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SWINGS IN FERTILITY LIMITATION IN IRAN

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Introduction

The issue of the demographic transition has been one of the principle preoccupations of demographers during the last few decades. As mentioned by some scholars², the omnipresent differentials in the trends and determinants of the transition warrant separate and detailed studies in various regions and countries in order to obtain a better understanding of the issue. In this paper an attempt is made to elaborate on the recent trend of fertility and its determinants in the Islamic Republic of Iran. After a brief introduction to the general demographic characteristics of the country, a discussion is made on fertility limitations in the past and Islamic views on the issue of birth control. Subsequently, the swings in fertility limitation in the last three decades and the determinants of those swings are elaborated.

Demographic characteristics

According to the estimated figures, at the beginning of this century, the population of Iran was 10 million. Considering that the population at present is more than 60 million, the country's population has increased by six fold in less than a century. The growth rate of the population was not high during the first half of this century; hence the main increase in the population occurred during the last five decades. The average annual growth rates of the population of Iran during the first half and the second half of this century were 0.75 per cent and 3.0 per cent per annum, respectively. The population pressure in Iran has been further deepened by the influx of refugees during the 1980s. According to the various estimates, the country has between 2.5 and 4.5 million refugees, of whom more than 80 per cent came from Afghanistan. The proportion of

¹ The author thanks Prof. Gavin Jones and Prof. Peter McDonald for commenting on a draft of this paper.

² Scholars such as David Glass, Ansely Coale, John Caldwell, John Knodel, and Ettiene Van de Walle can be named among the pioneers who reconsidered demographic transition theory (see the attached selected bibliography).

people living in urban areas almost doubled during the last few decades, increasing from 32 per cent in 1956 to more than 60 per cent in 1996. Hence, internal migration has been an important factor in the redistribution of the population.

Estimates of basic demographic indices such as the number of population, population density, crude death rate, crude birth rate, infant mortality rate and expectation of life at birth for the period 1956-1996 are shown in Table 1. The rapid rise of population during the last half a century can be well inferred from Table 1. Mortality declined rapidly and continuously, whereas, as of 1986, fertility was still at a very high level and the country's total fertility rate was more than six children per woman. From 1988 onwards, there has been an appreciable decline in the level of fertility which will be discussed later.

Table 1. Estimates of demographic indices, I.R. of Iran, 1956-96

Year	Population (million)	Population per km ²	CBR	NIR	CDR	IMR	e0
1956	19	12	50	2.5	25	200	37.5
1966	26	16	46	3.0	16	165*	47.5
1976	34	20	42	2.8	14	112	56.0
1986	49	30	43	3.2	11	65	59.0
1991	56	34	34	2.7	7	50	63.0**
1996	60	36	25	2.0	5	35	67.0

* This estimate is for 1961

** The Statistical Centre of Iran's estimate.

Sources of the data:

Number of the population: Statistical Centre of Iran, population and housing censuses; NIR: annual rates of the intercensal natural increase; CDR: for each year is computed on the basis of CBR and NIR; IMR: 1956 figure from: Keyfitz, N., *World Population*, Chicago, 1968, P. 661, 1976 figure from: Statistical Centre of Iran, *Abridged life table for Iran, 1977*, figures for 1961, 1986, and 1991 are author's indirect estimates from the corresponding censuses; e0: Mirzaie, M., *Mortality and development; a conceptual framework*, *Journal of Social Sciences*, University of Tehran, Vol. 1, No. 1, 1989, p. 43; 1996 figures are estimates based on the preliminary results of the 1996 Census with some adjustments for fertility and mortality indices.

Note: The large refugee movement into Iran between 1976 and 1986 is excluded in the calculation of NIR for this period.

