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**Age-structural transition in Iran : short and
long term consequences of drastic fertility
swings during the final decades of twentieth
century**

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**Age-Structural Transition in Iran:
Short and Long-term Consequences of Drastic Fertility Swings
During the Final Decades of Twentieth Century**
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Abstract

Immediately after the revolution (1979) the IRI adopted a pronatalist policy advocating early marriage and childbearing as basic Islamic values. The result was a tremendous rise in fertility rate and a drastic change in the age structure of the population. Although the baby-boom period was rather short and the antinatalist policy adopted in 1989 has been surprisingly successful, the age structural transition (AST) produced by the pronatalist policy has already affected various aspects of Iranian society. The entry of the baby boomers into school system (from 1984 on) led to a heavy burden on various levels of the educational system. Their gradual entry into the labor market (from around 1995) has contributed significantly to the current unemployment crisis. Their impact on the housing market is also already being felt. Their eventual exit from the labor market (in early 2040s) looms as a major threat to Iran's social security system. The aim of this paper is to review the process and dynamics of AST in Iran and to explore its medium and long-term consequences for social and economic development of the country.

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Age Structural Transition in Iran:

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Short and Long-term Consequences of Drastic Fertility Swings During the Final Decades of Twentieth Century

1. Introduction

The international debate on population which began as part of the general discourse on development after the second world war had until recently been dominated by the demographic transition theory and its preoccupation with the consequences of the disturbed balance of births and deaths. The policy and practical objective of this concern was to find out how and how soon developing countries burdened with high rates of population growth could be helped to lower their fertility rate. The impact of the latter, on the age-structure and the composition of the population received little serious attention. The idea of age structure and its close links with and unavoidable impact on fertility and mortality dynamics had of course been long recognized by demographers like Keyfitz . Such classical writers on population and development as Coale & Hoover (1958) had also offered insightful discussions concerning the impact of changing population age structure on national savings, investment and economic growth. But little serious note had been taken of problems that the age structure resulting from lowered fertility and mortality rates would pose for developing countries.

Since mid-1980s, however, most developing countries have shown promising signs of fertility decline and the potential consequences of the changes in age structure have received growing recognition by both demographers, economists and policy makers. This has led to the emergence of new concepts like *age-structural transition*, *demographic bonus*, and *the demographic window of opportunity*. It has become clear that following fertility decline a period of demographic change will be ushered in during which the number and relative size of the young, working age population will surpass that of children (ages 0-15) and the elderly (ages 65+). This period will present developing countries with a unique opportunity to invest in human capital formation, improve the quality of their labour force and stimulate economic growth. The process has already been documented in South East Asia and some Latin American countries.

Iran, like other developing countries, has been deeply concerned with the process of demographic transition since 1950s. Initial efforts to control fertility and population growth by the establishment of a national family planning program were interrupted by the eruption of the Islamic revolution in 1979 and the strongly pronatalist atmosphere created by war postponed Iran's demographic transition for almost ten years. Since 1989, when the government of Iran adopted an antinatalist policy and the family planning program was revived, however, the situation has changed drastically. The success of Iranian program, which helped raise contraceptive prevalence to above 60% of eligible married couples in less than five years has in fact surprised many observers. The equally sharp decline in marital fertility rates to almost replacement level by late 1990s has also taken most observers by surprise. As a result of these developments the age structure of Iranian population has changed drastically. By 1996, when the last census was held, the share of children aged 0-14 had fallen below 40 percent of the population while the share of the elderly had risen above 4%. Several large-scale surveys conducted between 1997-2003 strongly suggest that the process of fertility decline is continuing. The demographic window of opportunity thus opened deserves close scrutiny and analysis. The aim of this paper is to review the unfolding picture of age-structural transition in Iran and to explore its policy implications.

2. Sources of Data

Data used in this analysis consist of two main types: Census and survey results for the period 1956-2003 and projections for the period 2000-2050. In addition to decennial censuses conducted since 1956 and a combined census survey conducted in 1991, the last decade has witnessed the implementation of several large-scale surveys. Among these, the Population Growth Estimation surveys conducted by the Statistical Center of Iran (SCI) in 1997-1998 provide a wealth of data on fertility rates of Iranian couples. The information provided by these surveys have been squarely confirmed by the results of the huge, nationwide DHS-type survey conducted jointly by the SCI and Ministry of Health & Medical Education (MOHME) in October 2000 (Mehryar et al, 2002).

The large-scale Household Employment Surveys (HES), initiated in 1998 and carried out on a quarterly basis since 2000 have provided up-to-date information on such socio-demographic characteristics as education, labor force participation, marital

status and age structure of both urban and rural population. As far as morbidity and mortality trends are concerned a recent study conducted by the MOHME (2000-2001) has resulted in the collection of a mass of detailed information on mortality by cause of death by province, age, sex and urban rural residence. The first two volumes of this monumental study which cover 18 of the 28 provinces have revealed clear evidence of a drastic fall in mortality rates and an advanced stage of epidemiological transition in Iran, cardiovascular diseases, cancers and road accidents emerging as the main sources of mortality. For the period 2000-2050, use will be made of the revised medium variant projections of the UN Population Division (2002).

3. Historical Context and Changes in Policy

The population of Iran is estimated to have been about 9.5 million at the start of the 20th century. By 1956 when the first census was taken it had risen to 19 million. Thus, due to the traditional balance between high fertility and mortality rates, Iran's population had taken 50 years to double. The age structure revealed by the 1956 census was, however, indicative of a very young and rapidly growing population. The second census taken in 1966 revealed a total population of 26 million growing at the annual rate of 3.1 percent. At this rate of growth Iran's population would double in less than 25 years. There was some evidence that the birth rate had gone up slightly since 1940, while the mortality rate had declined significantly.

A family planning program with explicit demographic and health objectives was introduced in 1967. In combination with other development and modernization processes, the program was able to bring about some noticeable change in the fertility desires and behaviour of married couples, particularly in urban areas. These were reflected in the results of the third census taken in 1976 which showed a population size of 34.5 million with an annual growth rate of 2.7 percent. The relatively large decline in growth rate (from 3.1 to 2.7 percent) revealed by the 1976 census was indicative of the beginning of a new phase of demographic transition in Iran. Comparison of the growth rate indicated by this census with the much higher rates demonstrated by the censuses preceding (1966, 3.1%) and following it (1986, 3.9%), led some demographers to view it as indicative of a "*stalled transition*" (Aghajanian, 1991).

Shortly after the publication of the results of the 1976 census Iran went through a period of political protest and rebellion which ended in the establishment of

the Islamic Republic of Iran in early 1979. The new regime adopted a pronatalist policy. Early marriage and reproduction were presented and promoted as basic Islamic values and the national family planning program was suspended. Individual couples were, however, free to use contraceptives available through both public MCH clinics and the private sector.

The impact of this policy reversal was clearly reflected in the results of the 1986 census. The population of Iran had risen to 49.4 million and was growing at the enormous rate of 3.9% per annum. In terms of the total population size, the intercensal gain which had fallen from 36.1% (between 1956-1966) to 30.7% (between 1966-1976) had climbed up to 46.7% between 1976-1986. The heightened rate of growth (from 2.7 to 3.9) was noticeable in both urban (from 4.93 to 5.41) and rural areas (from 1.11 to 2.39) of the country.

Publication of the results of the 1986 census coincided with the end of the eight-year war against Iraqi aggression and the beginning of the post-war reconstruction program. The extremely high rate of growth revealed by the 1986 census in combination with growing evidence of the depletion of Iran's oil revenues persuaded IRI authorities to adopt an antinatalist policy and revive the long-suspended family planning program in 1989.

Contrary to all expectations, the new policy was enthusiastically received by people. In less than five years, the CPR had gone up to 64 percent of eligible couples and there were clear signs of a precipitous fall in fertility rates. The last census held in 1996 revealed a total population size of 60 million (as compared with the figure of 76 million projected by the UN Population Division in 1996) growing at the modest rate of 1.9% per annum. There were also clear signs of a remarkable drop in both fertility (from a TFR of 6.5 to 2.6) and mortality (from a crude death rate (CDR) of 12 to 6 per 1000).

For The age structure of the population had also undergone some impressive changes. the first time in Iran's demographic history the proportion of children aged 0-14 had fallen below 40 while that of elderly aged 65+ had risen above 4. In contrast the share of the potentially productive group aged 15-64 years had risen to over 55%. There was thus clear evidence of the opening of a demographic window of opportunity in Iran.

Large- scale nationally representative surveys conducted since 1996 suggest that the downward trend in fertility revealed by the 1996 census has continued. National estimates of Iran's population size at the dawn of the 21st century vary

between 63.5 and 64.3 millions. The UN projections for 2000-2050 revised in 2002 are also now based on a considerably reduced base population size of 66.4 million.

4.0 Age Structural Changes, 1956-1966

4.1 *The General Picture*

A glance at the age pyramid for 1956 reveals the striking rise in population growth rate during the 15 year period preceding the census (1941-1956). There is a marked shrinkage at age levels 15-24 (cohort born between 1932-1941). The next two age brackets are somewhat larger but also of a more or less rectangular nature. From age 34 on the pyramid takes a smooth triangular shape.

The pyramid for 1966, while less regular than that of 1956, confirms the high fertility and rapid population growth that has taken place since early 1940s. The shrunken rectangular shape of the age groups 20-29, and to some extent 30-39, is not too different from the one given in the 1956 pyramid. There is also some suggestion of a slight decline in the number of children aged 0-4, that is those born during the second half of the decade preceding the census. The pyramid for 1976 has a more regular triangular shape but its lowest rang is clearly indicative of a noticeable fall in the number of children born between 1951-56. This may be taken as a sign of the growing impact of the FP program introduced in 1967.

In contrast, the age pyramid for 1986 has a broader base and more regularly declining shape until ages 30-34. Although Iran is known to have lost a large number (estimated about 250,000) of relatively young men during the revolution and eight-year war, there is little sign of this in the 1986 pyramid. Presumably the marked decline in general mortality that has taken place since 1980s and the inclusion of a large group of Afghan refugees in the 1986 and 1996 censuses have compensated for the war related mortality.

