

PO4-77

**Age-Structural Transition in Iran and its Short and
Long-Term Consequences, 2000-2050**

By

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*Poster Presented at the
XXV International Population Conference (IUSSP)
Tours, France 18-23 July 2005*

Aims of the Presentation:

To Review Changes in the Size and Age Structure of Iranian Population during the 20th Century;

To Explore Possible Changes in the Age Structure of Iranian Population during the First Half of the 21st Century;

To Consider Policy Implications of the Projected Changes.

Sources of Data:

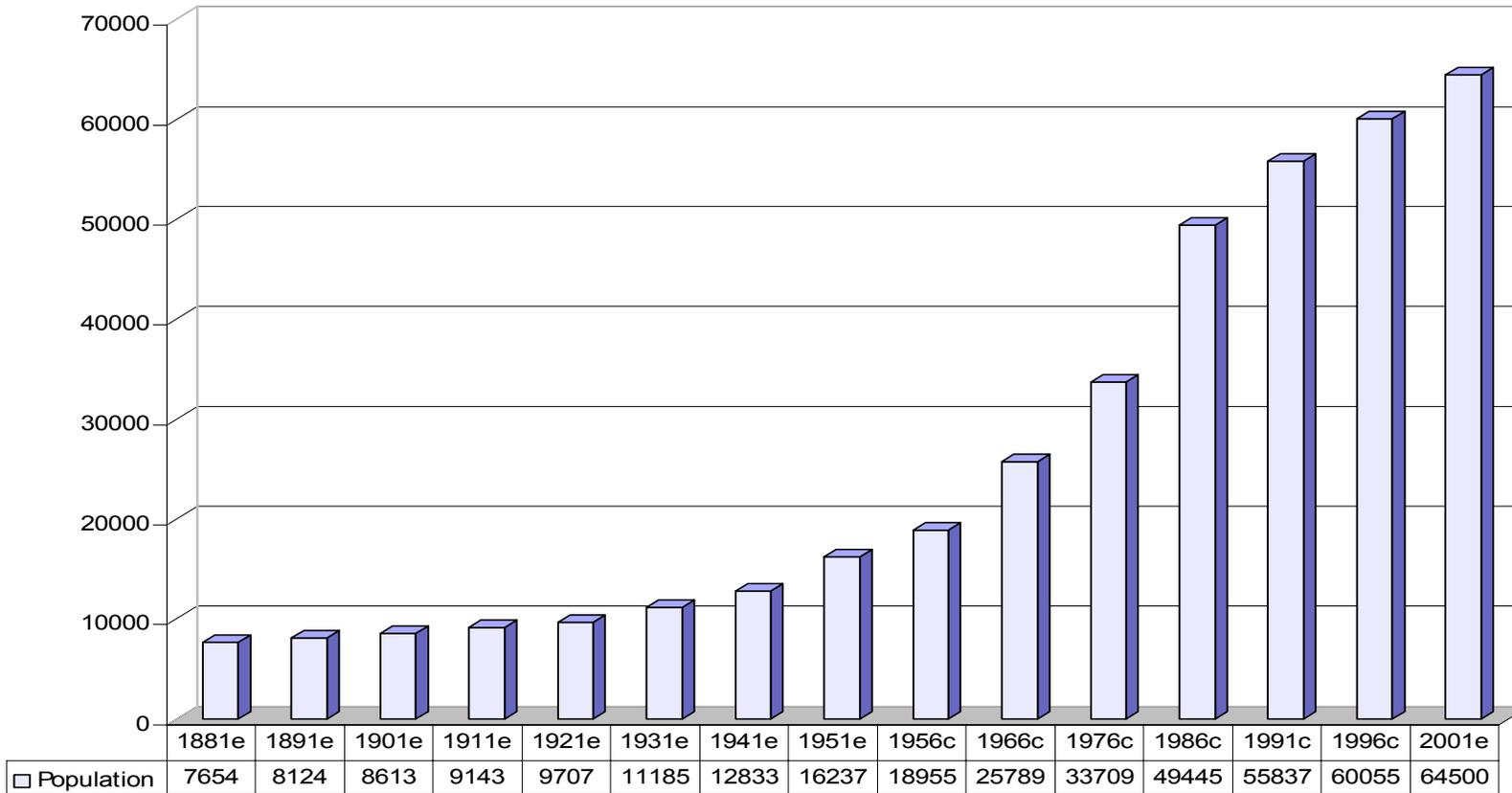
- Censuses and surveys conducted by the Statistical Centre of Iran (SCI), 1956-1996;
- Projections for the period 2000-2050, conducted by UN Population Division and Population Studies and Research Center (PSRC) of Iran, 2003.

Historical Background:

1. Before the Islamic Revolution:

- Very Low Rate of Growth During the first Half of the 20th Century, Taking over fifty years for the Size of Population to double (from under 10 million in 1900 to 19 million in 1956);
- Rapid Growth During the Second Half of the 20th Century Resulting in the annual growth rate of 3.1 percent between 1956-1966 (A doubling time of 22.25 years);
- Adoption of a Birth Control Policy and the Establishment of a Family Planning Program with Specific Demographic Targets in 1967;
- Modest Success of the FP Program during the Decade 1967-1977 as Reflected in a Contraceptive Prevalence Rate of 36% and Decline of population Growth Rate from 3.1 to 2.9 percent by 1976.

Figure 1. Estimated (E, 1881-1951 & 2001) and Enumerated (C, 1956-1996) Population of Iran (in 1000s), 1881-2001



2. Islamic Revolution and Policy Change:

- Promotion of Early Marriage and Family formation as Basic Islamic Values;
- Suspension of the FP Program;
- Provision of Tangible Incentives for Marriage and Fertility by the War Time Rationing System (1981-1987);
- Leading to Drastic Rise in Fertility and Population Growth Rates between 1976- 1986.

3. Findings of the 1986 Census:

- Population Size of 49.4 million (as compared with 33.7 in 1976 and 44.15 to 45.51 million in 1985 according to UN Projections (1975));
- Intercensal Growth Rate of 3.9% per annum (as compared with 2.9% in 1976);
- Estimated TFR of 7 children per women (as compared with 6.6 for 1976);

4. Policy Reversal:

- Adoption of Population Policy and Revival of the Family Planning Program (1989) as Part of the Post-war Reconstruction Plan Launched in 1989;
- Surprising Success of the Revived Family Planning Program in terms of both Raising Contraceptive Prevalence Rate and drastically reducing fertility and population Growth Rates:
 - By 1991 Population Growth Rate had declined to 2.4%;
 - By 1996 Over 70% of eligible couples were Using Contraceptives, Mostly Modern Methods;
 - By 1996 TFR had dropped to about 3 and the population was growing at the rate of 1.5% per year.
- A Nationally Representative DHS-Type Survey Conducted in 2000 has Revealed:
 - CPR of 74%;
 - Almost Replacement Level Fertility (TFR=2.01);
 - Below Replacement Fertility Rates in Urban Areas of Several Provinces as well as Rural Areas of Some.

5 .Consequences of Demographic Changes Since 1976 on Age Structure and Future Growth of Population :

1. The large cohort born between 1976-1991 led to predominance of children and youth during last two decades of the 20th Century;
2. It Resulted in the Rise of Child Dependency Ratio and demanded large investments in meeting health and educational needs of younger age groups;
3. It resulted in a heightened demand for secondary and higher education in late 1990s;
4. It created a large base of potentially fertile couples needing family planning and other reproductive health services;
5. It contributed heavily to the problem of unemployment in late 1990s and early 2000;
6. It affected the social and political atmosphere of Iran and partly helped the emergence of reform movement represented by Khatami.