Fertility limitation in the past

Presumably, in a general sense, all societies favoured high fertility in the past (premodern era). Such an attitude was basically due to the prevalence of a very high mortality rate everywhere in the world. Whether there was any intentional birth control

among the populations in the past is a question which has preoccupied some scholars. There is a general and plausible view that, because of the very low rate of population growth which prevailed in the past, there were no social and economic grounds for intentional fertility limitation. All religions were in favour of marriage and procreation. Up to the time of Malthus, there were no direct and explicit objections to the growth rate of population from social and economic points of view. Nevertheless, it is naive to think that contraception was not practised in the past. Knowledge about contraception was available in ancient times and in the pre-modern era. There are firm grounds for the sanction of contraception in Islamic jurisprudence from the birth of Islam, which allowed *coitus interruptus* to be practised in Islamic societies.

Bassim Musallam in his in-depth research on contraception and birth control in premodern populations concludes that contraception was permitted in Islam. In his words:

Medieval Arabic discussion of contraception and abortion in Islamic jurisprudence, medicine, materia medica, belles lettres, erotica, and popular literature show that birth control was sanctioned by Islamic law and opinion. The sanction had wide distribution and was articulated in terms of social, economic, personal and medical needs.³

Almost all those religious leaders who were of sufficiently high status to issue sanctions (fatwa), whether from Shii or Sunni schools of law, have allowed the use of contraception.

Considering the favourable attitudes of Islamic culture towards contraception, and, that the sanction of *coitus interruptus* for birth control was a fact of Islamic law, the practice of birth control by traditional methods in pre-modern times in Iran cannot be ruled out. However, until the last decade, the level of fertility in Iran was quite high by modern standards. The total fertility rate was as high as 7 up to 1966 which is the date of the introduction of modern family planning programs in Iran. Considering the universality of marriage and the low age at marriage prevailing in the country, a magnitude higher than 7 for the total fertility rate can be expected under a natural

³ Musallam, B., F., *Sex and society in Islam; Birth control before the nineteenth century*, Cambridge University Press, 1983, p. vii.

fertility regime. With a total fertility rate of 7, assuming an average of 20 years of marital fecund life for each women, the mean birth interval becomes 3 years.

An average birth interval of three years might be considered as an indication of the practice of traditional methods of contraception to some extent. Breastfeeding for as long as two years was very common, and that can account for a motivation to postpone the subsequent pregnancy to a period after the completion of breastfeeding. There are indications that coitus interruptus was practised during the period of breastfeeding. Concubinage is allowed in Islamic jurisprudence and that, also, can account for birth control motivations. Very often, men preferred not to have children from concubines for social and economic reasons.

However, there are no statistics on the extent of the practice of birth control before the introduction of modern family planning programs. All we know is the legitimacy of contraception according to the Islamic law and that factors such as prolonged breastfeeding and concubinage could motivate couples to benefit from that legitimacy. Also we know that, historically, coitus interruptus has been the most commonly used method of contraception. Basim Musallam argues that the experience of coitus interruptus sustained the Islamic sanction of contraception. In his words:

It was the medieval experience of this particular method of birth control that sustained the general Islamic permission of contraception and, at the same time, coitus interruptus was also the source of the legal problems which Muslim jurists faced in their justification of contraception.⁴

Recent swings in fertility limitation

Rapid and continuous decline in mortality resulted in a rapid increase in the population of Iran during the last 50 years. The average annual growth rate of population during this period has been 3 per cent. Up to the mid-1960s there were no explicit government policies with regard to reduction of fertility, though it is possible that by that time a marginal proportion of more educated people were intentionally controlling their fertility. When, for the first time, the issue of government intervention in the

⁴ Ibid., p28.

reduction of fertility was raised in the general assembly of the United Nations in 1962, Iran was among the countries which voted against such interventions. Out of 97 countries participating in that session, the number of countries which voted for, against and were indifferent about the motion were 32, 30, and 35 respectively.⁵ Thus it becomes clear that by 1962 the general attitude of the Iranian government towards population was populationist and pronatalist.

