.3	11.5	14.8	0.0	0.0	0.0
Real estate and other services	10.0	9.0	8.4	30.0	30.9	33.8	50.0	46.6	44.8	10.0	13.5	13.0	0.0	0.0	0.0
Public administration and social insurance	33.6	31.7	30.0	23.0	27.1	26.4	33.6	33.1	34.8	9.7	8.1	8.7	0.0	0.0	0.0
Education	11.5	8.8	8.2	20.8	19.0	23.4	51.5	49.3	44.9	16.3	22.5	23.6	0.0	0.5	0.0
Health and social assistance	11.8	11.3	6.9	19.6	23.4	27.2	52.3	47.6	47.6	15.9	17.7	18.3	0.3	0.0	0.0
Other branches	13.1	14.2	13.3	26.3	27.1	30.3	46.8	41.7	39.4	12.5	14.7	15.6	1.3	2.3	1.4

Source: Made-up on information basis from Population and dwelling census of January 7th, 1992, NISES, Bucharest, 1994; Amigo survey for 1996 and 1998, NISES, Bucharest, 1997 and 1999.

ILO unemployed structure , by training level and age groups, and as percentage of total, in 1998

Training level	15-24 ys.	25-34 ys.	35-49 ys.	50 ys.+	Percentage to total level	Percentage to total levels
TOTAL	43.2	26.1	26.5	4.2	100.0	100.0
Higher education	25.0	45.8	20.8	7.3	100.0	3.3
Post-high-school and foremen education	25.0	25.0	35.0	10.0	100.0	2.7
High-school education	51.8	27.1	19.1	2.4	100.0	34.3
Vocational education	36.7	23.6	35.7	3.5	100.0	27.2
High-school/Ist stage	37.2	46.2	16.7	0.9	100.0	10.7
Secondary education	46.0	14.5	31.5	8.1	100.0	16.9
Primary school without graduation	44.4	16.7	30.6	10.0	100.0	4.9
MALE	42.2	25.9	26.1	5.9	100.0	100.0
Higher education	22.2	44.4	22.2	11.1	100.0	2.2
Post-high-school and foremen education	18.2	18.2	45.5	18.2	100.0	2.7
High-school education	50.4	30.4	16.5	2.6	100.0	28.0
Vocational education	35.8	23.4	35.8	5.1	100.0	33.4
High-school/Ist stage	39.3	44.9	14.0	1.9	100.0	8.7
Secondary education	49.4	15.6	26.0	9.1	100.0	18.8
Primary school without graduation	39.5	19.7	27.6	13.2	100.0	6.2
FEMALE	44.1	26.7	27.0	2.2	100.0	100.0
Higher education	27.3	54.5	18.2	0.0	100.0	3.4
Post-high-school and foremen education	33.3	33.3	22.2	11.1	100.0	2.8
High-school education	52.9	23.5	22.1	1.5	100.0	42.2
Vocational education	38.7	24.2	35.5	1.6	100.0	19.3
High-school/Ist stage	35.7	45.2	19.0	0.0	100.0	13.0
Secondary education	39.6	12.5	41.7	6.3	100.0	14.9
Primary school without graduation	42.9	35.7	21.4	0.0	100.0	4.3

Source: Made-up on *Amigo survey – 1998*, NISES, Bucharest, 1999.

Discouraged persons in finding a job, by gender, area and age group

Desouraged persons (in thousand pers.)	Total	Male	Female	Urban	Rural
	266	115	151	140	126
	<i>In % to total</i>				
15-24 ys.	40.8	39.8	41.5	33.2	49,1
25-34 ys.	26.8	26.9	26.6	25.7	28,0
34-39 ys.	26.2	25.9	26.6	33.9	17,8
50 ys. and over	6.2	7.4	5.3	7.2	5,1

Source: *Amigo survey – 1998*, NISES, Bucharest, 1999.