The pyramid for 1996 is different from all four previous pyramids in that it reveals a clear fall in the number and relative share of children aged 0-9. The fall is particularly impressive for age group 0-4 and confirms other evidence regarding the acceleration of fertility decline since 1991. Age pyramids for urban and rural areas in 1996 are very similar and indicate that the huge fertility decline experienced by Iran since late 1980s has not been limited to urban areas only.

Judging by the age pyramids for 1956 and 1966, Iran would seem to have experienced a baby boom between 1940-1970. The gradual entry of the large number

of children born during this period into reproductive career could have played a role in dampening the impact of the family planning program between 1967-1979. The large number of women born during the period 1945-1966 was also partly responsible for the sudden rise in fertility after the revolution. The cohort of 20-40 year old women whose lowered fertility resulted in the surprisingly low growth rate revealed by the 1996 census belongs to the cohort born between 1966 and 1976. To what extent the low fertility demonstrated by this birth cohort was influenced by the fact that they were born during a period dominated by an active family planning program and an antinatalist atmosphere remains to be demonstrated.

4.2 Major Age Groups

The age structure of the population enumerated in 1966 differed only slightly from that of the 1956 census. While the proportion of children aged 0-14 had risen (from 42.2 to 46.1), that of the population aged 65+ had dropped slightly (from 3.9 to 3.7). As a result the total and child dependency ratios of the population had gone up markedly (from 85 and 78 to 99 and 92, respectively) but the dependency ratio of the elderly had remained constant at 7.

By 1976, the share of children of total population had dropped slightly (44.5 as compared with the figure of 46.1 in 1966) but there was no commensurate rise in the share of the elderly. If anything, the share of the population aged 65+ had declined slightly (from 3.7% to 3.5%). As a result, while the total and child dependency ratios of the population enumerated in 1976 (93 and 86) are lower than those for 1966 (99 and 92), there is virtually no change in the dependency ratio of the elderly (7).

The following decade witnessed a huge increase in the size, fertility, and growth rate of Iranian population. The share of children aged 0-14 enumerated in 1986 (45.5%) is only slightly higher than that of 1976 (44.5%) but lower than the figure for 1966 (46.1%). At the same time, the proportionate share of the population aged 65+ had fallen to the all time low level of 3.1%. But these ratios may give a misleading impression of the reality. The number of children born during the decade preceding the 1986 census (16,570,717) is 1.55 times the figure for 1976 (10,706,245). Similarly, the number of the elderly enumerated in 1986 (1,532,795) is almost thirty percent larger than the number enumerated in 1976 (1,179,806). The total and child dependency ratios for 1986 (94, 88) fall between those for 1966 (99 and 92) and 1976 (93 and 86) while that for the elderly (6) is lower.

The sharp drop in the fertility rate of Iranian population during 1986–1996 is clearly reflected in the age pyramid for 1996. For the first time, there is a noticeable dent in the two lowest layers of the pyramid representing the age groups 0–4 and 5–9. The dent for the 0–4 age group, that is, the cohort born between 1991–96, is particularly impressive. It is equally visible in the age pyramid of both urban and rural populations.

Considering the more detailed, single year age pyramids for 1986–1996, there is clear evidence of a systematic fall in the number of children born annually between 1987 and 1996. In urban areas there is a sharp drop in the number of children born between 1986 and 1987. The fall, although still there, becomes less noticeable between 1987–1989 and more impressive over the next 7 years (1990–1996). In rural areas, there is a sudden fall between 1986–1987 ending in 1990, with an almost fifty percent fall between 1990–91 but an increasingly larger annual decrease between 1991–1996.

The baby boom period initiated by the revolution thus would seem to have been rather short-lived. In fact, looking at the number of people born between 1976–1986 covered by the 1986 census, it would appear that the peak fertility was reached between 1984 (in urban areas) and 1985 (in rural areas). Births registered by the CRO indicate an even earlier date (1981) for the fertility peak. The combined census-survey conducted in 1991 is also clearly indicative of a downward trend in the number of children born after 1987. By this time the share of children aged 0–4 years of the population had declined to 44.3%, while that of the elderly had risen to 3.5%. Nevertheless, the total, child and elderly dependency ratios (92, 85, and 7) revealed by the 1991 census-survey are hardly different from those of the 1976 census (93, 86, and 7).

The downward trend in fertility revealed by the 1991 census-survey took a more precipitous form during 1991–1996. This is clearly reflected in the results of the 1996 census which revealed a much smaller population size than generally anticipated. For the first time in the recent history of Iran, the share of children aged 0–14 (39.5%) was below 40%. Of the latter, only about a quarter (26%) had been born during the five-year period 1991–1996. On the other hand, the 1996 census recorded a significant rise in the share of the elderly (4.4% as compared with 3.1% in 1986). Due to these changes, the total and child dependency ratios revealed by the 1996 census (78 and 70) are markedly lower than those derived from earlier censuses while the elderly dependency ratio has risen to 8.

According to the DHS-type survey conducted in late 2000, the share of children of total population had fallen to 34.5% while that of the elderly had risen above 5%. As a result, the total and child dependency ratios had fallen to 66 and 57 (as compared with 78 and 70 in 1996) and the dependency ratio due to the elderly had gone up to 9. The Household Employment Surveys conducted in 2002 and 2003 indicate further decline in the relative share of children (to around 28.5% as compared with the figure of 39.5 in 1996 and 45.5 in 1986) but the relative share of the elderly has remained constant at around 5%. The total and child dependency ratios derived from these surveys (50.5 and 43 percent) are almost one-half of those obtained by the 1966 census. The dependency ratio of the elderly (7-8 percent) has, however, remained at almost the same level as in 1956-1976 and 1991.

4.3 More on the 1996 Census and Later Surveys

Of the 60 million population enumerated in 1996, 30.84 million (51.0 %) had been born during the preceding two decades. Of this group at least 28.5 million had been born since the establishment of the Islamic Republic of Iran. This is by far the largest number added to Iran's population within an 18-year period since 1956. By contrast, the number of children aged 0-9 years enumerated in the preceding 3 censuses (1956-1976), was only 25.6 million. Thus the birth cohort born between 1979 and 1996 constitute the major cohort or *wave* that will affect the future shape of Iranian population during the 21st century. In view of the clear evidence of sharp decline in fertility between 1991-1996, one might even be tempted to exclude children born during the second half of the decade preceding the 1996 census and concentrate on the group of children born between 1978 and 1991 (about 22.2 million in 1996) as the wave to be monitored.

The cohort born between 1976-1996 covers four important subgroups corresponding to five-year intervals, 1976-1981, 1982-1986, 1987-1991 and 1992-1996. Each of these cohorts is associated with different historical landmarks. The first five-year period (1976-1981) partly overlaps with the final years of the old regime. Thanks to the oil glut of early 1970s, during this period, most Iranian families, particularly those living in big urban centers, enjoyed unprecedented prosperity and developed unrealistically high expectations regarding future. The second five-year period (1982-1986) coincided with the Iraqi aggression, the eight-year war and the pronatalist atmosphere created by it.

The third five-year period corresponds to the final years of the war against Iraqi aggression and was characterized by devastating signs of war-related damage to the infrastructure, a sharp drop in the national capacity to produce and market oil, a decline in economic growth, and growing doubts regarding the relevance and attainability of the declared objectives of the war. These conditions were mostly responsible for Iranian government's decision to accept UN Security Council's Resolution No 582 on ceasefire and to acknowledge rapid population growth as a major impediment to economic growth and national welfare. It was towards the end of this period that Iran adopted an antinatalist policy and the family planning program was officially revived (1989).

The fourth and last period (1992-1996) coincides with the development of post-war reconstruction plans calling for economic readjustment, gradual removal of subsidies and government control on prices, privatization, and the streamlining of state bureaucracy. Continued economic blockade by the USA and mismanagement of resources hampered the achievement of economic growth targets set by the planners and resulted in higher rates of inflation, unemployment and wide-spread economic hardship. These pressures, along with improvements in level of education of people, particularly women, media exposure and modernization of Iranian society did no doubt contribute to the unexpected success of the revived family planning program and resulted in the tremendous fertility decline that characterizes the last five-year period (1992-1996). Although no census has been carried out since 1996, several large-scale nationally representative sample surveys conducted since then have provided clear evidence of the continuation of the fertility decline and age structural changes indicated by the 1996 census.

5. Challenges Posed by Age-Structural Changes Since 1976-1996

As suggested earlier, the trend, size and shape of Iran's population is likely to be strongly determined by the large cohort born between 1976-1996. Obviously, a birth cohort covering two decades will pass through different stages of life course at different times and its reaction to the particular demands of that stage will be strongly affected by the social, economic and political conditions prevailing at the time. The cohort born between 1976-1981 entered its formal schooling career in 1983 and raised demand for primary education facilities/services considerably. Being constitutionally obliged to provide all children with free education, the government of IRI responded with increased investment in teacher training and recruitment, building

schools and introducing a two-shift schooling system that allowed use of the same premises by two different groups of children, teachers and administrators. When this cohort reached age 12 (1987–1989) a similar pressure was experienced by the junior secondary school system. The same happened when the wave reached age 15 and a

higher demand for senior secondary school facilities became evident.

Thanks to the experience gained and investment made during this period, the educational system was better prepared for the larger wave of the 1982–1986 birth cohort when it reached the age of formal schooling. On the other hand, by the time the much smaller cohort of children born between 1987-1991 reached their school age there were clear signs of excess capacity at the primary school level. This resulted in the closure of a considerable number of primary teacher training centers established during the first decade after the Revolution.

Earlier, the sudden increase in the number of young children had presented Iran with the serious problem of feeding them. The problem was partly responsible for the breast-feeding campaign launched by the MOH. Thanks to the full support of religious leaders and the active participation of grass-root organizations and public mobilization system created during the revolution and war, the campaign proved singularly successful and Iran came to be acknowledged as a regional leader in successfully promoting breast-feeding. Interestingly, the breast-feeding campaign was designed and implemented under the leadership of the same Minister of Health (a US trained pediatrician) who had played a major role in persuading the government to adopt an antinatalist policy and revive the FP program in 1989.