1967-1978: Onset of the family planning programs

The pronatalist views mentioned above did not last long and, surprisingly, a few years later the position of the Iranian government totally changed. In 1966, an under secretary for family planning was appointed in the Ministry of Health, and the governmental family planning program commenced in 1967. Also, in 1967, Iran joined 29 other countries in signing a declaration on population, which was presented to the United Nations Secretary General. Here, the question which comes to mind is what happened during the five years between 1962 and 1967 which resulted in such a drastic change in government policy? Among other things, it seems that an average annual rate of population growth of 3 per cent between 1956 and 1966, which was declared after the second Iranian census in 1966, was an important factor in the shift of government policy. Thus, the year 1967 can be considered as the onset of the modern family planning programs in Iran. Also, this date can be considered as the beginning of direct government intervention in the reduction of fertility in order to moderate the high population growth rate which prevailed in the country.

The family planning program was in place until the Islamic Revolution in 1978. In 1972, the Director General of Family Planning declared that “the over-all goal of the family planning program over the next five years (that is by the end of the fifth five-year plan in 1978) is to reduce the present fertility rate of 48 per thousand to 40 per thousand. In order to accomplish this, the program will have to provide contraceptive services to 3.6 million women and avert approximately 1 million births.”⁶

⁵ Sauvy, A. Malthus et les deux Marx; le probleme de la faim et de la guerre dans la monde, Paris, 1963, pp. 185-187.

⁶ Ali-Asghar Zahedi, The Iran Family Planning Program, in, Population Strategy in Asia, United Nations, 1974, p. 315

Table 2. Fertility indices, I. R. of Iran, 1956-1991

Year	CBR	TFR	GFR	CWR1	CWR2	MAFM*
1956	50.2	7.2	227	.794	.732	18.0
1966	45.7	7.0	220	.851	.910	18.4
1976	41.8	6.3	190	.733	.844	19.7
1986	43.3	6.5	205	.865	.860	20.0
1991	33.7	4.7	155	.668	.896	21.0
1996	22.6	2.9	93	.420	.714	

*Women's mean age at first marriage.

Note: The figures of this table are estimated by non-conventional methods, using raw population census data of the consecutive Iranian censuses. The PAS (population analysis spreadsheet) computer package was used for the computation of CBR, TFR, and GFR. CWR1 is computed from dividing 0-4 years old population by females aged 15-49. CWR2 is computed from dividing 5-9 years old population by females aged 20-54. MAFM is computed by Hajnal method.

The third Iranian census of population and the first census after the introduction of the family planning program took place in 1976. There were indications of a minor reduction in fertility according to the census data, especially for the years immediately before the census. Such indications are apparent from the various fertility indices shown in Table 2, such as the crude birth rate, total fertility rate, general fertility rate, child women ratio⁷, and women's mean age at first marriage. Although there was a minor reduction in fertility by 1976, the extent of the reduction and, by implication, the extent of the success of the family planning programs in the first decade of its implementation was not as had been expected. A review of the implementation of the family planning program conceived in 1967 indicates that the major emphasis of the program was on the training of medical and paramedical personnel and clinic services. A lesser emphasis was placed on understanding and solving the cultural, social, and economic barriers to birth control. Such negligence can be considered a major shortcoming of the pre-Islamic revolution's family planning programs.

1978-1988: Post Islamic Revolution recession

After the Islamic revolution, the family planning programs came to a halt for almost a decade. During this period a pro-natalist atmosphere again prevailed and the fertility indices increased (Table 2). Political, social, and economic changes resulting from the

⁷ Although the child women ratio is a proxy measure and a rough estimation of the fertility level, at some points it gives indications which can be useful. For instance in Table 2, the reduction in fertility during the years immediately before 1976 and, also, 1991 censuses can be inferred from CARL. Interestingly, CWR2 which implies the fertility situation during 5-9 years before the census does not show a declining trend in 1976 and 1991.

Islamic revolution brought about behavioral changes of which the rise of fertility was one consequence.