DEMOGRAPHIC DEVELOPMENTS

Population dynamics up to 2000

– thousand persons -

Variant	1999	2010	2020	Change during 2020-1999	
				Absolute	Relative %
Constant	22,458.0	21,811.9	20,627.3	-1,830.7	-8.2
Average	22,458.0	21,770.7	20,494.9	-1,963.1	-8.7
Optimistic	22,458.0	22,090.1	21,528.8	- 929.8	-4,.1
Pessimistic	22,458.0	21,706.8	20,291.8	-2,166.2	-9.6

Note: According to all projection variants population will register a decrease between 0.9 million (optimistic variant) and 2.2 million persons (pessimistic variant).

The persistence of demographic conditions of 1999 might determine a decrease in total population by 1.8 million inhabitants.

Since 1990, country's population has registered a decrease by a negative annual average rate of 0.15%, decrease due to:

- the negative natural increase;
- the negative balance of external migration
-

Romania's population by gender, during 1999-2020 – thousand persons

1999			2010			2020		
Total	Male	Female	Total	Male	Female	Total	Male	Female
22,458.0	10,984.5	11,473.5	21,811.9	10,635.7	11,176.2	20,627.3	10,018.8	10,608.5

Romania's population evolution, by great age groups, during 1999-2020

	1999		2010		2020	
	Thousand persons	Share %	Thousand persons	Share %	Thousand persons	Share %
Total	22,458.0	100.0	21,811.9	100.0	20,627.3	100.0
0-14 ys.	4,215.0	18.8	3,325.3	15.4	2,932.6	14.2
15-64 ys.	15,315.2	68.2	15,399.4	70.6	14,468.5	70.1
65 ys.+	2,927.8	13.0	3,060.2	14.0	3,226.2	15.7

Young population evolution (0-14 years), by gender, during 1999-2020 – thousand persons

1999			2010			2020		
Total	Male	Female	Total	Male	Female	Total	Male	Female
4,215.0	2,155.2	2,059.8	3,352.3	1,720.9	1,631.4	2,932.6	1,505.4	1,427.3

Note: Due to maintaining the fertility rates under the level of generation replacement, a sharp decrease in young population will be registered, its percentage in total population lowering from 18.8% in 1999 to 14.2% in 2020.

Adult population evolution (15-64 years), by gender, during 1999-2020 – thousand persons

1999			2010			2020		
Total	Male	Female	Total	Male	Female	Total	Male	Female
15,315.2	7,608.5	7,706.7	15,399.4	7,658.8	7,7414.4	14,468.5	7,190.2	7,278.3

Note: In the context of young people reducing number, the adult population share in total population will score an increase from 68.2% in 1999 to 70.6% in 2010, starting to decrease afterwards, coming to 70.1% in 2020.

Old population evolution (65years and over), by gender, during 1999-2020 – thousand persons

1999			2010			2020		
Total	Male	Female	Total	Male	Female	Total	Male	Female
2,927.8	1,220.8	1,707.0	3,060.2	1,256.8	1,803.4	3,226.2	1,323.3	1,902.9

Note: Old population share in total population will increase from 13.0% in 1999 to 15.7% in 2020. It will be a sharp increase of population over 80 years of age, its share in total population reaching from 13% in 1999 to 20.2% in 2020.

Dependency ratio

	1999	2010	2020	Change 2020/1999
- (young population)/(adult population)	28%	22%	20%	-26%
- (old population)/(adult population)	19%	20%	22%	17%
- (young population+old population)/(adult population)	47%	42%	43%	-9%
- (adult population)/(old population)	523%	503%	448%	-14%

Female population evolution of fertility age, during 1999 – 2020 – thousand persons

	1999	2010	2020	Change 2020/1999	
				Absolute (thous.)	%
Women of fertility age	5,817.1	5,598.6	5,135.8	-681.3	-11.7
-of which: 20-29 years	1,850.9	1,646.5	1,153.8	-697.1	-37.7

Fertility conditions index

1990	1999
1.83	1.30 (children per woman)