When the large number of children born between 1976-1986 reached the age of higher education in early 1990s, there was an enormous increase in the number of university applicants. The remarkable expansion of opportunities for higher education through both public and private sector initiatives during the preceding decade was able to absorb the shock, although at the expense of quality. As the process has continued, provision of opportunities for higher education has taken critical dimensions and the problem of creating alternative sources of funding for higher education or further expanding the existing private sector has become a subject of much heated debate. It may be fair to say that because of the rising social demand for higher education and the relatively small ratio of secondary school graduates who are currently able to enter universities, the pressure on higher education is bound to continue to rise for decades to come.

Similarly, the gradual entry of the huge birth cohorts of 1976-1991 into the labor market has confronted Iran with huge problems of unemployment and job creation in recent years. Again the problem is unlikely to be solved for decades to come. So is the problems of housing created by the gradual entry of these cohorts to family formation and reproductive phases of life. In this respect it might be of interest to note that despite all the emphasis put on early marriage as a basic Islamic value since the revolution, the age of marriage has in fact gone up considerably over the past 20 years. The upward trend has been noticeable among both men and women regardless of urban-rural status. This may have slightly eased the pressure on housing and other family formation related services but the pressure would seem to have been temporarily postponed and is bound to be faced again in full strength in near future.

6. Signs of the Opening of a Demographic Window

As a result of the sudden decrease in fertility between 1991-1996, the number and relative share of children aged 0-4 dropped significantly. The trend would seem to have continued at least until early 2003 when the last household employment survey was conducted. According to the latter survey only, 7.2% of the population covered was aged 0-4. This is significantly lower than the figures obtained by the 1986 (18.3%) and 1996 (10.3%) censuses. As a result of this change, the total and child dependency ratios have fallen to 50 and 43 as compared with 70 and 78 in 1996. The old age dependency ratio (7) has, however, remained more or less constant between its 1986 (6) and 1996 levels (8).

Despite its enormous size (3.9%), the growth rate experienced by Iranian population between 1976-1988 failed to raise the relative share of children aged 0-14 above its 1966 level. By 1991 it had dropped below its 1976 value (44.3) and by 1996 it was below 40, the conventional level for considering a population as young (Cogwill & Holmes, 1970). The DHS-type survey carried out in late 2000 has given the figure of 34.5 percent which is very close to the figure (35.5) used in the 2002 revision of UN projections. Meanwhile, the share of the elderly (people aged 65+) which had taken a downward trend between 1956-1986 showed an upward rise in 1991 and by 1996 accounted for 4.4% of total population. Surveys taken between 2000-2003 indicate that it had continued to grow and had risen above 5 by the end of the century.

On the other hand, the share of the potentially active population aged 15-64 which had vacillated around 52 percent between 1956-1986 had risen to 56.1% by

1996 and according to surveys taken in 2002 and 2003 it now accounts for around two-thirds of Iranian populations. This rise may be taken as a sign that the demographic window of opportunity which began to open in 1996 has grown wider over the past 8 years. This is clearly reflected in Figure 2 which presents the number of people falling into each of the three main groups (0-14, 15-64 and 65+).

As indicated by figure 2, the number of potentially productive population (ages 15-64) enumerated in 1996 was almost equal to the total population of Iran in 1976. The number of people aged 15-64 exceeded that of those aged 0-14 and 65+ by over 7 million which is more than 12% of the enumerated population. This difference may be taken as a sign of the growing size of the window of opportunity.

Not all of the people aged 15-64 are in reality active. The majority of youngsters aged 15-19 are attending school. In 2003 only about one-third of this age group was considered as economically active, that is employed or looking for employment. A smaller proportion of youth aged 20-24 and 25-29 are also either students or in the process of deciding on a career. Moreover, Iran, like most other countries of middle East, has a very low rate of female labor force participation. Labor force participation of women which had risen to above 12% in 1976. It dropped to about 8.5% in 1986 and was only 9.4% by 1996. According to the latest survey (2003), it is still below 13%. Assuming that men and women have an equal share of the group aged 25-64 and all of men plus 13% of women participate in the labor force, the ratio of people actually active will be much smaller than the figures given above.

In addition to the three major groups discussed above, one may consider other age groups and explore how their share of the population has changed in the past and how it will change as the population goes through later stages of transition. In this analysis the following five age groups will be considered: 0-19, 20-29, 30-59, 60-74 and 75+. These groups in a way represent children (ages 0-14 years), and adolescents (ages 15-19) who need parental care and full time schooling, youth (20-29) of whom some may still be continuing full time formal education but the majority will be at the stage of occupational training, looking for a job and forming families. While differing in age, both groups need a good deal of public investment and support in order to develop their human capital and make appropriate use of it.

The third group covers the young adult population with more or less full time jobs and contributing to national production of goods and services. In addition to paying for their own expenses and those of the younger members of their family this age group also has the lion's share in paying taxes, contributing to security funds and

making savings that provide the capital needed for investment in economic growth. The fourth group (ages 60-74) covers the relatively younger segment of the aged population. Depending on the local circumstances, a considerable proportion of this group may be economically active and performing all or some of the productive activities carried out by the young adult group. A growing proportion of this group will however be pensioners. Their major demand will be in the area of health care services and pension. The fifth sub-group, the "oldest of the elderly", will be predominantly unable to work and will need a good deal of social and health services to continue a decent life

7. Future Trends, 2000-2050

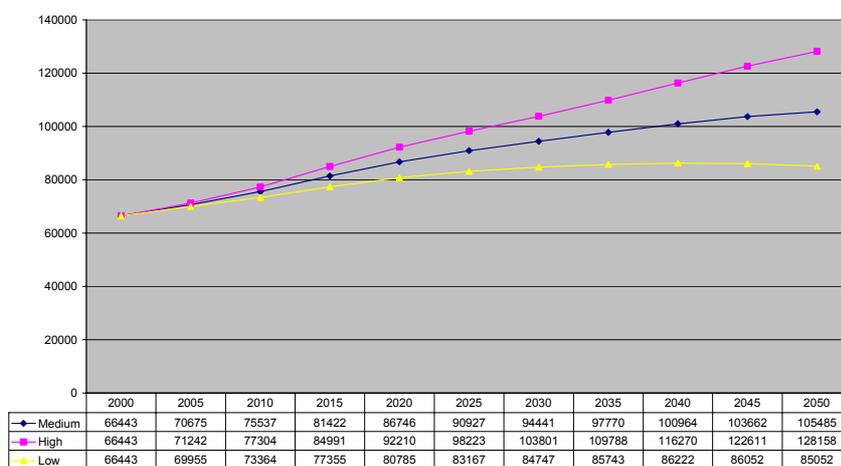
In this section, the future course of age-structural transition in Iran will be considered. For this purpose, the medium variant projection of the UN Population Division (2002 Revision) will be used as the basis. It may be of interest to note that, following the unexpectedly huge rise in fertility and population growth rates of Iran in 1980s, the United Nations drastically revised population projections for Iran published in 1975. The 1996 Revision (published in 1998, that is two years after the completion of the 1996 census) estimated Iran's population in 1995 to be 68.36 millions. Using this estimate as a basis, the population of Iran was projected to rise to 76.2 millions by 2000 and to continue its upward course until 2050. Its final size in 2050 was expected to lie between 143.8 (according to the low variant) and 199.6 millions (according to the high variant), with a medium variant figure of 170.3 millions. The constant fertility variant predicts an even higher figure of 414.16 millions!

These figures have been drastically scaled down in the 2002 revision. Nevertheless, figures obtained by the latter are still higher than those obtained by the US Bureau of the Census (2000) as well as projections made by the Manpower Bureau of the Management and Plan Organization of Iran (1997). The latter cover the period between 2000 and 2020 only. On the basis of recent evidence regarding continuing fertility decline, the more modest figures obtained by Iranian authorities and the US Bureau of the Census would seem to be more realistic. Our guess is that the reality will lie somewhere between the low and medium variants of the UN projections, not too far from the single-variant projection published by the US Bureau of the Census. Because of this uncertainty, we will often refer to both medium and low variants.

7.1 Population Size

All variants of UN projections assume a population size of 66.445 million for the base year, 2000. All of them indicate a relatively sharp rise in population size between 2000-2020. The size attained at this point varies from 80.785 million (low variant) to 92.210 million (high variant). From this point on, the medium and low variants indicate a decrease in the tempo of population growth. This is particularly noticeable in the case of the low variant projection which would seem to have reached a plateau by 2025. As a result, there is only a small increase in the population size between 2025 (83.167m) and 2050 (85.052m). According to the medium variant projection, the population size will continue to rise so that its final value in 2050 (105.485m) is almost 20 millions higher than the value attained in 2020 (86.746m).

Figure 8.1 Projected Population of Iran, 2000-2050 (UN, 2002).



7. 2. Overall Age Structure

The low and medium variant age pyramids of the population for the years 2000, 2025 and 2050 are presented below (Figure 4). They clearly show the vast changes that the population of Iran will undergo during its passage from the beginning to the end of the observation period. From the pyramid for 2000 it would appear that the process of fertility decline initiated between 1990-1995 has continued over the next five-year period. The bulges facing age groups 10-14 and 15-19 are reminders of the high fertility experienced during the 1980s. By the year 2025 the pyramids have taken quite a different shape. The smaller and more or less equal cohorts born after 2000 have given the bottom of the pyramid a rectangular shape. There are interesting differences between pyramids based on the low and medium level projections in this respect. The small bulge between age groups 10-14 to 20-24 in the medium variant pyramid which is indicative of the momentum effect operating between 2005-2020 is almost entirely absent in the low variant pyramid. This means that a sustained low fertility may prevent (or at least overshadow) the momentum effect. The shrunken

rectangles representing age groups 0-4 and 5-9 are indicative of the second phase of fertility decline in both variants. From the pyramid for 2050 it is obvious that while the age structure of the population represented by the low variant projection has continued its downward move in a consistent manner, that of the medium level projection has continued to experience changes in relative size of consequent age groups as a result of primary and secondary momentum effects.

7.3 Main Age Groups

The size of the three main age groups 0-14, 15-64 and 65+ during the period of observation varies according to the variant considered. All three variants, however, indicate a progressive decline in the share of the youngest age group between 2000-2050, and a consistent increase in the number and ratio of the young adult and elderly groups.