Among the most important factors in the rise of fertility in Iran during the 1980's were; 1) abolition of the rules regarding the minimum age at marriage, a tendency to get married at an earlier age, and a rise in the rate of marriages⁸, 2) introduction of laws and regulations in favour of high fertility which encouraged families, especially those poor and desperate, to have more children⁹, 3) expectations that the revolutionary government would provide for children's needs, especially for their nutrition, health, and education, and 4) the imposed war and its social and psychological impacts on demographic behaviour.

1988 onwards: Renovation of the family planning programs

The fourth consecutive Iranian census and the first one after the Islamic revolution was conducted in 1986. The primary results of the census showed that the population of the country was about 50 million, and it was expanding with an unprecedented annual natural increase rate of 3.2 per cent.¹⁰ Such a trend resulted in a fear about the future of population growth. Growing concerns among the government and planning authorities about the high and unprecedented rate of population growth resulted in nationwide actions towards its moderation. Putting an end to the imposed eight years war brought about a more favourable ground for such actions in 1988.

The Plan and Budget Organization with the assistance of academicians organized a nationwide conference in the city of Mashad in September 1988 which brought the issue of population problems to the fore. This pioneering conference was followed by

⁸ According to the Statistical Centre of Iran's figures, the crude marriage rate rose from 5 per thousand in the immediate years before the revolution to more than 8 per thousand in the years immediately after the revolution. (Statistical Centre of Iran, Statistical Yearbooks.) There are indications that in the early 1980's, that is, in the first few years after the revolution, fertility increased rapidly and reached a peak, after which it reduced to a minor extent up to 1988.

⁹ During the war period, the basic needs were rationed on the basis of the number of members of each family, without any qualifications. This system of rationing allowed more shares and more coupons to the large families. A newly born child was not in need of many goods, such as meat, rice, sugar, cooking oil, etc., at least during the breastfeeding period which, very often, takes as long as two years; yet this child was eligible for coupons right after his or her birth. Thus, by having more children, families could get more coupons. Selling coupons to opportunists became a way of making money for poor and desperate families.

¹⁰ Due to the huge influx of refugees from Afghanistan and Iraq between 1976 and 1986, the average annual rate of intercensal population growth was 3.97 per cent from which, 3.2 per cent related to natural increase and 0.8 per cent to the migration of the refugees.