Figure 2. Changes in Age Pyramids of Iranian Population, 1976-1996

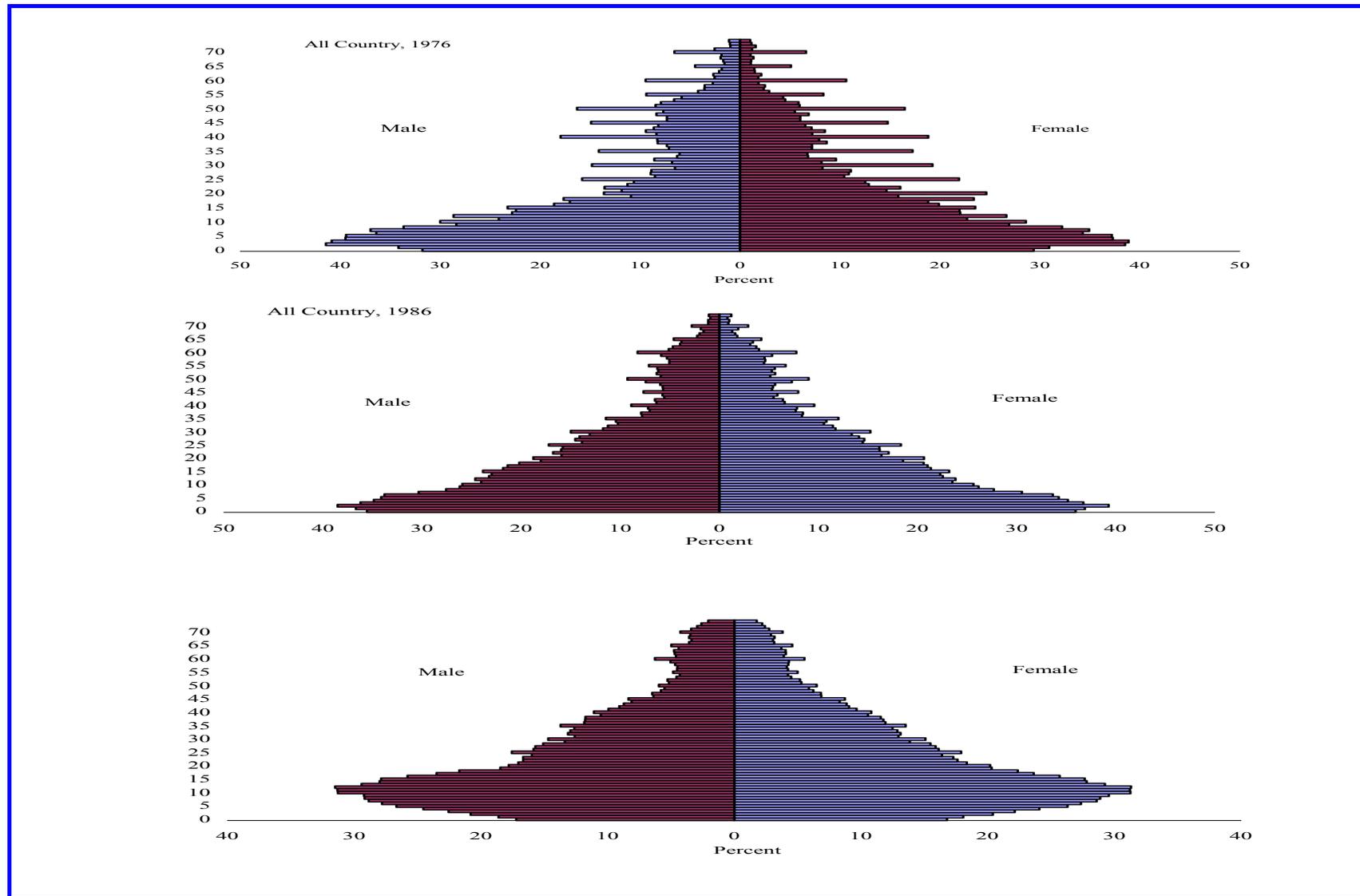
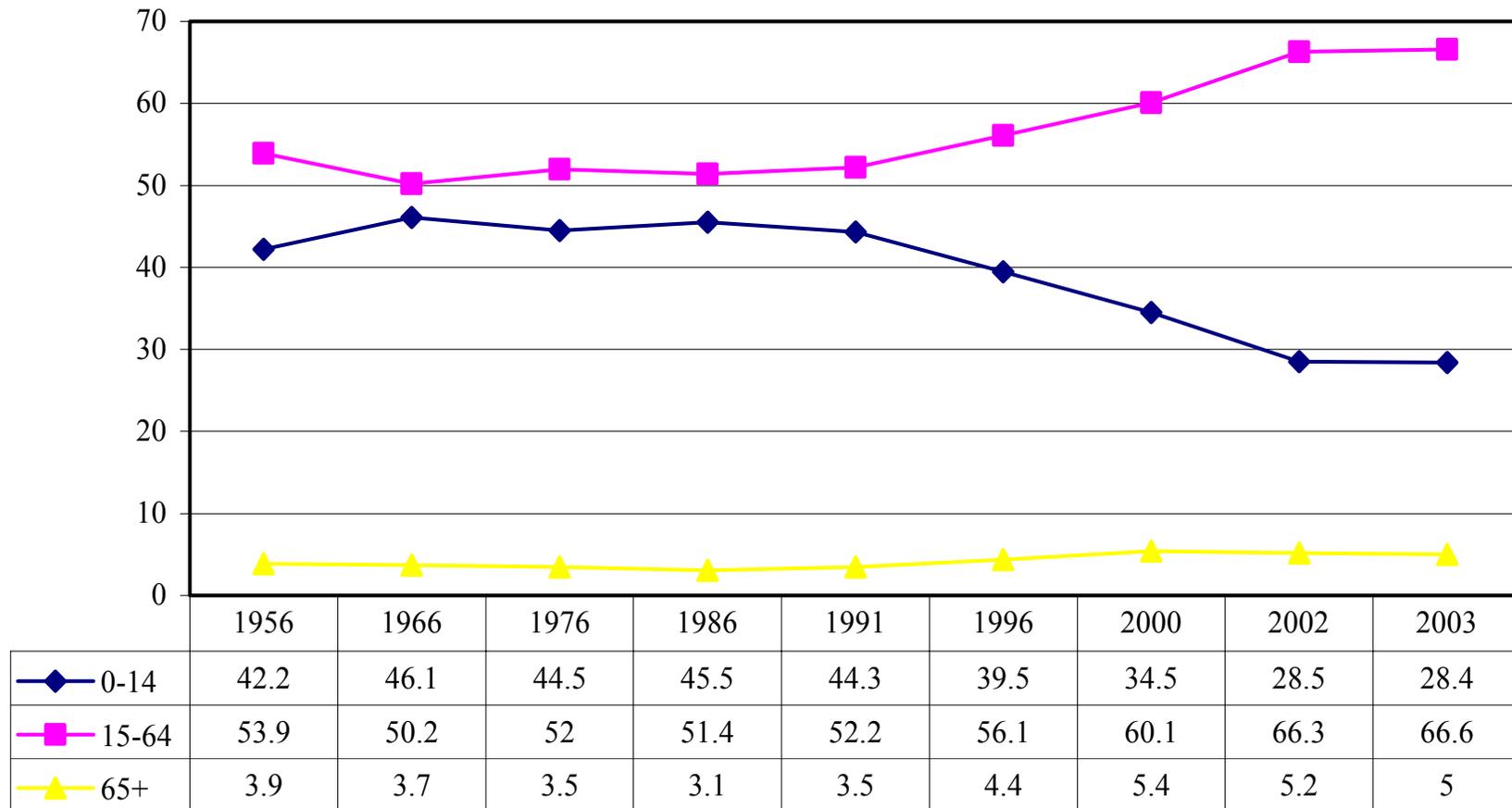