7.3 Projected size of children aged 0-14

Projected size of children aged 0-14 between 200-2050 varies according to the scenario used. All three variants predict a fall in the size of this age group between 2000-2010 which is particularly marked and steep in the case of the low variant projection. The downward trend continues at a slower rate over the next decades so that the number for 2040 (11.7 m) is less than one-half of the initial figure (23.4 m). In contrast, the medium level scenario predicts a slower decline in the number of children aged 0-14 between 2000-2010, a rise to almost the initial value between 2010-2020, a slow but consistent drop over the next 15 years, and very little or no change during the remaining decades. The number of children aged 0-14 in the year 2050 is projected to be 19.4 million which is 81.4% of the figure for 2000. The momentum effect that is expected to raise the number of children aged 0-14 between 2010-2020 is totally absent in the case of the low variant projection.

There are several reasons to surmise that the momentum effect may in fact be much less marked than anticipated by the medium and high scenarios. On the one hand, the huge crop of children born during the baby boom period of 1976-1991 has had much better education than their parents. Almost all of them are literate and a good proportion have gone through secondary school or university. They have also been brought up in increasingly urban and media exposed communities where family limitation and contraceptive use have become a highly visible and socially reinforced

norm. The upward trend in age of marriage noticeable since 1986 along with expanding opportunities for secondary and higher education for women and the much higher labour force participation rate of the latter group also mean that the baby boomers are more likely than their parents to view late marriage as normal if not desirable.

Considering the age group 15-19 as part of the child dependent group, it would appear that the downward trend in fertility during 1990s has resulted in a drastic reduction of the number of children and adolescents aged 0-19. The trend is expected to continue until 2015 when the number of children and adolescents will fall to **27.7** millions (as compared with **30,841,092** in 1996 and 32.36 million in 2000). Due to secondary momentum effects, it is expected to rise a bit (to 29.18 million) between 2015 and 2020, stay at that level until 2025 and take a downward turn thereafter which will not stop until 2040. At this point the number of the youngest age group will be about 25.14 million and thanks to minor changes in fertility during earlier decades will remain at around the same level until the end of the period of observation. This is almost 40% of the number of the same age group in 1996. By this time less than 25% of the population will belong to this young dependent age group.

Corresponding figure for 1996 was 68%.

The expected fall in the number of children will have several important consequences. In the first place, it will lead to a decline in the number of children requiring health services, food and pre-school care. Secondly, there will be a sharp drop in the number of consecutive cohorts reaching age of formal schooling and thus a much reduced pressure on the school system. As these smaller birth cohorts move along time, the reduced pressure will be felt by different levels of the educational system.

7.4 Working Age Population (15-64)

According to all four scenarios, Iran starts the 21st Century with a working age population of just over 40 million (or 60.3% of the population). The number rises swiftly according to all scenarios to exceed 52 million by 2010, 55.5 million by 2015, and to approach 60 million by 2020. From this point on the two variants differ in the figures they obtain. According to the medium level projection, the upward trend continues straight until 2040 when the number of people aged 15-64 will exceed 71 million. The following decade will witness a slight drop in the number of this age group and by 2050 there will be 68.254 million people aged 15-64. According to this

projection, at its highest level in 2040 Iran's potentially active and productive population will account for 71% of its total population. By 2050 the ratio will have dropped back to 64.7%. If one considers the share of the working age population as the main indicator of demographic window, it may be said that Iran will have a widening window of opportunity between 2000-2040 which will be particularly noticeable between 2010-2035.

Of the subgroups making up the working age, adult population, youth (ages 15-29) and women of reproductive age (15-49) deserve special attention. The semi-dependent youth aged 20-29 is projected to be 11.936 million at the beginning of the period. This high figure is a reminder of the relatively high fertility rate that prevailed between 1970 – 1980. As the birth cohorts of the first decade after the revolution reach ages 20-29 the size of this group will go up to 15.4 million and 17.39 million by 2005 and 2010. It will decline slightly in 2015 (16.94 million) and go down more precipitously over the next decade to reach its lowest level (12.39 million) by 2025. It will go up again to attain a new height (15.05 million) in 2040, remain at the same level for another five years and go down to its 2005 level by 2025.

The high and fluctuating number of youth aged 20-29 will present the higher education and job training system with enormous challenges. There will also be a high and fluctuating demand for housing by the youth getting married. With the continuing rise in age at marriage and increasing number of unmarried, mostly well educated and western oriented men and women, the country is likely to face new challenges in the area of sexual relations. A rise in premarital and extramarital interactions, already viewed with increasing concern by Iranian parents and authorities, is likely to lead to social problems like a rise in illegitimate births, abortions, STDS and HIV/AIDS.

7.4.1 Adolescents in Need of Secondary Education (15-19)

Among the first group, the majority of adolescents aged 15-17 are currently attending secondary schools and Iranian authorities are interested in raising age of compulsory education to cover this age group. Given the increasing demand for more advanced complex skills, Iran can hardly expect to compete in a rapidly globalizing market if it allows its youth to leave school at age 14. At the same time the curriculum of the existing secondary education which is mainly designed to prepare youngsters to enter universities may need radical changes to enable them train the

kind of middle level technical manpower needed by modern markets. Much more emphasis will have to be put on computer literacy, information technology and foreign languages.

All four projections indicate a drastic and virtually equal fall (amounting to about 2.1 million) in the number of youngsters eligible for senior secondary education between 2000-2015. According to the medium variant projection, the ensuing two decades will witness an increase in the number of this age group which at its peak point (2030) will exceed 1.3 million. This will be followed by a drop to around 3.7 million in 2040, the number vacillating around this figure until the end of the period. The number of youngsters eligible for senior secondary schooling during the last 15 years of the period will be about 1.8 million smaller than the figure for 2000.

7.4.2 Youth Eligible for Higher Education (Ages 18-23)

According to all four projections the number of young people eligible for higher education will rise by over 1.733 million between 2000-2005 to fall only slightly (by 20,000 or so) over the next five years. There will be a consistent and sharp decline (amounting to around 2 million) over the period 2010-2020 according to all projections. The medium variant projection predicts a gradual rise between 2020-2035 followed by an equally gradual decline over the next 15 years. The number of potential university applicants during the final decade of the period of observation is estimated to be between 7.44 and 7.22 millions, that is 1.8 million less than the figure for 2000.

If Iran intends to enter the club of manufacturers of new knowledge and technology it will have to invest substantially in improving the quality of its higher education and in creating opportunities for graduate and post-doctoral studies for increasing numbers of those aged 25-29.

The large group of educated, socially dissatisfied and occupationally ambitious, sexually frustrated youth concentrating in the higher education institutions of large urban centers will also constitute an extremely important and sensitive group. This is the age group that was in the forefront of political demonstrations that resulted in the unexpectedly quick victory of Islamic revolution in 1979. The same age group, particularly women, are known to have played a major role in the victory of the reformist movement represented by president Khatami in late 1990s. If not correctly handled, their enormous energy and enthusiasm may confront Iran with huge social and political problems over the first half of the 20th century. It may be of some

interest to note that the age of voting (15+) is quite low in Iran and the younger group of voters are particularly likely to be dominated by the attractive slogans of opportunist political groups.

7.4.3 Young Adults

The adult group aged 30-59 will experience more continuous and more profound growth than all other groups. Starting with the modest figure of 17.91 million (just over a quarter of the projected population) in 2000, the number of this group will follow a steady upward trend until 2040, although its tempo of growth will decline gradually after 2025. Initially, the number of adults is smaller than that of children aged 0-19. By 2015 it will be the largest of the five aged groups. By 2035 it will surpass the combined number of children and youth and retain this advantage until the end of the observation period. Thus one may consider the year 2015 as the real date for the full emergence of the window of opportunity in Iran and the period between 2025-2040 as the period during which the window will be fully open for exploitation. After this date the window may be gradually narrowed by the entry of larger number of people to attain critical dimensions between 2035-2040 when Iran will be faced with the complex demands of over 4 million people aged 75+ and suffering from all the social, medical and financial problems that currently bother developed countries.

7.4.4 Women of Reproductive Age (15-49 Years)

As the members of this age group were born 15-49 years before the onset of the 21st century, their number is bound to increase as the larger birth cohorts of 1970-1990 period go through their long reproductive period. This is reflected in all variants of projections which indicate a sharp rise between 2000-2010 (from 17.398 million to 22.937 million) followed by a less marked increase over the period 2010-2020. At this point the medium and low variant projections depart from the high and constant fertility scenarios.

According to the medium variant projection, the slow upward trend continues until 2030 and takes a slow downward turn ending in 2045 when it begins a very slight upward trend again. The number of women of reproductive age projected for the final decade of the observation period is about 23 million, that is almost 4.7 million larger than its initial value but 2.5 millions smaller than the peak value (25.72 million) attained in 2030.

This broad group is clearly one of the few major age groups that will not shrink much during the first half of the century. The health and reproductive health

needs of this important group will have to be considered as a priority area in planning health services. It goes without saying that proper attention to reproductive health needs of these women (as well as their male counterparts) will play a major role in not only shaping the health status of Iranian people as a whole but will also go a long way in producing conditions needed for further fertility control and age structural transition.

7.5 The elderly (Age groups 65+)

All variants begin with the same number of elderly (2.962m) which grows at a very low rate to reach 4 million by 2015. As the members of this age group belong to birth cohorts born during the second half of the 20th century, its size is not affected by the different fertility (and life expectancy) assumptions underlying different scenarios. As a result, all four variants produce the same numbers. There is a rise in the rate of growth of the elderly after 2015 so that its size doubles between 2015-2030, exceeds 11 million by 2040 and stands at 18.195 million by the end of the period. This means that while the total size of population of Iran will fail to double during the fifty-year period of observation, the number of elderly aged 65 years and over will experience a six-fold increase.

In relative terms, the share of the elderly of the total population will rise from just over 4% in the year 2000 to over 25% by the low variant and about 20% by the medium variant projection by 2050. Of the elderly population living in 2050, about one third (6.108 m) will be aged 75+. Of the latter group 4.786 million will be aged 75-84 and 1.322 million 85+ years. In other words, by 2050, Iran will have to cater for 3.154 million people aged 80+ which is larger than the total number of people aged 65 and over (2.962 million) in the year 2000. The impact of this huge group of dependent elderly on the social security and pension system of Iran deserves careful analysis. As people reaching age of retirement have all been born during the 20th century their number is not subject to any uncertainty and cannot be expected to change. Nor can the enormous problems of coping with an aged population that will amount to almost one fifth of the total population be ignored.