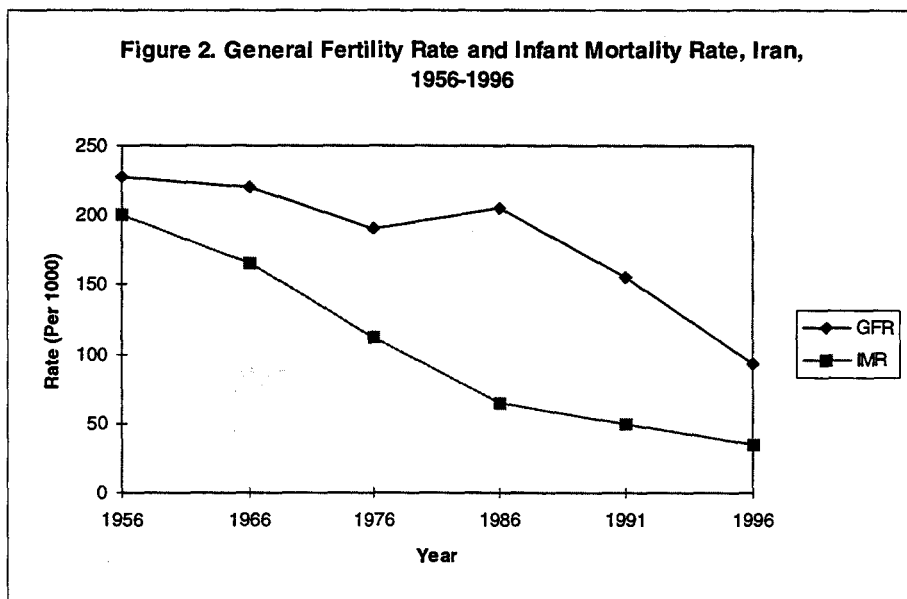
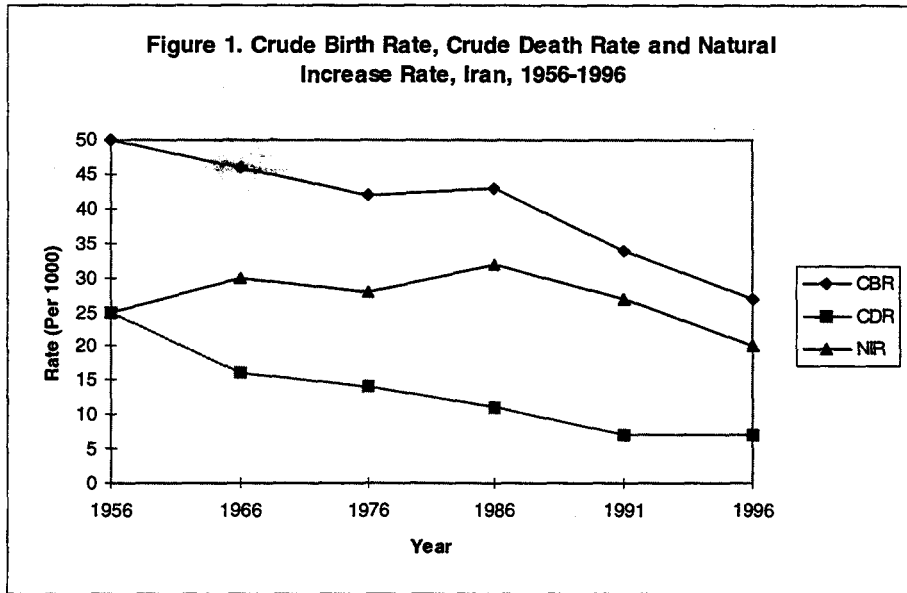
several other seminars, and the discussion of the consequences of rapid population growth occupied prime time on radio and T.V. programs. The country was at a social and economic threshold which meant that exposing the issues in these ways worked very well. After learning more and getting a better understanding about the consequences of rapid population growth, many people who were hesitating and undecided about the necessity of reducing the population growth rate became convinced and took a favourable position. Also, the government constituted a population committee in 1988 with representatives from the related ministries and institutions. The commitment of the government to reduce the population growth rate is reflected in the strategies adopted in the First Development Plan after the Islamic revolution(1988-93). Since the beginning of the plan, the family planning program was incorporated into the Primary Health Care system. Also, a new Office of Population and Family Planning was established in the Ministry of Health and Medical Education in 1988.

The results of the 1991 Census indicated that fertility had reduced substantially. Fertility indices for the year 1991 (Table 2) clearly show, by that date, the country had reached the take-off of its fertility transition. The support and commitment of the government to further moderate the population growth rate continued in the Second Development Plan (1993-98) and the reduction of fertility continued during the 1990s.¹¹ The more recent figures declared by Iranian authorities indicate that the crude birth rate has reached a level well below 30 per thousand.¹² After several decades of very high population growth which resulted from the high fertility and rapidly declining mortality, finally, a rapid fertility decline took its turn in the context of social and economic development. Such a drastic decline in fertility makes the last decade a turning point in the history of Iran's demographic transition. Trends in the annual rate

¹¹ Had it not been for the post Islamic revolution's pronatalist atmosphere, presumably, fertility would have continued to decline during the period 1978-1988. Therefore, although actions on the moderation of the population growth rate were reinforced after 1988 the huge reduction in fertility during the 1990s should not be totally attributed to the programs conducted in that particular decade; what happened was the resumption of the trend of fertility which had been reversed for a decade as a result of the Islamic revolution. Hence, some credit should be given to the previous actions (before 1988) for the remarkable decline of fertility during the 1990s.