Figure 3. Share (%) of Three Main Age Groups of Total Population, 1956-2003



**Figure 4 . Changes in Crude Birth Rates of Iranian Population,
1976-2000**

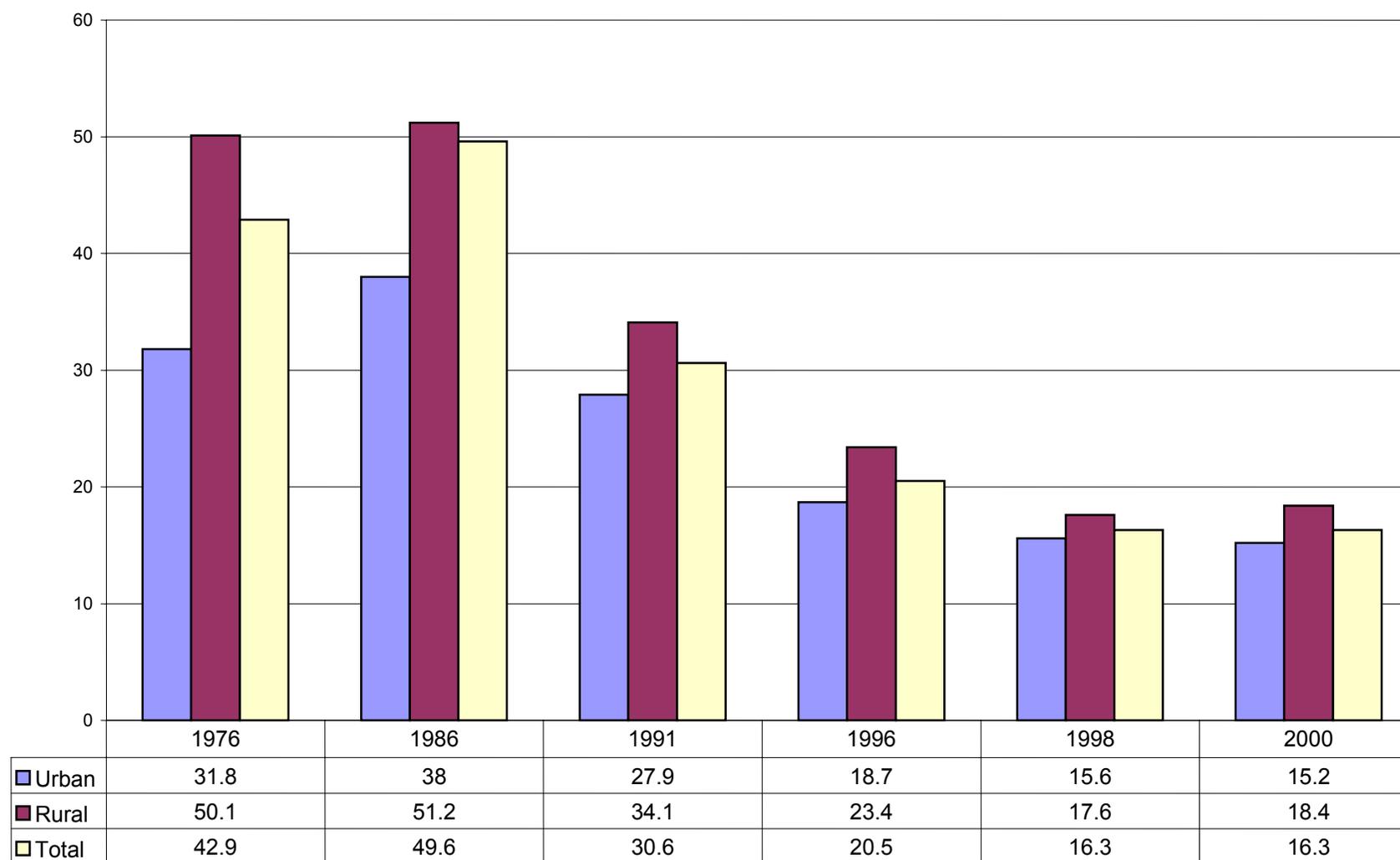


Figure 5 . Changes in TFR of Iranian Population,1976-2000

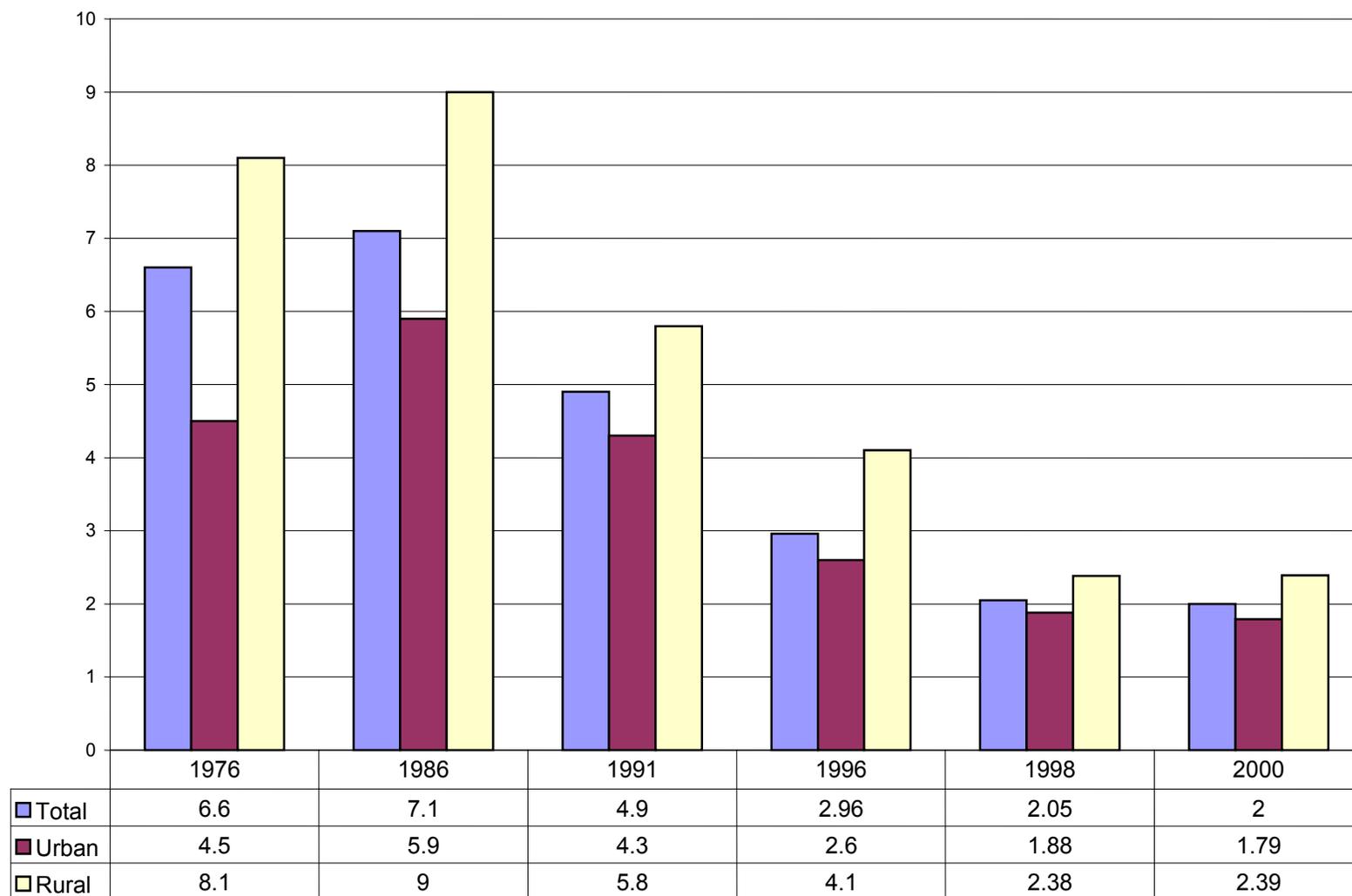
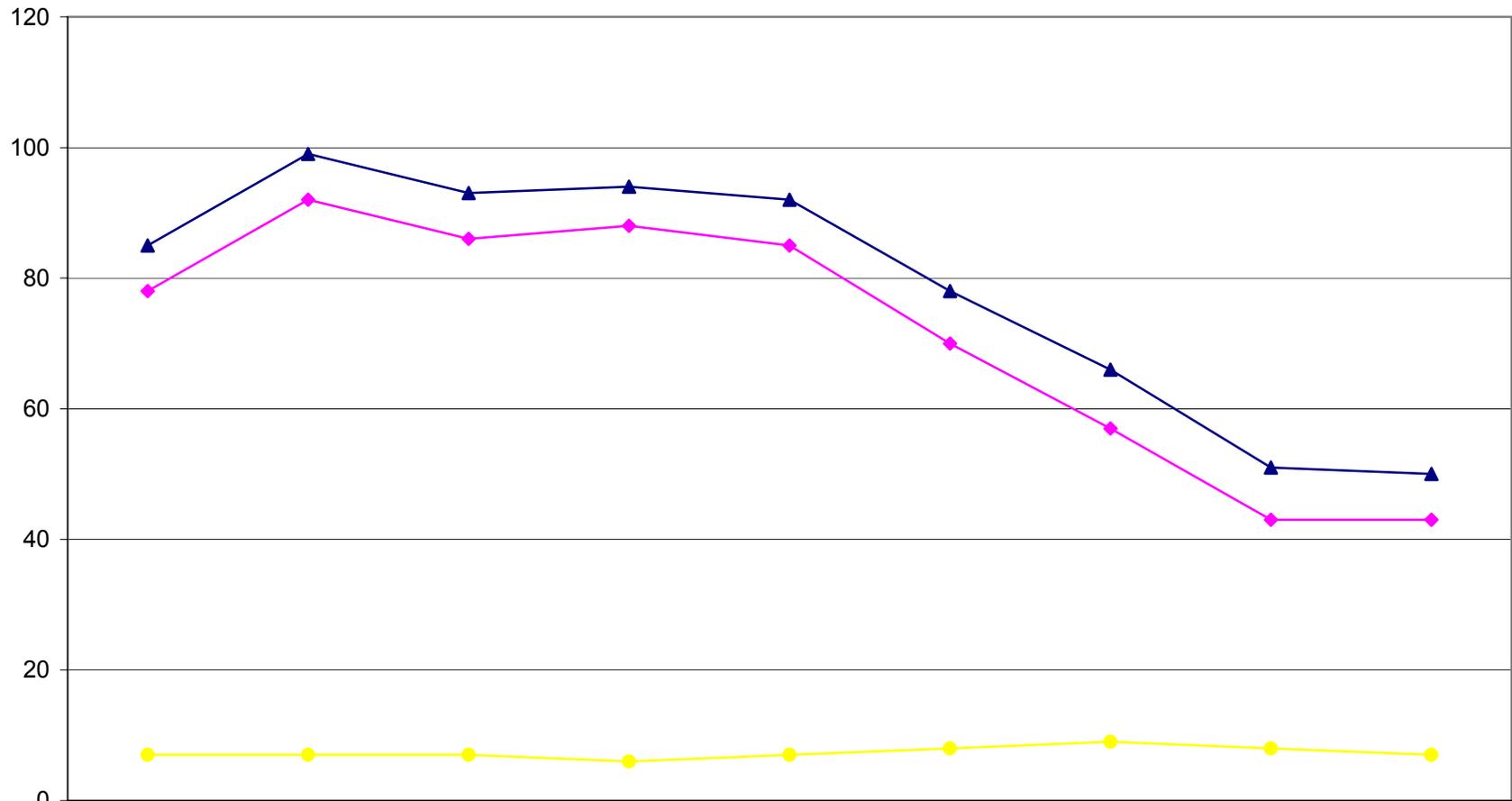


Figure 6. Changes in Total, Child and Elderly Dependency Ratios, 1956-2003



▲ Total	85	99	93	94	92	78	66	51	50
◆ child	78	92	86	88	85	70	57	43	43
● Elderly	7	7	7	6	7	8	9	8	7

6. Projected Population of Iran During 2000-2050:

1. Gradual acceptance of demographic changes in Iran by the UN Population Division and its adherence to revised projections made in 1996;
2. Publication of the Revised version of Projections in 2002 Assuming a base Population of 66.3 million for the year 2000 and taking into consideration evidence of rapid fertility decline since 1986;
3. Revised UN Projections More Consistent with Projections Made by the US Bureau of the Census (2000) and the Manpower Planning Department of IRI Management & Plan Organization;
4. Preparation of a Similar Set of Projections by the PSRC based on a base population of 63.4 million (estimated by the SCI/MPO) and low fertility rates provided by the DHSI (2000) and scenarios similar to those used by the UN (2002);
6. Using UN and PSRC Projections mentioned above, It is anticipated that:

o *Future Trends, 2000-2050:*

Figure 7. Total Population of Iran, 2000-2050, According to Low and Medium Variant Projections of the UN and PSRC

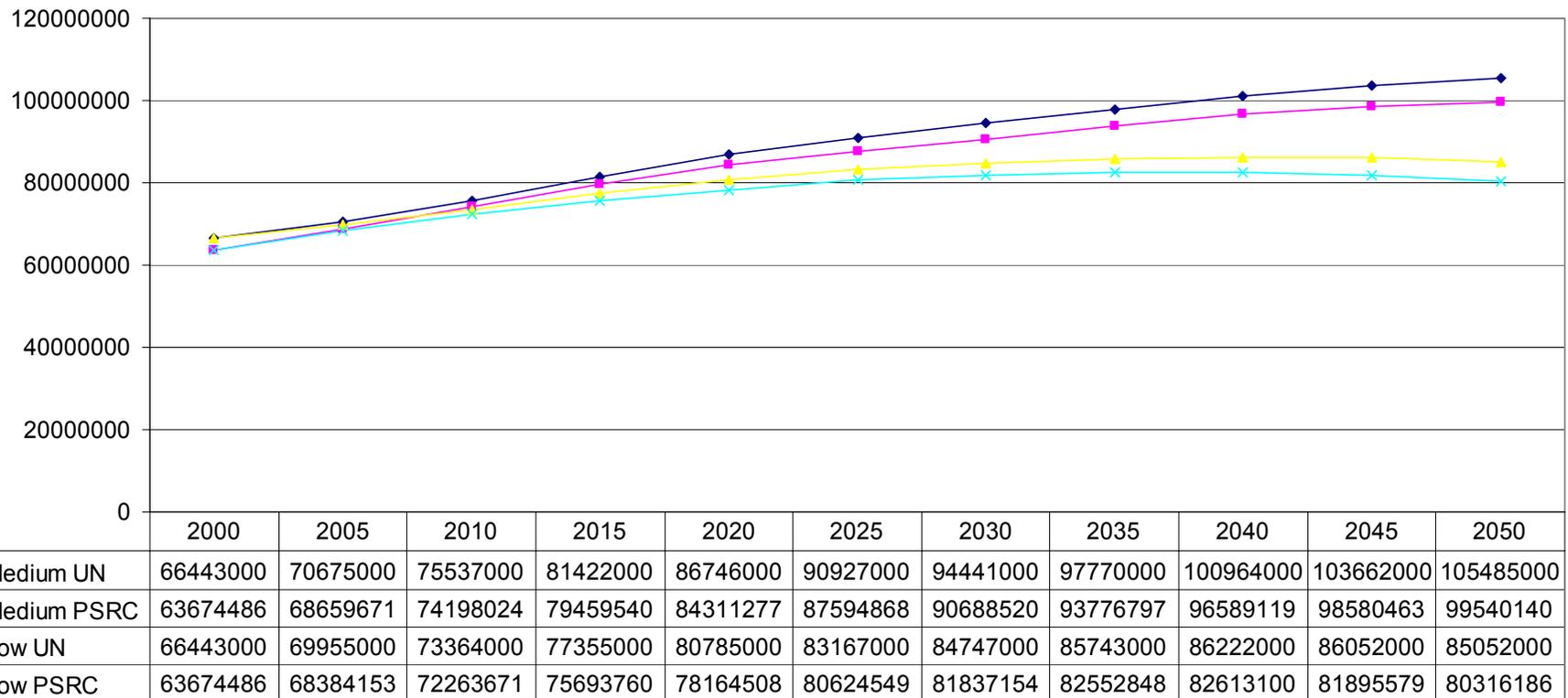


Figure 8. Share(%) of the Three Main Age Groups of the Projected Population of Iran, 2000-2050