7.6 Rise in the Median Age of the Population

As a result of the decline in the number of children and the tremendous rise in the number of the elderly, the median age of the population will rise substantially. According to the medium and low variant projections, the median age will rise from

20.6 years to just over 30 years between 2000-2020. The rise will continue, albeit at a slower tempo, over the next three decades so that the median age will be 40.2 by the end of the period.

7.7 Rise in Crude Death Rates

The aging of the population will also lead to a rise in mortality rate according to all four scenarios. The rise will be hardly noticeable until 2025 when the low and medium variants indicate a slight rise (from 5.3 to 5.9 and 5.4 per 1000, respectively). The mortality rate will rise above 6 per 1000 in 2030 and stand at 8.1 (by medium variant) and 9.8 per 1000 (by low variant).

Due to the rise in mortality rate, the annual number of deaths will also increase. The increase will be rather slow between 2000-2025 (from 364,000 to around 450,000). But it will become sharper after 2035 ending up in annual death figures of about 850,000 by 2025.

That the heightened mortality will be mainly due to a rise in the number of deaths among the elderly is clearly confirmed by the projected trend of infant mortality. The latter which is assumed to be 33.3 per 1000 births in 2000 will follow a decelerating rate of decline reaching 19.7 between 2015-2020, 10.6 between 2035-2040 and ending at 9 per 1000 by the last five year period.

7.8. Changes in Dependency Ratios

The most important outcome of the changes in fertility and age structure discussed above is a sharp drop in the number and relative size of the dependent population, that is people aged 0-14 and 65 and over who are not supposed to be economically active. The ratio of these two groups to the group aged 15-64 is known as the *dependency ratio* which can be expressed as either per 100 or per 1000. The *total dependency ratio* refers to the ratio of children under 15 and old people aged 65+ to the potentially working population aged 15-64. In 1956, the total dependency ratio of Iranian population was 85 which means that there were 85 children and elderly for every 100 potentially active persons aged 15-64. The ratio rose to 99 in 1966 and remained above 93 over the next two decades. Thanks to the sharp fall in fertility and number of children born between 1986-1996, the total dependency ratio had fallen to 78 by 1996. It would seem to have continued to fall further over the period since 1996. According to the DHS-type survey conducted in late 2000, it had dropped to 66. The Household Employment Survey for May 2003 gives a figure of 50.

The high dependency ratio of Iran is primarily due to the large size of children aged 0-14. This component has been 85 for most of the past 50 years. Following sharp fertility drop between 1991-1996 the child dependency ratio dropped to 70. It would seem to have fallen below 50 after 2000. The elderly dependency ratio of Iran had stayed fixed at 7 for most of the past decades. In 1986 it dropped to 6 but had risen to 8 by 1996. It has vacillated between 7-9 since 1996.

All four UN projections assume a total dependency ratio of 66 for the year 2000. This is exactly the figure given by the DHS-type survey carried out in October 2000. All four projections also assume a sharp drop in dependency ratio between 2000-2010. The drop is sharper for the medium and low variant projections. According to the medium variant projection, the dependency ratio will take a mild upward swing between 2010-2020 but will go down again between 2020-2035 when it attains its lowest projected value of 40. It will rise again between 2035-2050 and stand at 55 by the end of the period of observation.

The sharp decline in dependency ratio between 2000-2010 is mainly due to the huge drop in the number of children aged 0-14. According to the medium variant scenario, the child dependency ratio will fall from 58 to 38 between 2000-2010, remain at that level until 2020, fall further (to 26) and rise only slightly to attain its final value of 28 by 2050.

In contrast, the elderly dependency ratio is expected to rise and constitute a larger share of the total dependency ratio. According to all four variants, the elderly dependency ratio, which is assumed to have been 7 in 2000, will remain at the same level until 2015. After this date, all variants predict a relatively sharp upward swing in the elderly dependency ratio. According to the medium variant projection, the elderly dependency ratio will rise steadily between 2015-2035 when its size will be exactly double the figure for the initial year. It will undergo an even sharper upward change in 2040 to reach the figure of 27 per 100 by the end of the period.

Due to age differences between husbands and wives and the longer life expectancy of women, the elderly group will include a disproportionately large number of women who are more likely to have been “housewives” without their own income or pension scheme. The “oldest of the old” group is particularly likely to consist of widowed women living on their own. With the gradual disappearance of the traditional family structure and the inability or reluctance of children to look after their parents, this group will need special care in terms of financial support, health, social relations or some form of homecare. Their increasing number is already being

felt by Iran's fledgling social security system whose extension and sustainability has become a matter of national concern.

8. Consequences of AST with regard to Millennium Development Goals (MDGs)

Iran was among the member states of the United Nations which endorsed the set of 8 broad goals and 18 specific targets to be achieved by 2015. All these goals and targets aim at improving the living conditions of people and are in turn affected by the future size and age structure of the world population. Iran's tremendous success in checking its high population growth rate within a surprisingly short time has in fact enabled her to invest its resources in improving the health, education and social status of Iranian people. Many of the goals mentioned in the MDG list are already achieved. Almost all children now have access to public primary education. Literacy rate of people aged 6-24 had risen to above 95% in 2003. There was almost no gender disparity in access to primary and secondary education. Over the past few years, the number of women sitting university entrance examinations and passing them has surpassed that of men. Neonatal, infant, and under five mortality rates have been reduced significantly since 1990s. So have maternal mortality ratios. More important, the traditional gap between urban and rural areas in terms of infant and maternal mortality and most other health indicators have been considerably narrowed. In the area of environmental sustainability, however, Iran's achievements have been less remarkable. In fact, due to an abundance of oil resources and underdeveloped technology, Iran's per capita energy consumption and CO₂ production exceeds those of most other countries. The overwhelming majority of people in both rural and urban areas have, however, access to safe drinking water, electricity and mass media. Iran has also taken great strides in combating and controlling traditional communicable diseases, including malaria. As a result, the morbidity and mortality pattern has changed enormously and problems arising from life styles and individual behaviours have emerged as the main causes of mortality. HIV/AIDS epidemic still remains limited to certain high risk groups, particularly injecting drug users. There are however indications that the pattern of HIV transmission may be changing to heterosexual relations and Iranian authorities have recently taken a more open and realistic approach to this problem. The sustainability of these achievements will heavily depend on economic growth over the next decades. If economy grows there will be more resources for

investment in further improvement of the progress made in following MDGs. This is particularly true of goals dealing with poverty reduction and job creation. As the dependency rates of children will continue to fall and there will not be much increase in the dependency rate of the elderly between 2000-2015, Iran will be in a demographically safe period. Judicious investment of resources that will be saved due to a continuing fall in the number of children in human capital development and renovation of the industrial infrastructure will be essential for good use of the window of opportunity facing Iran.

9. 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 the population has dropped significantly while that of the elderly is just rising above 5%.

There are clear signs of a widening window of opportunity.

The huge number of children born between 1976-1996 will however continue to confront Iran with serious problems during the first decade of the century. These will be mainly in the areas of job creation and employment. As the cohort of young men and women enter their family building and reproductive careers, the country will be faced with problems of housing and probably a new wave of baby boom. The increasing number of people going through their most active and productive period of life (ages 25-59 year) will present a unique opportunity for growth, savings and investment.

If this opportunity is taken seriously and made good use of, Iran will be in a much better position to respond to the enormous challenge the large number of elderly in the final decade of the period. In this regard, Iran has to realize that women comprise almost half of the potentially productive age groups and their absence from the labour force can undermine all efforts to speed up and maintain the rate of economic growth needed. The fact that the majority of the elderly demanding care and services in 1940s will be women makes investment in women's labour force participation all the more important.

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HIGHLIGHTSrev1.PDF

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figure 1. Changes in Iranian Population and its Three Main Sub-groups, 1956-1996