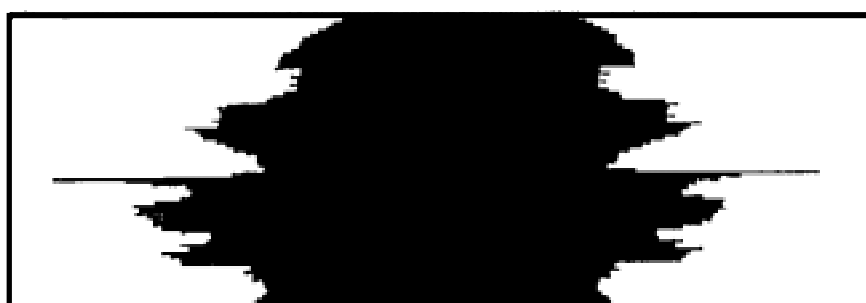
Life expectancy at birth in 1999 - years

Total	Men	Women
69.74	66.05	73.67

Source: Processed on NISES prognoses basis

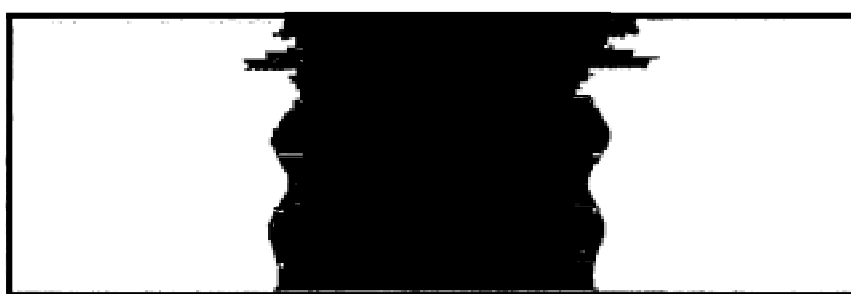
Population pyramids in 2000 and 2050

2000



289 189 89 11 111 211

2050



291 191 91 9 109 209

Notes:

1. The tendency registered during 1990-2000 will continue also during the following period;
2. For both genders, up to 2020, the most significant reduction will be registered by the age groups of 0-14 years old;
3. Almost up to 2010, the adult population (15-64 years) will show a slight increase in size, and begins to decrease afterwards on. This developments are explained mainly by entering of relatively numerous generations, born during the ,80s, the segment of adult population up to 2010, and then, between 2010 and 2020 of generations smaller in size born during the ,90s, characterized by a low natality rate.
4. old population share (65 +) will increase from 13% to 15.7%.

The potential effects of pension reform

- Values in % of the respective year GDP -

	2001	2002	2003	2004	2005	2010	2015	2020	2025	2030	2040	2050	2100
PUBLIC PENSIONS SCHEME (PAYG)													
Contributions	5.3	5.7	6.0	6.1	6.2	6.5	6.9	7.0	7.0	7.0	7.1	7.0	7.3
Pension commitments	6.7	6.7	6.7	6.6	6.5	6.5	6.6	7.0	7.2	7.6	8.6	8.7	7.5
Deficit	(1.4)	(1.0)	(0.8)	(0.5)	(0.3)	0.0	0.3	0.1	(0.2)	(0.6)	(1.5)	(1.7)	(0.2)
PUBLIC PENSIONS SCHEME + CAPITALIZATION PENSION SCHEME													
Deficit PAYG after introducing Pillar 2			(2.5)	(2.1)	(1.9)	(1.6)	(1.3)	(1.3)	(1.1)	(1.0)	(1.1)	(0.8)	1.0
Deficit PAYG after introducing Pillar 2					(2.1)	(2.0)	(1.8)	(1.6)	(1.4)	(1.2)	(1.1)	(1.1)	1.0
INFLUENCE OF INTRODUCING CAPITALIZATION PENSION SCHEME (PILLAR 2)													
Additional deficit			(1.7)	(1.6)	(1.6)	(1.6)	(1.6)	(1.3)	(0.9)	(0.4)	0.3	0.8	1.2
Additional deficit					(1.8)	(2.0)	(2.1)	(1.7)	(1.2)	(0.6)	0.4	0.6	1.2
Capitalization of Pillar 2			1.8	3.7	5.7	16.4	28.1	39.3	49.0	56.7	64.2	61.7	12.3

Source: WB estimates.