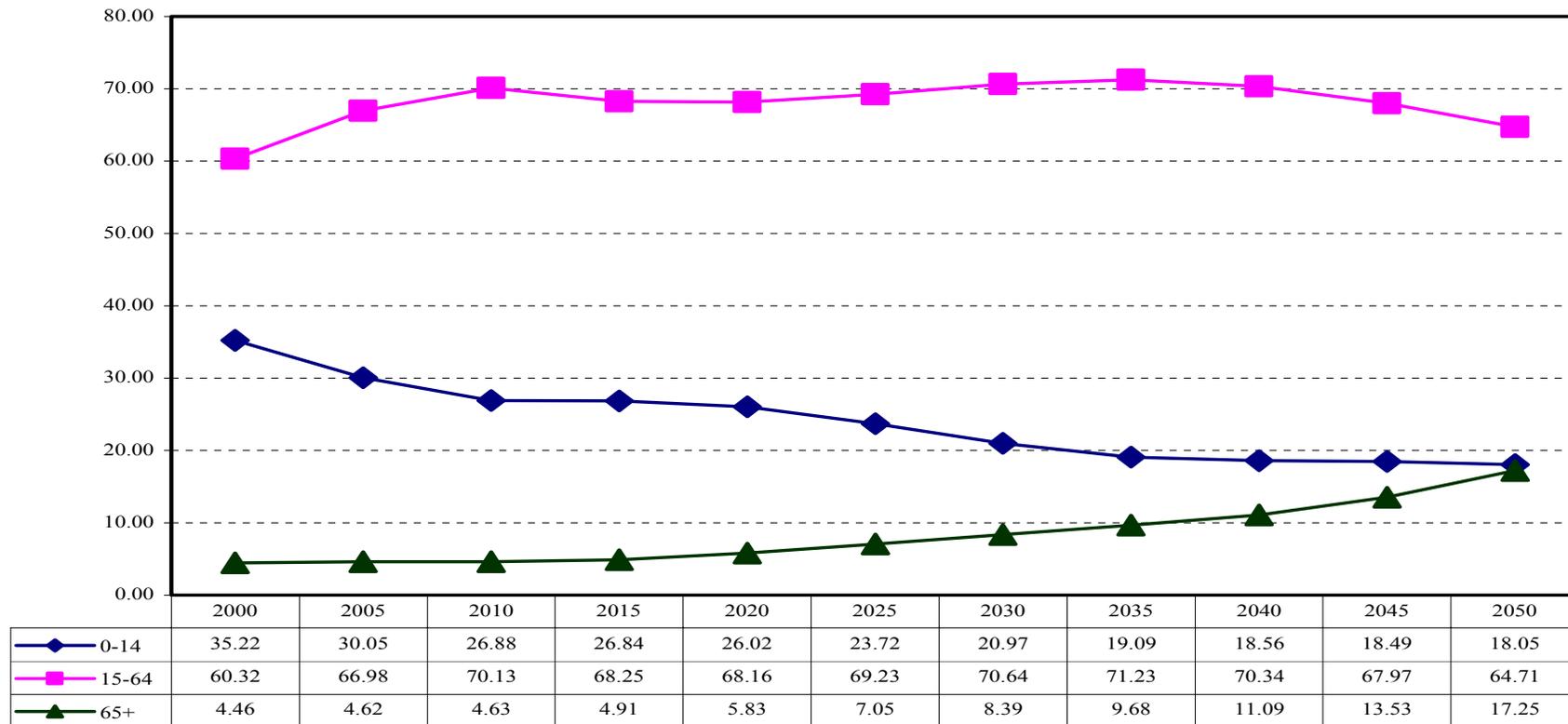
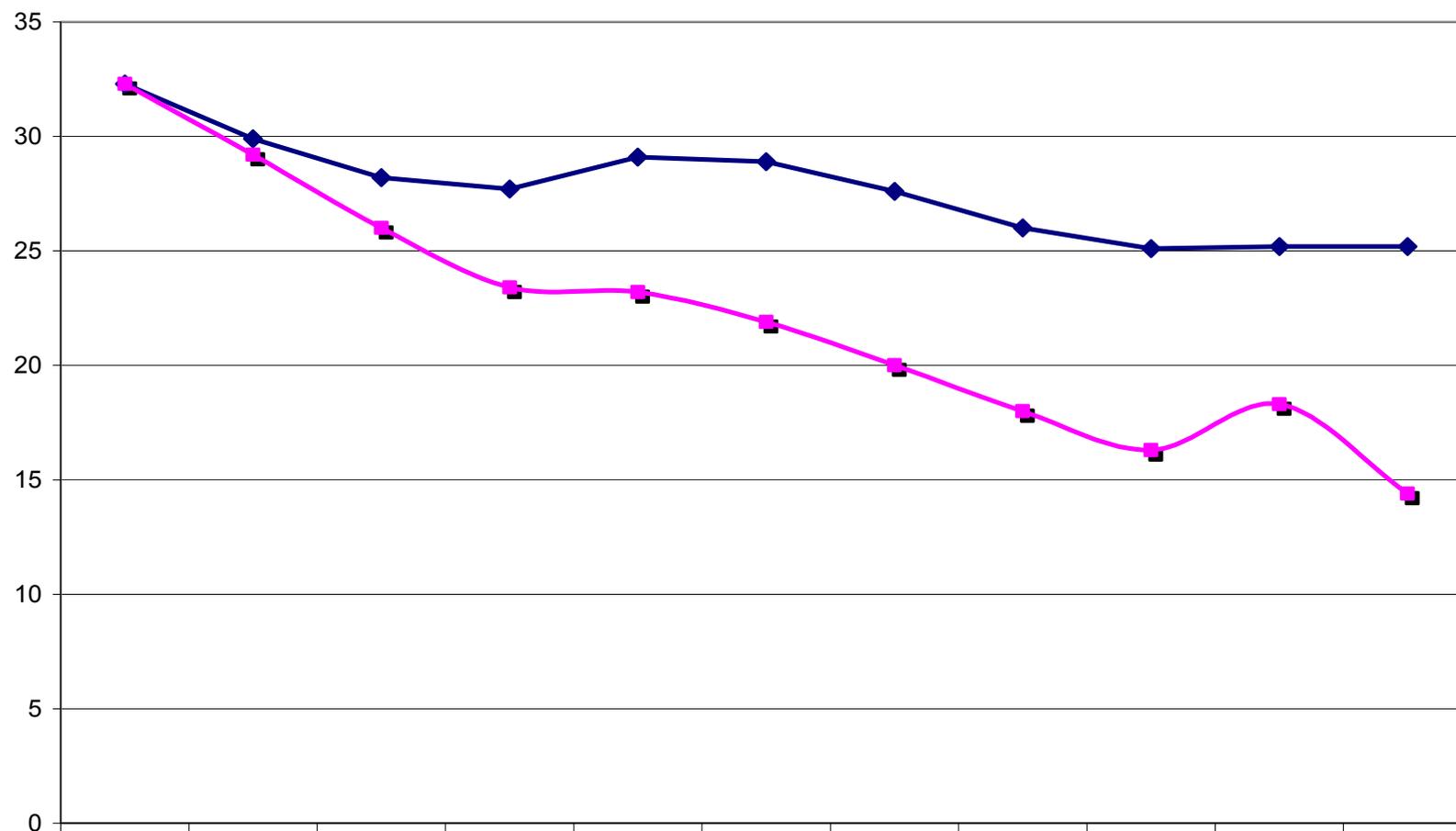


Figure 9. Number of Population Aged 0-19 (in Millions) According to UN Projection, 2000-2050



◆ Medium Variant

■ Low Variant

2000

2005

2010

2015

2020

2025

2030

2035

2040

2045

2050

32.3

29.9

28.2

27.7

29.1

28.9

27.6

26

25.1

25.2

25.2

32.3

29.2

26

23.4

23.2

21.9

20

18

16.3

18.3

14.4

Figure 10. Number of Population Aged 20-54 (in Millions) According to UN Projection, 2000-2050

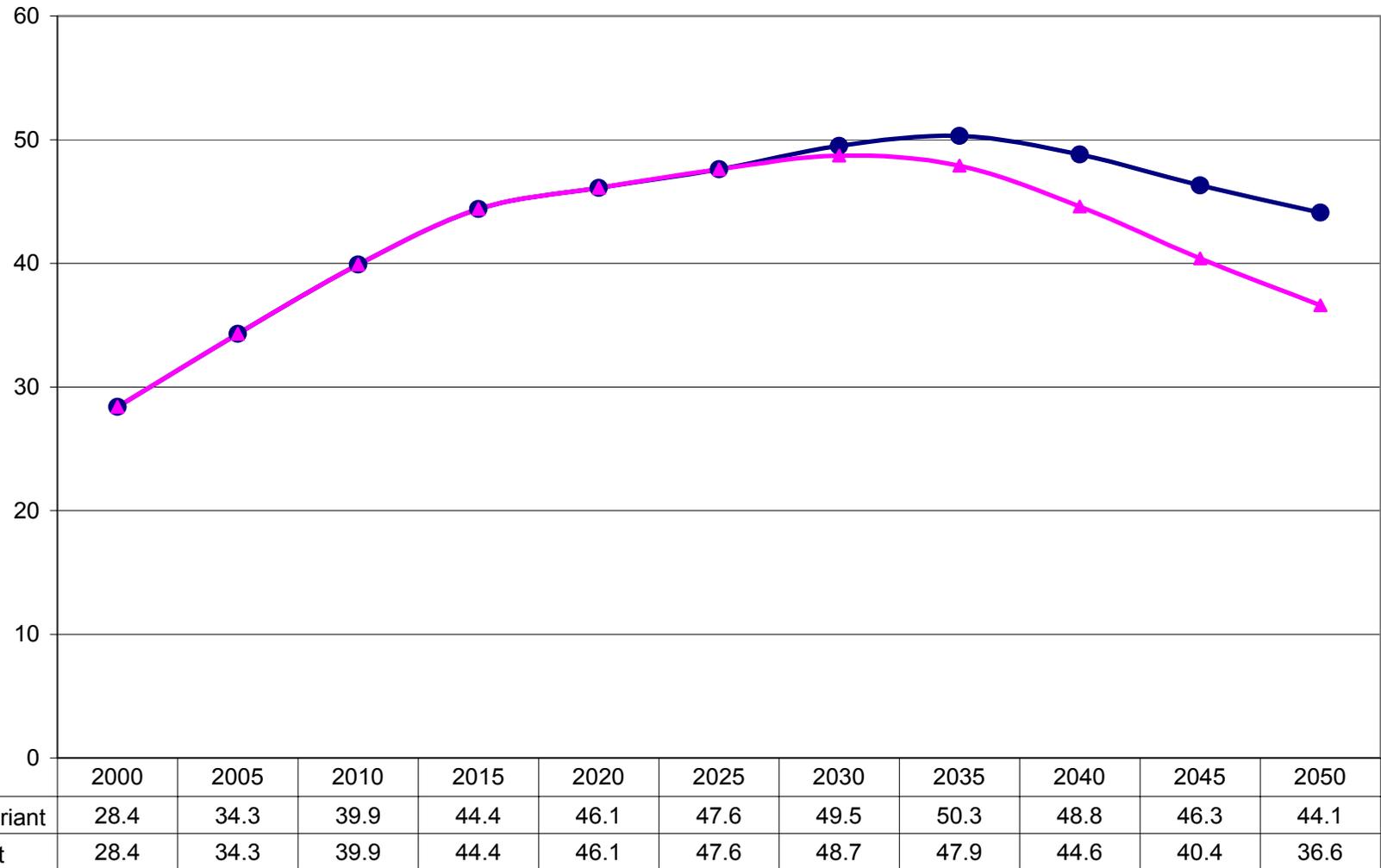
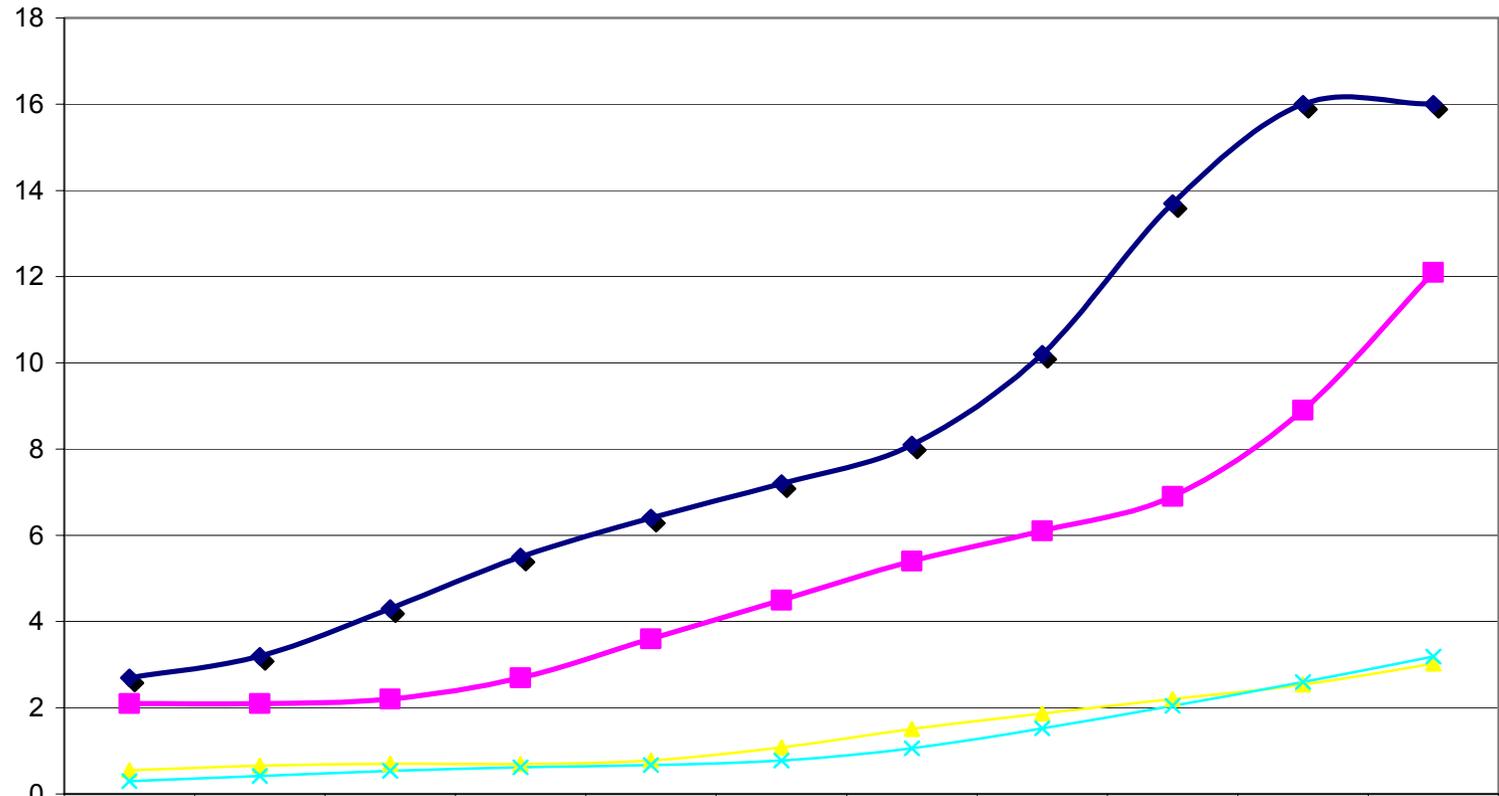