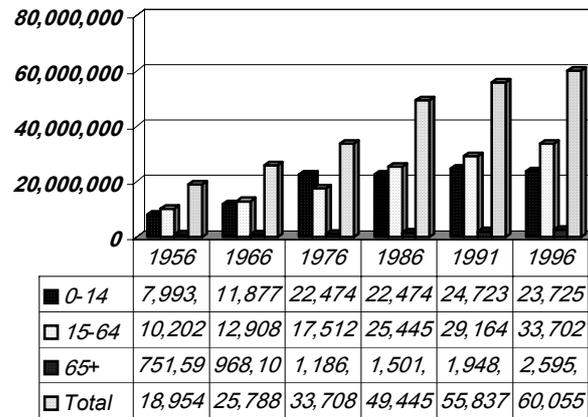
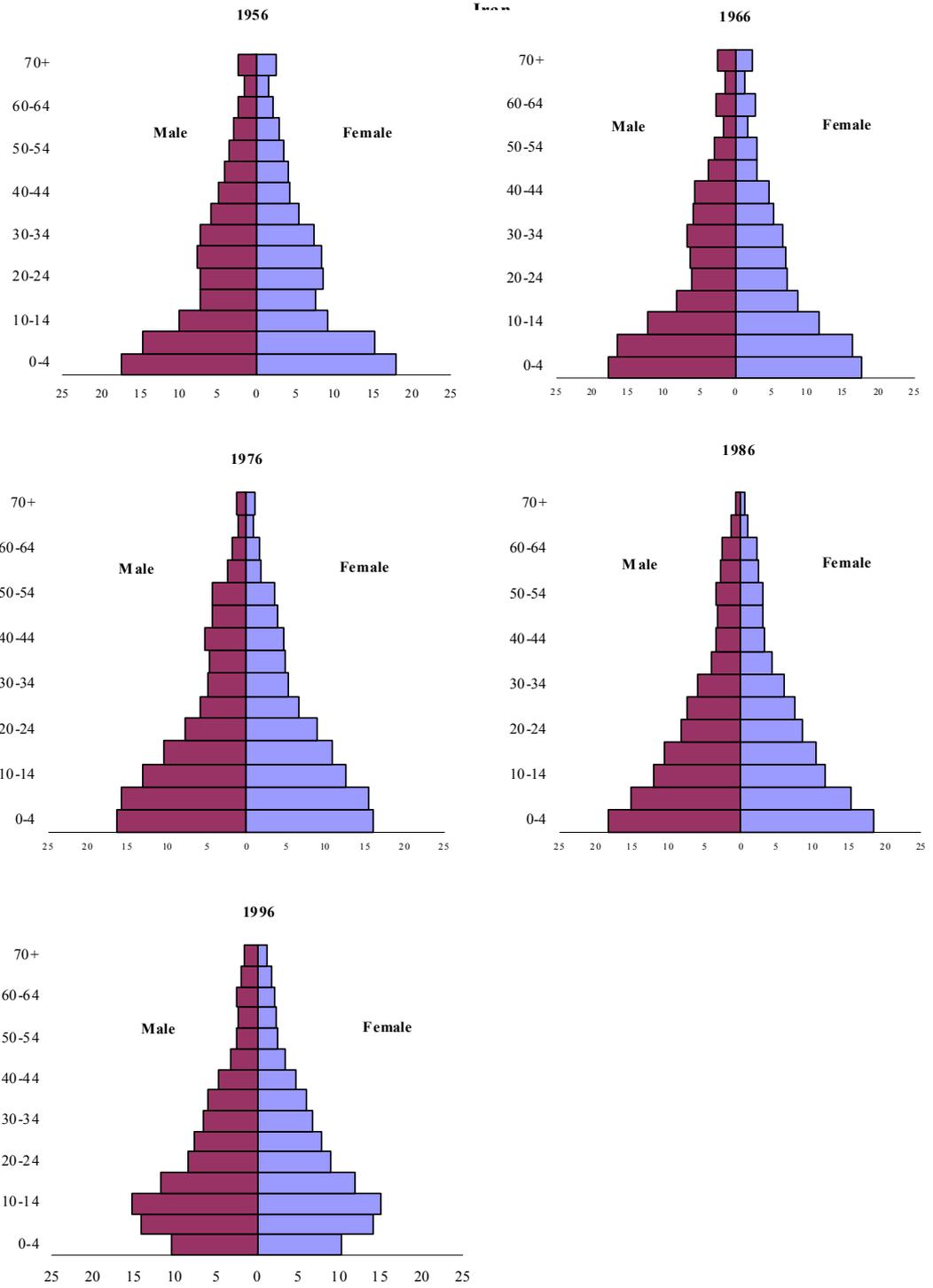


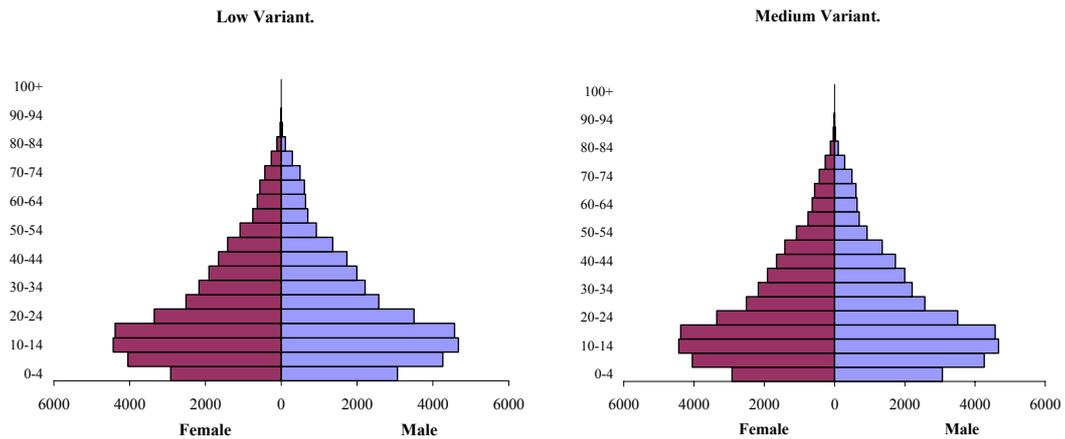
Figure 3. Population Pyramids of Iran, 1956-1996

Fig. 6 Population Pyramid of Iran, 1956-1996, Statistical Center of

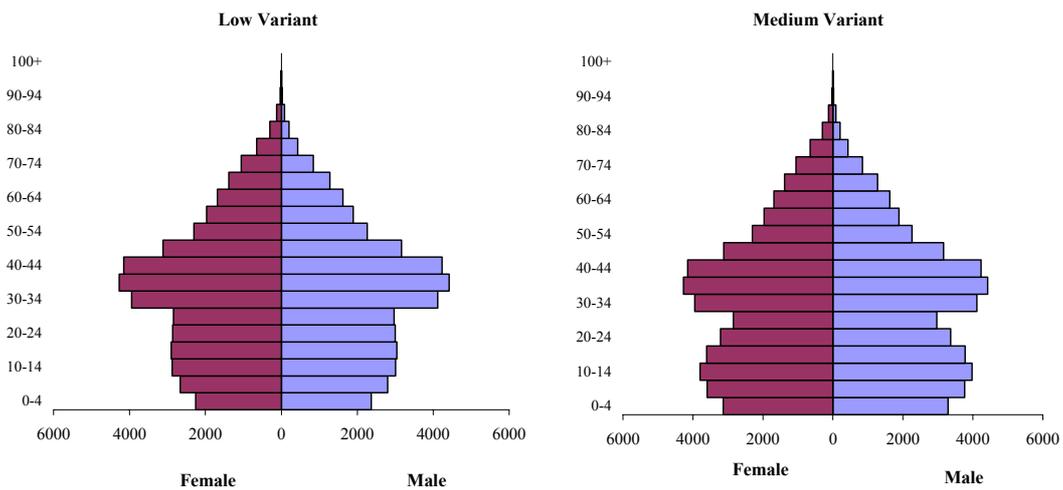


**Figure 4. Age Pyramids of Iran's Projected Population between 2000-2050
According to Medium and Low Variants (UN, 2003).**

Age Structure of Projected Population for 2000.



P. 6 Age Structure of Projected Population for 2025, UN 2002, Low & Medium Variants.



P. 11 Age Structure of Projected Population for 2050, UN 2002, Low & Medium Variants.

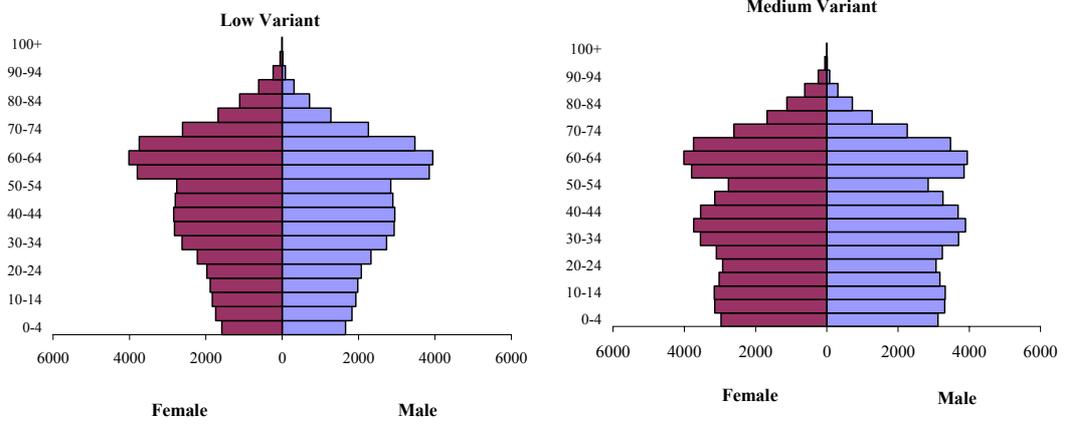


Table 1. Size and Annual Growth Rate of Iran's Population between 1900 and 1996

Date	Population (in Millions)			Annual Growth Rate (%)		
	Total	Urban	Rural	Total	Urban	Rural
1900*	9.9	-	-	-	-	-
1926*	11.9	-	-	0.7	-	-
1946*	15.9	-	-	1.5	-	-
1956**	19.0	6.0	13.0	1.7	-	-
1966**	25.8	9.8	16.0	3.1	4.9	2.1
1976**	33.7	15.9	17.9	2.7	4.8	1.1
1986**	49.4	26.8	22.6	3.8	5.2	2.3
1991**	55.8	31.8	24.0	2.5	3.5	1.2
1996**	60.0	36.8	23.0	1.5	2.9	-0.7

* Estimated

** Census Results

Table 2. Total, Male and Female Population of Iran as Revealed by General Censuses Conducted in 1956-1996.

Area	Sex	1956	1966	1976	1986	1991	1996
<i>All Country</i>	Total	18,954,704	25,788,722	33,708,744	49,445,010	55,837,163	60,055,488
	Male	9,644,944	13,355,801	17,356,348	25,280,960	28,768,450	30,515,160
	Female	9,309,760	12,432,921	16,352,697	24,164,048	27,068,713	29,540,328
<i>Urban</i>	Total	5,953,563	9,794,246	15,854,680	26,844,560	31,836,598	36,817,788
	Male	3,070,149	5,096,654	8,291,451	13,769,617	16,435,244	18,805,024
	Female	2,883,414	4,697,592	7,563,229	13,074,944	15,401,354	18,012,766
<i>Rural</i>	Total	13,001,141	15,994,476	17,854,064	22,600,448	24,000,564	23,237,700
	Male	6,574,795	8,259,147	9,064,896	11,511,344	12,333,206	11,710,136
	Female	6,426,346	7,735,329	8,789,168	11,089,105	11,667,359	11,527,563

Source: Statistical Center of Iran, 1997

Table 3. Share (%) of the Main Age Groups of the Total Population of Iran 1956-1996.