Figure 11. Number of Population Aged 55 and over in Five age groups (in Millions) According to UN Projection, 2000-2050



	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
◆ Population Aged 55-64	2.7	3.2	4.3	5.5	6.4	7.2	8.1	10.2	13.7	16	16
■ Population Aged 65-74	2.1	2.1	2.2	2.7	3.6	4.5	5.4	6.1	6.9	8.9	12.1
▲ Population Aged 75-79	0.554	0.66	0.699	0.697	0.777	1.085	1.508	1.867	2.204	2.543	3.023
✕ Population Aged 80+	0.296	0.416	0.535	0.617	0.675	0.779	1.064	1.527	2.045	2.599	3.19

Figure 12. Percent of Women Aged 15-49, According to UN Projection, 2000-2050

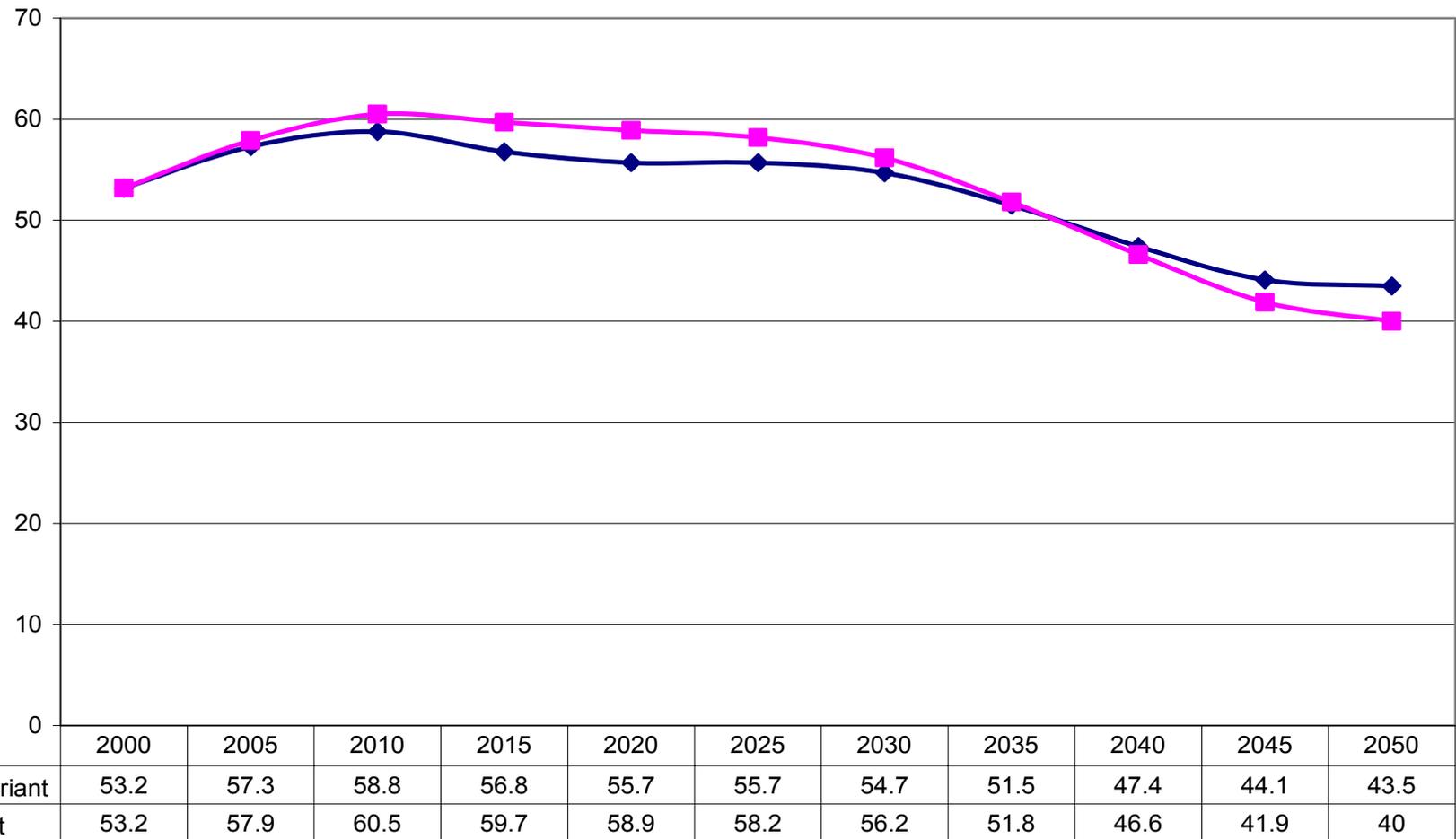
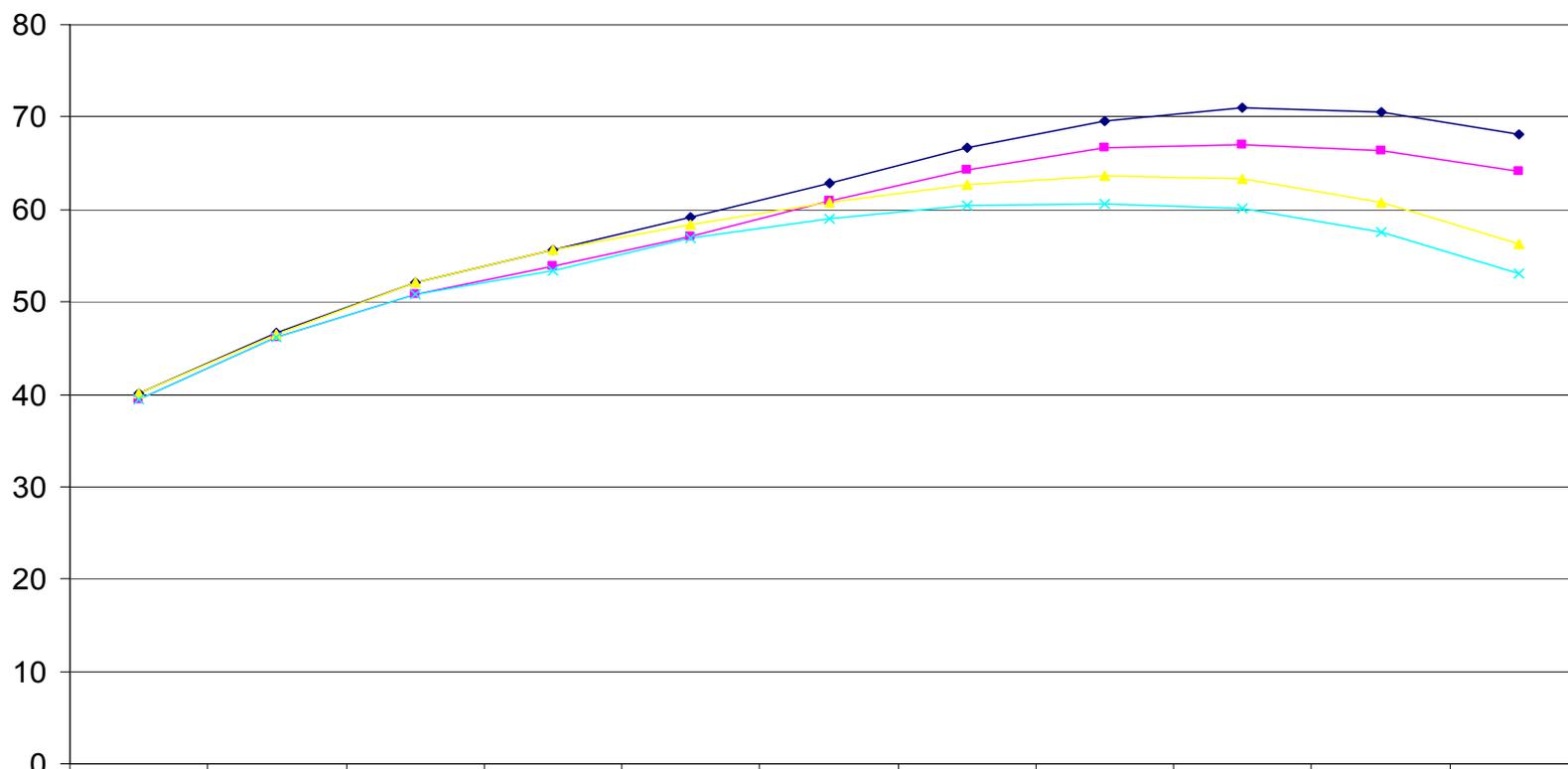
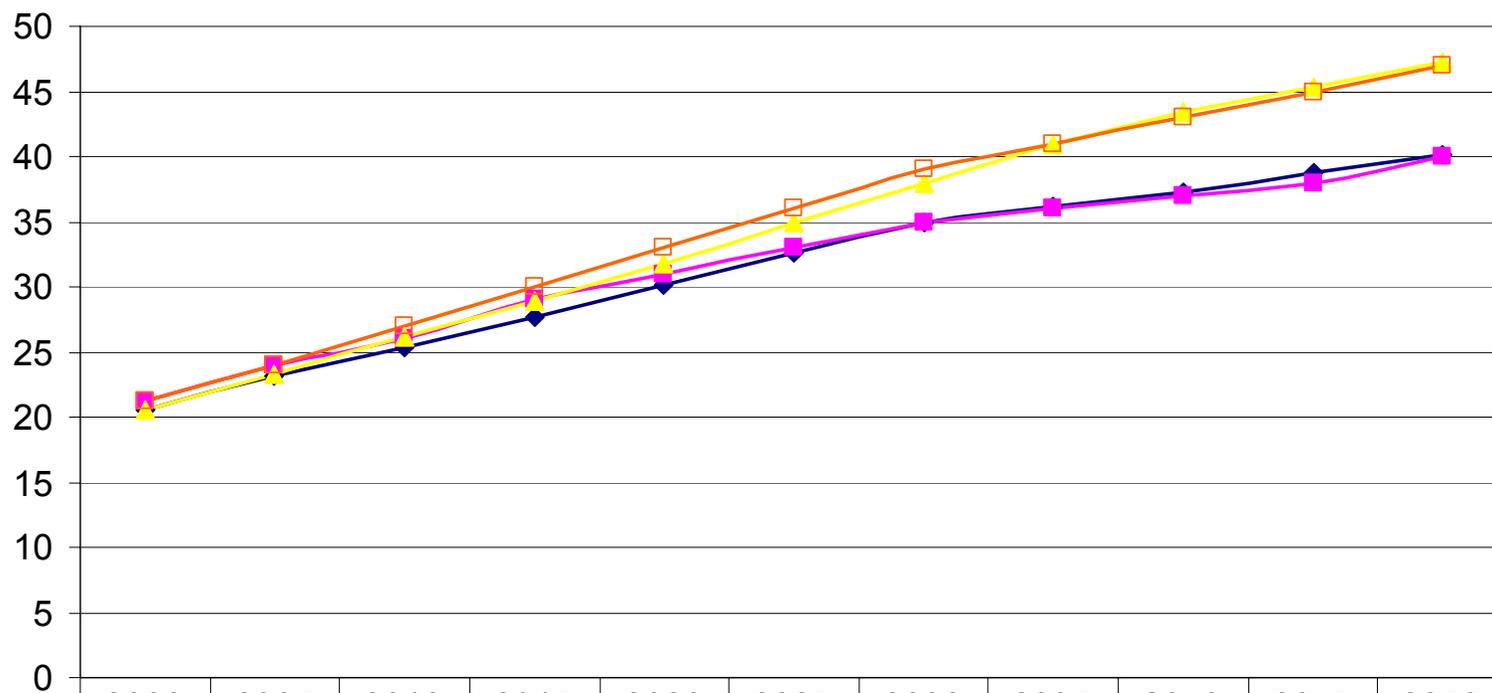