Age Groups		1956	1966	1976	1986	1991	1996
<i>All Country</i>	0-14	42.2	46.1	44.5	45.5	44.3	39.5
	15-64	53.8	50.0	52.0	51.5	52.2	56.1
	65+	4.0	3.9	3.0	3.0	3.5	4.3
<i>Urban</i>	0-14	40.2	44.1	41.0	42.8	42.3	37.6
	15-64	56.3	52.4	55.7	54.2	54.4	58.4
	65+	3.5	3.5	3.3	3.0	3.3	4.0
<i>Rural</i>	0-14	43.1	47.4	47.7	48.6	46.9	42.6
	15-64	52.7	48.5	48.6	48.3	49.4	52.6
	65+	4.2	4.1	3.7	3.1	3.7	4.9

Table 4. Urban-Rural Composition of Total Population, 1956-2001.

Year	Population (Thousands)			Percent	Percent	Number of Cities
	Rural	Urban	Total	Rural	Urban	
1956	13001	5954	18955	68.6	31.4	199
1966	15994	9795	25789	62.1	37.9	271
1976	17854	15855	33709	53	47.0	373
1986	226	16845	49445	55.7	54.3	496
1991	24	31837	55837	43	57.0	612
1996	23236	36819	60055	38.7	61.3	747
2001*	23043	41863	64906	35.6	64.4	804

*As projected by the MPO, 2001.

Table 5a. Main Age Groups and Dependency Ratios of Iranian Population, 1956-2003

Year	Percent Aged				Dependency Ratios		
	0-14	15-64	65+	Prime Age* Group, 25-59	Total	Child	Elderly
1956	42.2	53.9	3.9	36.1	85	78	7
1966	46.1	50.2	3.7	32.3	99	92	7
1976	44.5	52.0	3.5	31.2	93	86	7
1986	45.5	51.4	3.1	30.1	94	88	6
1991	44.3	52.2	3.5	30.4	92	85	7
1996	39.5	56.1	4.4	33.3	78	70	8
2000	34.5	60.1	5.4	34.0	66	57	9
2002	28.5	66.3	5.2	37.6	51	43	8
2003	28.4	66.6	5.0	38.3	50	43	7

* Prime Working Age Group

Table 5b. Dependency Ratios by Urban/Rural Status of Population, 1956-1996.

<i>Age Groups</i>	<i>1956</i>	<i>1966</i>	<i>1976</i>	<i>1986</i>	<i>1991</i>	<i>1996</i>
<i>All Country (0-14)/(15-64)</i>	78.4	92.2	85.6	88.3	84.9	70.4
<i>65+/(15-64)</i>	7.4	7.8	5.8	5.8	6.7	7.7
<i>Total</i>	85.8	100.0	91.4	94.1	91.6	78.1
<i>Urban Areas (0-14)/(15-64)</i>	71.4	84.2	73.6	79.0	77.7	64.4
<i>65+/(15-64)</i>	6.2	6.7	5.9	5.5	6.1	6.8
<i>Total</i>	77.6	90.9	79.5	84.5	83.8	71.2
<i>Rural Areas (0-14)/(15-64)</i>	81.8	97.7	98.1	100.6	94.9	81.0
<i>65+/(15-64)</i>	8.0	8.4	7.6	6.4	7.5	9.3
<i>Total</i>	89.8	106.1	105.6	107.0	102.4	90.3

Table 6. Mean and Median Ages of Iranian Population by Sex and Residence, 1966-1996.

		1966		1976		1986		1991		1996	
		Mean	Median								
<i>All Country</i>	Total	22.2	16.9	22.4	17.4	21.7	17.0	22.1	17.6	24.0	19.4
	Male	22.4	16.9	22.6	17.1	21.9	17.0	22.4	17.7	24.2	19.4
	Female	22.0	17.1	22.2	17.7	21.6	17.0	21.9	17.5	23.9	19.5
<i>Urban</i>	Male	22.6	18.0	23.0	18.7	22.3	18.4	23.0	19.0	24.7	20.5
	Female	22.2	17.5	22.8	18.6	22.1	18.3	22.3	18.6	24.4	20.4
<i>Rural</i>	Male	22.3	15.8	22.2	15.4	21.4	15.5	21.7	16.3	23.3	17.9
	Female	21.9	16.8	21.7	16.7	21.0	15.7	21.3	16.2	23.2	18.3

Table 7. Age Structure of the population enumerated between 1956-1996

Age Groups	1956	1966	1976	1986	1991	1996
	Number	Number	Number	Number	Number	Number
0-4	3,347,698	4,556,035	5,429,712	9,044,823	8,141,285	6,163,024
5-9	2,822,975	4,222,870	5,276,533	7,525,894	9,035,458	8,481,845
10-14	1,822,483	3,098,101	4,303,118	5,903,300	7,547,131	9,080,676
15-19	1,420,524	2,180,887	3,600,265	5,192,202	5,908,903	7,115,547
20-24	1,497,178	1,722,673	2,792,215	4,193,724	4,947,260	5,221,982
25-29	1,517,802	1,698,884	2,111,585	3,652,297	4,005,278	4,709,154
30-34	1,386,373	1,722,546	1,706,997	2,927,983	3,504,220	3,980,066
35-39	1,084,698	1,461,411	1,626,619	2,117,211	2,866,669	3,571,779
40-44	862,743	1,360,458	1,668,685	1,655,351	2,037,477	2,812,086
45-49	777,565	866,446	1,389,465	1,585,398	1,577,983	2,013,040
50-54	668,868	767,312	1,329,049	1,599,018	1,570,622	1,529,078
55-59	554,754	437,094	703,887	1,337,746	1,442,929	1,366,728
60-64	432,373	690,956	584,144	1,184,632	1,303,390	1,382,946
65-69	302,782	346,022	347,238	573,796	885,077	1,076,373
70-74	196,877	340,755	380,164	342,020	465,167	846,509
75-79	117,254	104,177	204,097	209,530	185,993	364,118
80-84	64,760	105,182	145,678	183,587	139,781	146,470
85+	69,924	71,969	109,293	192,785	272,540	161,711
US	7,063	--	--	23,713	--	32,356
Total	18,954,704	25,788,722	33,708,744	49,445,010	55,837,163	60,055,488

Table 8 Age Structure (in percentages) of the population enumerated between 1956-1996

Age Groups	1956	1966	1976	1986	1991	1996
	Percent	Percent	Percent	Percent	Percent	Percent
0-4	17.7	17.7	16.11	18.29	14.58	10.26
5-9	14.9	16.4	15.65	15.22	16.18	14.12
10-14	9.6	12.0	12.77	11.94	13.52	15.12
15-19	7.5	8.4	10.68	10.50	10.58	11.85
20-24	7.9	6.7	8.28	8.48	8.86	8.70
25-29	8.0	6.6	6.26	7.39	7.17	7.84
30-34	7.3	6.7	5.06	5.92	6.28	6.63
35-39	5.7	5.7	4.83	4.28	5.13	5.95
40-44	4.6	5.3	4.95	3.35	3.65	4.68
45-49	4.1	3.3	4.12	3.21	2.83	3.35
50-54	3.5	3.0	3.94	3.23	2.81	2.55
55-59	2.9	1.7	2.09	2.71	2.58	2.28
60-64	2.3	2.7	1.73	2.40	2.33	2.30
65-69	1.6	1.3	1.03	1.16	1.59	1.79
70-74	1.0	1.3	1.13	0.69	0.83	1.41
75-79	0.6	0.4	0.61	0.42	0.33	0.61
80-84	0.3	0.4	0.43	0.37	0.25	0.24
85+	0.4	0.3	0.32	0.44	0.49	0.32
Total	100.00	100.00	100.00	100.00	100.00	100.00

Table 9. Fertility Indicators from DHSI 2000 Compared with Measures Derived from Earlier Censuses and the Most Recent SCI Survey (1998/9).

<i>Date</i>	<i>Area</i>	<i>Crude Birth Rate</i>	<i>General Fertility Rate</i>	<i>Total Fertility Rate</i>	<i>Gross Reproduction Rate</i>
1973-6	<i>Total</i>	<i>42.90</i>	<i>200.00</i>	<i>6.60</i>	<i>na</i>
	<i>Urban</i>	<i>31.80</i>	<i>140.00</i>	<i>4.50</i>	<i>na</i>
	<i>Rural</i>	<i>50.10</i>	<i>242.00</i>	<i>8.10</i>	<i>na</i>
1986	<i>Total</i>	<i>49.60</i>	<i>204.00</i>	<i>7.10</i>	<i>na</i>
	<i>Urban</i>	<i>38.00</i>	<i>169.00</i>	<i>5.90</i>	<i>na</i>
	<i>Rural</i>	<i>51.20</i>	<i>257.00</i>	<i>9.00</i>	<i>na</i>
1991	<i>Total</i>	<i>30.60</i>	<i>140.00</i>	<i>4.90</i>	<i>2.40</i>
	<i>Urban</i>	<i>27.90</i>	<i>121.70</i>	<i>4.30</i>	<i>2.10</i>
	<i>Rural</i>	<i>34.10</i>	<i>166.90</i>	<i>5.80</i>	<i>2.90</i>
1996	<i>Total</i>	<i>20.50</i>	<i>84.00</i>	<i>2.96</i>	<i>1.44</i>
	<i>Urban</i>	<i>18.70</i>	<i>74.00</i>	<i>2.60</i>	<i>1.27</i>
	<i>Rural</i>	<i>23.40</i>	<i>117.00</i>	<i>4.10</i>	<i>2.00</i>
1998	<i>Total</i>	<i>16.3</i>	<i>63.32</i>	<i>2.05</i>	<i>na</i>
	<i>Urban</i>	<i>15.6</i>	<i>57.94</i>	<i>1.88</i>	<i>na</i>
	<i>Rural</i>	<i>17.6</i>	<i>72.64</i>	<i>2.38</i>	<i>na</i>
2000	<i>Total</i>	<i>16.3</i>	<i>61.0</i>	<i>2.00</i>	<i>na</i>
	<i>Urban</i>	<i>15.2</i>	<i>54.7</i>	<i>1.79</i>	<i>na</i>
	<i>Rural</i>	<i>18.4</i>	<i>72.6</i>	<i>2.39</i>	<i>na</i>

Source: Data for 1986-1996, Statistical Center of Iran, 1998 (Table 10-2); Data for 1998, SCI, 1999; Data for 2000, MOHME, 2001.

Table 10. Age-specific Fertility Rates and Other Fertility Indicators For Urban and Rural Areas of Iran (DHSI, 2000).