Figure 13. Number of Population Aged 15-64 Years (in Millions) According to Different Scenarios, 2000-2050



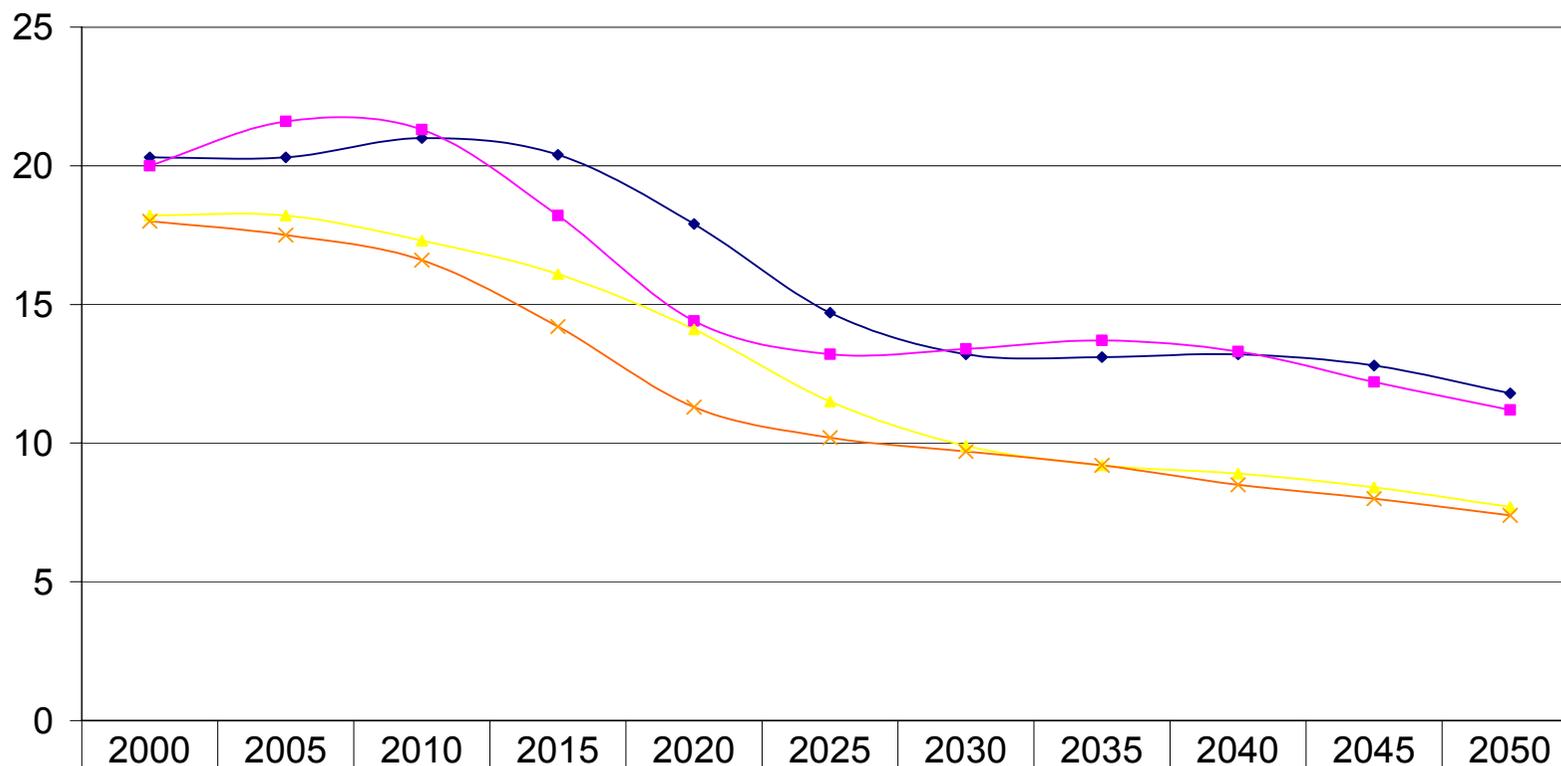
	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
◆ Medium UN	40.1	46.6	52.1	55.6	59.1	62.9	66.7	69.6	71	70.5	68.2
■ Medium PSRC	39.4	46.2	50.8	53.8	57.1	61	64.3	66.7	67	66.4	64.1
▲ Low UN	40.1	46.5	52.1	55.6	58.4	60.8	62.7	63.7	63.3	60.8	56.3
× Low PSRC	39.4	46.2	50.8	53.4	56.9	59	60.5	60.6	60.1	57.6	53

Figure14 .Median age(Years),2000-2050,Low and Midium Variant Projections of UN and PSRC



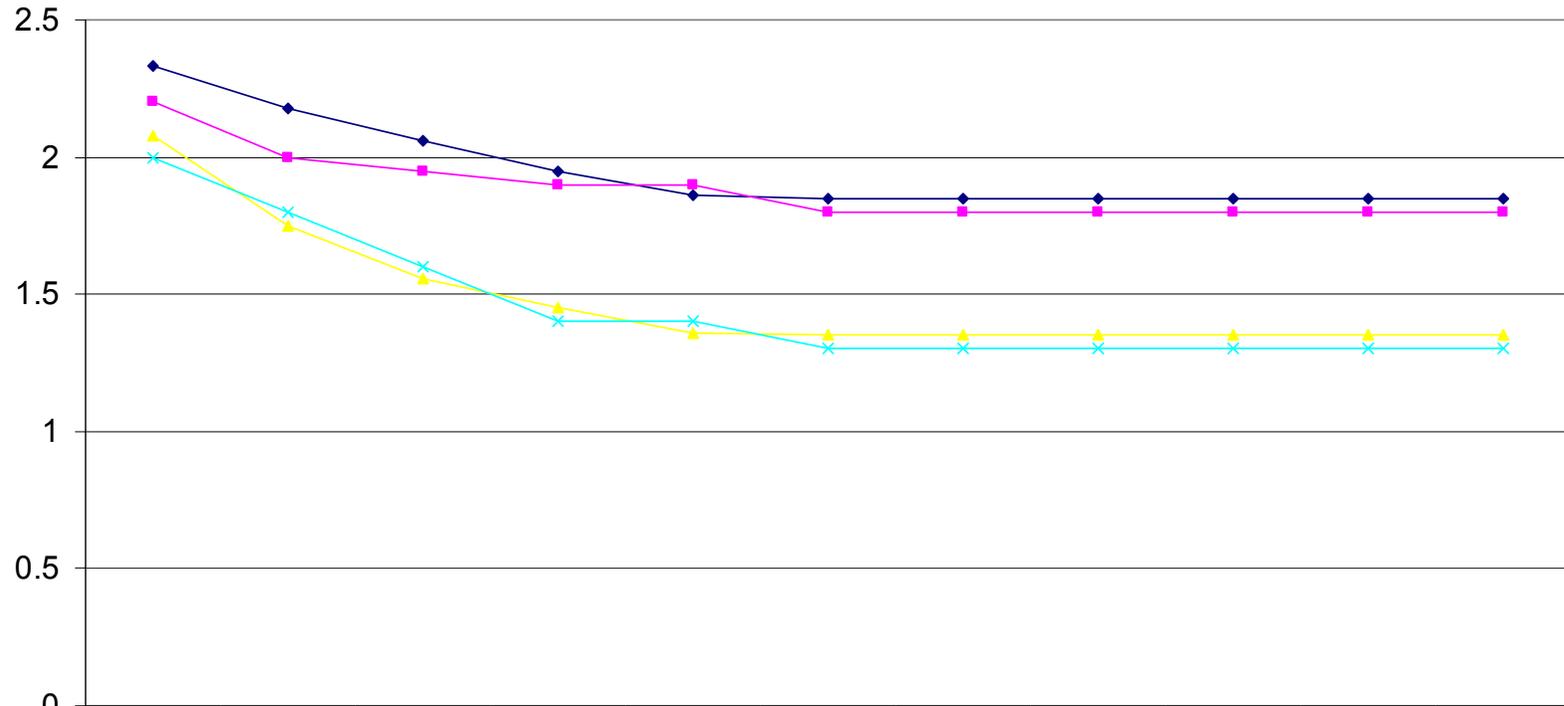
	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
◆ Medium UN	20.6	23.1	25.4	27.7	30.1	32.6	35	36.1	37.3	38.7	40.2
■ Medium PSRC	21.3	24	26	29	31	33	35	36	37	38	40
▲ Low UN	20.6	23.3	26.1	28.9	31.8	35	38	41	43.4	45.4	47.3
□ Low PSRC	21.3	24	27	30	33	36	39	41	43	45	47

Figure 15. Crude Birth Rate (Per 1000 Population), Low and Midium Variant Projections of UN and PSRC



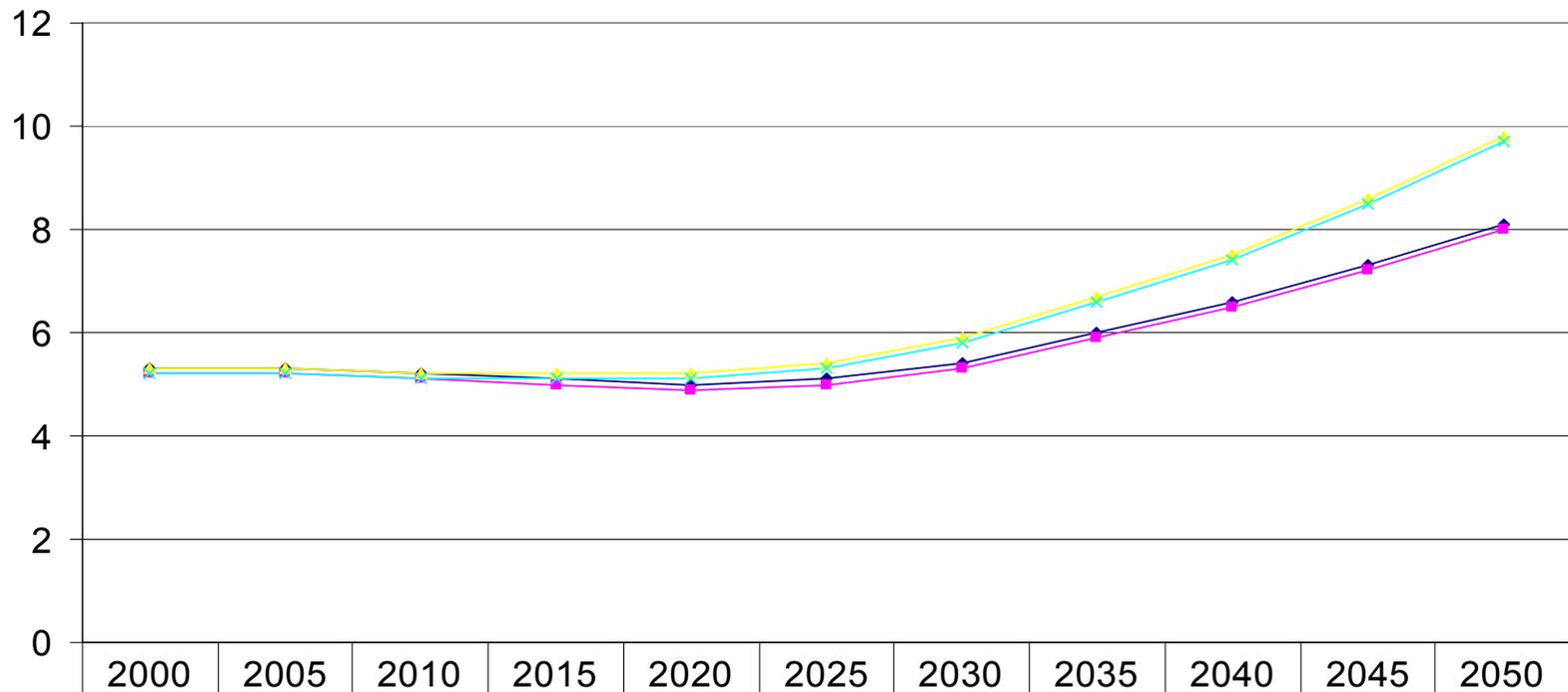
	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
◆ Medium UN	20.3	20.3	21	20.4	17.9	14.7	13.2	13.1	13.2	12.8	11.8
■ Medium PSRC	20	21.6	21.3	18.2	14.4	13.2	13.4	13.7	13.3	12.2	11.2
▲ Low UN	18.2	18.2	17.3	16.1	14.1	11.5	9.9	9.2	8.9	8.4	7.7
✕ Low PSRC	18	17.5	16.6	14.2	11.3	10.2	9.7	9.2	8.5	8	7.4

Figure16. Total Fertility Rates, 2000-2050, Low and Medium Variant Projections of UN and PSRC



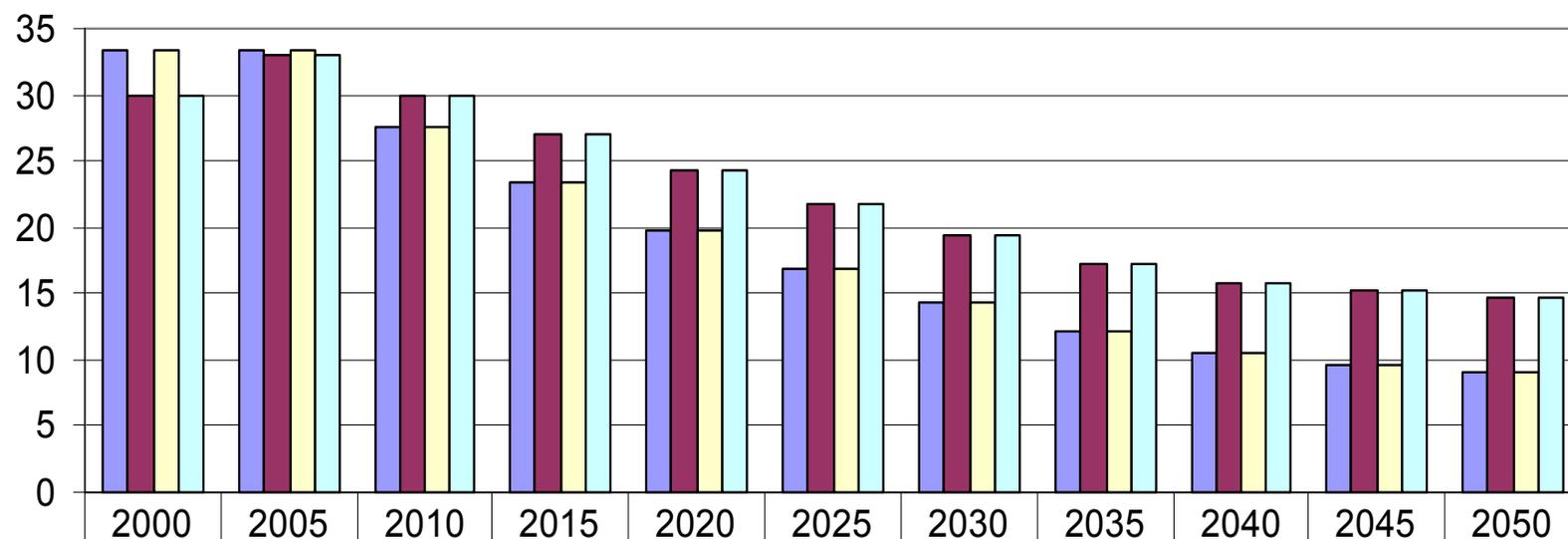
	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
◆ Medium UN	2.33	2.18	2.06	1.95	1.86	1.85	1.85	1.85	1.85	1.85	1.85
■ Medium PSRC	2.2	2	1.95	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8
▲ Low UN	2.08	1.75	1.56	1.45	1.36	1.35	1.35	1.35	1.35	1.35	1.35
✕ Low PSRC	2	1.8	1.6	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3

Figure 17. Crude Death Rate (Per 1000 Population) ,Low and Medium Variant Projection of UN and PSRC



◆ Medium UN	5.3	5.3	5.2	5.1	5	5.1	5.4	6	6.6	7.3	8.1
■ Medium PSRC	5.2	5.2	5.1	5	4.9	5	5.3	5.9	6.5	7.2	8
▲ Low UN	5.3	5.3	5.2	5.2	5.2	5.4	5.9	6.7	7.5	8.6	9.8
✧ Low PSRC	5.2	5.2	5.1	5.1	5.1	5.3	5.8	6.6	7.4	8.5	9.7

Figure 18. Infant Mortality Rates (Per 1000 Births) Low and Medium Variant Projections of UN and PSRC



Medium UN	33.3	33.3	27.6	23.4	19.7	16.8	14.3	12.2	10.6	9.7	9
Medium PSRC	30	33	29.9	27	24.3	21.7	19.4	17.2	15.8	15.2	14.6
Low UN	33.3	33.3	27.6	23.4	19.7	16.8	14.3	12.2	10.6	9.7	9
Low PSRC	30	33	29.9	27	24.3	21.7	19.4	17.2	15.8	15.2	14.6