Age Groups	Urban	Rural	All
10-14	0.3	0.3	0.3
15-19	23.9	32.1	26.8
20-24	89.8	114.7	98.7
25-29	112.8	139.9	122.5
30-34	83.0	97.7	88.2
35-39	37.2	59.2	45.0
40-44	10.4	22.7	14.8
45-49	1.4	6.3	3.2
Number of Live births	4239	5072	9311
Total Fertility Rate	1.79	2.39	2.00
General Fertility Rate	54.7	72.6	61.0
Crude Birth Rate	15.2	18.4	16.3
CWR1 (C0-4/W15-49)	287	361	324
CWR2 (C5-9/W20-54)	483	625	554

Table 11. Mean Age at First Marriage of Iranian Men and Women, 1956-1996.

Year	Age at First Marriage					
	Female			Male		
	Total	Urban	Rural	Total	Urban	Rural
1956	18.6	---	---	25.5	---	---
1966	18.4	19.0	17.9	25.0	25.6	24.4
1976	19.7	20.2	19.1	24.1	25.1	22.7
1986	19.9	20.0	19.6	23.6	24.2	22.6
1991	20.9	21.0	20.8	24.6	24.9	23.5
1996	22.4	22.5	22.3	25.6	26.2	24.5

Table 12. Proportion Ever-married of Age Groups 15-19 and 20-24, by Sex and Place of Residence, 1956-1996.

Sex and Year	Proportions Ever Married, 15-19			Proportions Ever Married, 20-24		
	Combined	Urban	Rural	Combined	Urban	Rural
<i>Female</i>						
1956	41.0	35.5	45.3	84.3	83.5	86.0
1966	46.8	40.8	51.2	86.7	82.1	89.9
1976	34.1	30.1	38.3	78.6	73.9	83.6
1986	36.8	36.6	36.9	74.6	73.4	76.4
1991	25.6	24.9	26.4	67.1	66.9	67.5
1996	17.7	16.2	20.0	66.1	66.8	59.2
<i>Male</i>						
1956	6.3	1.9	8.9	32.6	23.6	39.0
1966	5.7	3.4	7.6	31.8	24.1	39.8
1976	6.6	3.6	10.4	39.5	30.2	52.8
1986	9.7	8.2	11.6	42.9	37.6	50.7
1991	5.3	4.3	6.3	33.2	29.0	39.0
1996	2.5	1.9	3.5	27.2	23.2	33.4

Table 13. Changes in Literacy Rates of Iranian Population, 1956-1996.

Year	Both Sexes			Males			Females		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1956	14.9	33.3	6.0	22.2	45.2	10.8	14.9	20.6	1.0
1966	29.4	50.4	15.1	40.1	61.5	25.4	17.9	38.3	4.3
1976	47.5	65.5	30.6	58.8	74.4	43.6	35.6	55.7	17.4
1986	61.7	73.2	48.7	71.0	80.5	60.1	51.0	65.2	36.0
1991	74.1	81.9	63.7	80.6	86.7	72.6	67.1	76.8	54.2
1996	79.5	85.7	69.6	84.7	89.6	76.7	74.2	81.7	62.4

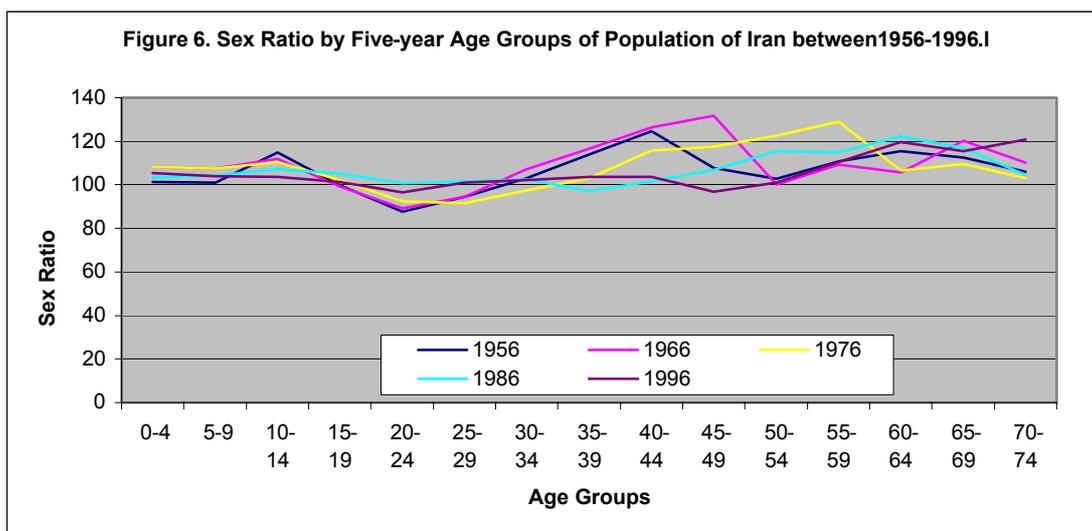


Table 14 Estimated Birth, Death and Natural Increase Rates of Iranian Population, 1901-1991 (Adapted from Source: Amani, M., Jamiyat, 1995, Numbers 13-14, Pp. 71-83 (in Persian)).

Period	CBR	CDR	NGR
1901-1906	40.0	35.7	4.27
1921-1926	40.5	32.8	7.72
1941-1946	40.8	24.5	16.18
1946-1951	45.6	26.8	18.76
1951-1956	48.9	23.7	25.22
1956-1966	48.6	17.0	31.6
1966-1976	40.1	13.0	27.1
1976-1986	50.2	14.2	36.0
1976-1991	34.4	9.9	24.5

Table 15. Official Fertility Estimates for 1976-1996.

Date	Area	Crude Birth Rate	General Fertility Rate	Total Fertility Rate	Gross Reproduction Rate	Crude Death Rate	Life Expectancy At Birth	
							M	F
1973-6*	Total	42.90	200.00	6.60	na	11.50	57.63	57.4
	Urban	31.80	140.00	4.50	na	8.30	60.37	63.84
	Rural	50.10	242.00	8.10	na	13.9	56.44	54.03
1986	Total	49.60	204.00	7.10	na	10.36	58.48	59.33
	Urban	38.00	169.00	5.90	na	8.31	62.14	63.45
	Rural	51.20	257.00	9.00	na	12.96	54.11	54.75
1991	Total	30.60	140.00	4.90	2.40	8.30	62.40	63.40
	Urban	27.90	121.70	4.30	2.10	6.66	65.51	66.61
	Rural	34.10	166.90	5.80	2.90	9.94	59.44	59.99
1996	Total	20.50	84.00	2.96	1.44	5.5-6.5	67.00	69.80
	Urban	18.70	74.00	2.60	1.27	na	na	na
	Rural	23.40	117.00	4.10	2.00	na	na	na

Source: (SCI, 1998, Tables 10.1, 11.1 & 11.2)

Fig 7. Mean Age at First Marriage of Iranian Men & Women, 1956-1996.

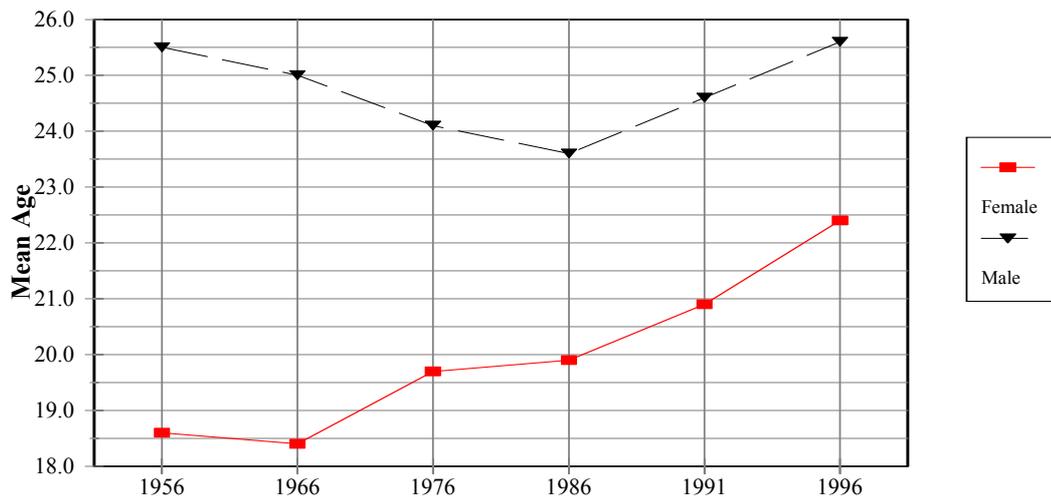


Table 6. Age Specific Fertility Rates of Iranian Women by Place of Residence, 1976-1996.

Date	Area	Age Groups						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49
1973-6	Total	146	327	303	230	186	95	38
	Urban	113	267	217	140	91	56	13
	Rural	171	372	360	289	255	121	56
1986	Total	130	302	322	287	224	126	39
	Urban	121	264	270	234	173	93	26
	Rural	141	359	404	365	298	173	54
1991	Total	47	213	278	219	146	64	14
	Urban	32	168	258	213	125	54	11
	Rural	150	310	276	217	140	52	15
1996	Total	54	135	132	104	89	56	21
	Urban	47	124	113	92	78	48	18
	Rural	65	155	182	156	133	94	34

Source: Statistical Center of Iran, 1998 (Table 10-2).

Table 7. Changes in crude birth rate in the Islamic Republic of Iran, 1966 -1996

Year	Total		Urban		Rural	
	Crude Birth rate (per 1000)	Decadal Change (per cent)	Crude Birth rate (per 1000)	Decadal Change (per cent)	Crude Birth rate (per 1000)	Decadal Change (per cent)
1966	49.0	-	45.0	-	52.0	-
1976	42.7	-12.9	32.7	-27.3	49.1	-5.6
1986	47.6	11.5	37.5	14.7	50.7	3.3
1991	38.2	-19.7	34.8	-7.2	45.2	-11.0
1996	26.0	-31.1	25.1	-28.1	33.1	-27.1

Source: Aghajanian & Mehryar, 1999b (2).