**Figure 19. Life Expectancy at Birth (Years) for Iran,
According to UN Projection, 2000-2050**

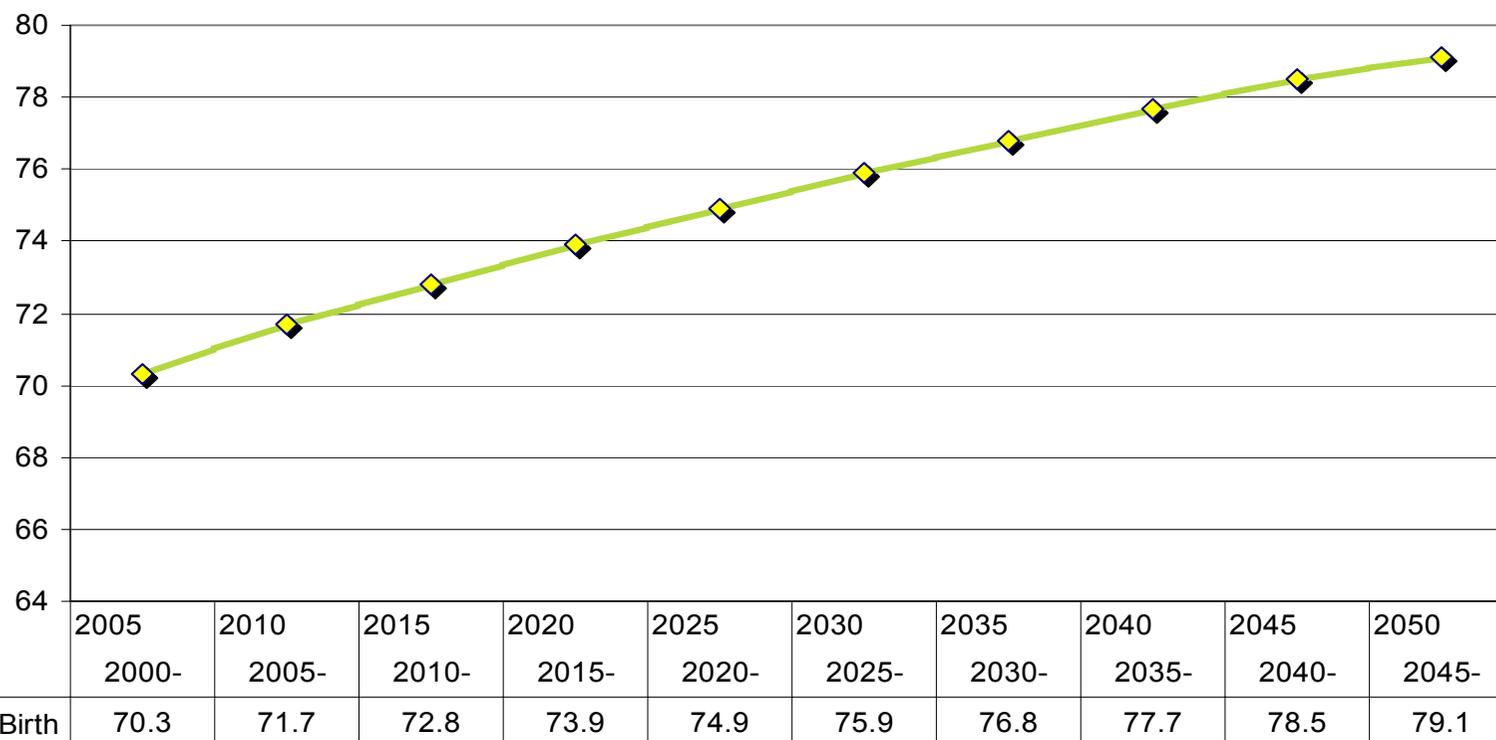
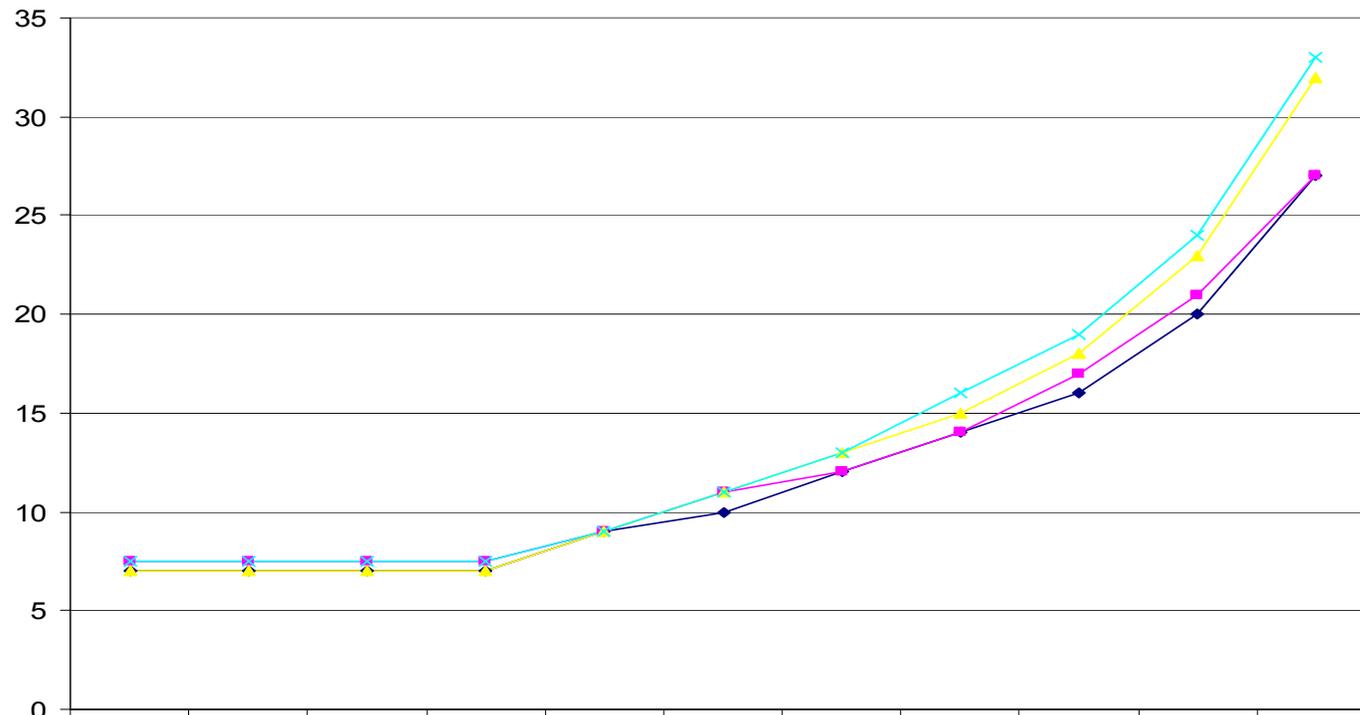


Figure 20. Child Dependency Ratios (100%) ,Low and Medium Variant Projections of UN and PSRC



	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
◆ Medium UN	58	45	38	39	38	34	30	27	26	27	28
■ Medium PSRC	54.5	42	38	40	38	33	29	26	27	28	28
▲ Low UN	58	43	34	32	30	26	23	20	19	18	19
× Low PSRC	54.5	45	34	33	28	25	22	21	19	18	19

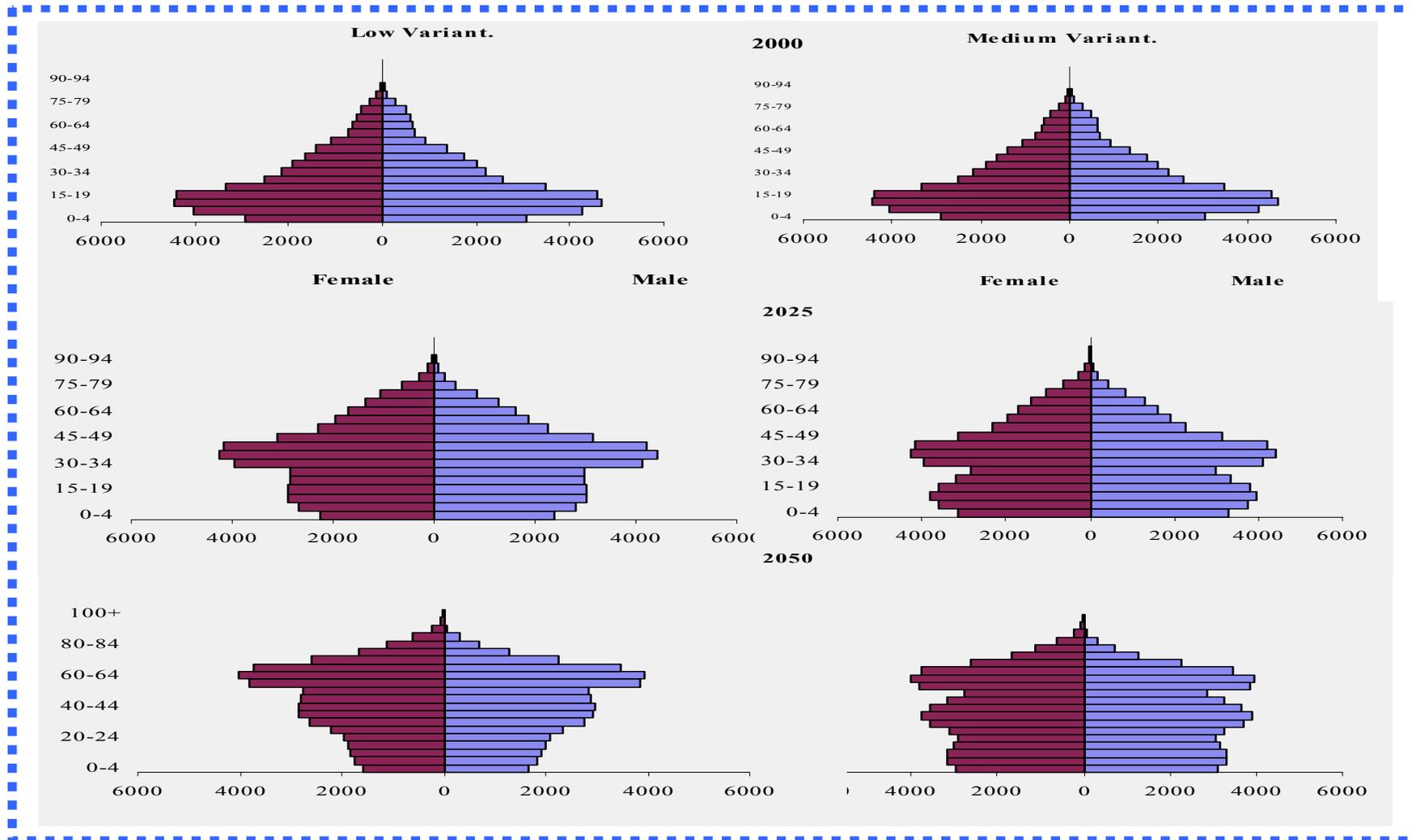
Figure 21. Elderly Dependency Ratios (100%), Low and Medium Variant Projections of UN and PSRC



	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
◆ Medium UN	7	7	7	7	9	10	12	14	16	20	27
■ Medium PSRC	7.5	7.5	7.5	7.5	9	11	12	14	17	21	27
▲ Low UN	7	7	7	7	9	11	13	15	18	23	32
✕ Low PSRC	7.5	7.5	7.5	7.5	9	11	13	16	19	24	33

o *The General Picture From Age-Structural Transition*

Figure 22. Age Pyramids of the Population of Iran in 2000, 2025 and 2050
(According to United Nations Low and Medium Variant Projections)



Conclusions

- Having successfully managed an upward swing in fertility, Iran has entered a definite period of age-structural transition since 1996 which will continue through the first half of the 21st Century.
- As a result of this transition, the ratio of children of total population has dropped significantly while that of the elderly (population aged +65) is growing slowly but systematically and will rise from just above 5% during the first two decades of the century to above 17% in 2050.
- Share of working age population (15-64) will gain its highest level by 2015, will fluctuate around that level until 2040 when it will take a downward trend again.
- Commensurate changes in Dependency ratios, a decline in child dependency ratios along with a gradual rise in elderly dependency ratio.
- The period between 2015-2040 will be accompanied by a widening of the demographic window of opportunity. Unless this opportunity is seized, Iran may face serious problems of aging and population declined after 2040s which have serious implications for its social security and health care system.

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Implications:

- Social Security System: Retirement Fund, etc;
- Health Care System, burden of caring for a large number of elderly ;
- Employment and Income Generation for the large group of potentially active youth and young adults entering job market;
- Housing;
- Education, particularly technical-vocational training demanded by the global market;
- Family Formation and Dissolution due to increasing rate of divorce, changes in marital arrangements, etc ;
- Environmental Impact of Urbanization and Energy Consumption caused by wider availability of cars, etc.