¹² ESCAP, "I. R. of Iran's report to the fifty third session of the ESCAP", Population Headlines, No. 257, March-April 1997, p. 7.

of natural increase and its two component measures, that is, the crude birth rate and the crude death rate for the period 1956-1996 are shown in Figure 1.



Determinants of recent fertility decline

The reduction of fertility is an outcome of social and economic development. Although there is general agreement about this assessment, it is very general and needs clarifications. In what follows, an attempt is made to elaborate on a number of factors which contributed to the reduction of fertility in the Islamic Republic of Iran, namely, reduction in the infant mortality rate, rise in the relative cost of children, increase in the literacy and urbanization rates, public awareness about the population problems, and a government family planning program which is legitimised by the religious authorities and is supported by international organizations.

Rapid decline in the infant mortality rate

Even as of 1976, the infant mortality rate was well above 100 per thousand, whereas by now it is well below 50 per thousand (Table 1). The fact that the infant mortality rate reduced to less than half during the last two decades has been very important in convincing families that more children are surviving and they can reach their desired number of children with a lower level of fertility.¹³ Figure 2 shows the trend of the infant mortality rate and a fertility index, namely, the general fertility rate for the period 1956-1996. As can be seen, the continuous decline in mortality is associated with a subsequent decline in fertility. Drastic decline in the infant mortality rate in Iran has been an outcome of more emphasis on rural development in the post-revolutionary era. Provision of primary sanitary measures such as access to safe water (see Table 3), especially in remote and disadvantaged areas and an emphasis on preventive health were essential in the reduction of infant Mortality.¹⁴

¹³ Using Easterlin's fertility framework terminology, the supply of children (C_n) exceeds the demand for children (C_d); hence, motivation for fertility limitation. (Easterlin, R., "An economic framework for fertility analysis", *Studies in Family Planning*, The Population Council, Vol. 6, No. 3, March 1975, pp. 54-64.)

¹⁴ Immediately after the Islamic revolution, a popular movement for the reconstruction of the rural areas arose. Following this movement, a ministry entitled Ministry of Construction Jihad (campaign) was established to pursue rural development. This newly-born institution, which was fresh and not well bound with the sophisticated bureaucracy of old ministries, has made substantial contributions to rural development. Appreciable activities of the Ministry of Construction Jihad along with the preventive and curative health measures provided by Village Health Houses of the Ministry of Health were crucial in the reduction of infant mortality.

Rise in the relative cost of children

Increasing attention to the quality of children and provision of health and better education for them, which was accompanied by a negative GNP growth rate and very high inflation rate, increased the relative cost of children substantially.¹⁵ This has reduced the number of children desired by families.

Increase in the literacy and urbanization rates

The rate of literacy and the proportion of population living in the urban areas were both below 50 per cent at the time of the Islamic revolution (Table 3). The extent of increase in both measures has been considerable during the last two decades.

The literacy rate increased to 75 per cent in 1991. According to the preliminary results of the 1996 census, the literacy rate has increased to the appreciable level of 85 per cent by now. The inverse relationship between the literacy rate and fertility has been documented in numerous studies in Iran and other countries.¹⁶ Such an inverse relationship has been more pronounced for countries undergoing their fertility transition, as is the case with Iran at the present time.

Table 3. Selected socio-economic characteristics, Iran, 1956-1996

Year	Literacy %	Urbanization %	% access to safe water	Contraceptive prevalence rate ^a
1956	15	32		
1966	30	39		
1976	48	47	35	36
1986	62	54		
1991	75	57	89	65
1996	85	61		

^a Percentage of currently married women using method.

Sources: Literacy and urbanization rates were computed from consecutive census data;

Access to safe water were taken from: UNICEF, *The State of World Children*, 1994.

¹⁵ For the period 1980-1991, the average annual GNP growth rate of the country was -1.3 per cent and its average annual rate of inflation was 14 per cent. (UNICEF, *The State of World Children*, 1994).

¹⁶ The followings are a few examples of fertility surveys, conducted in various parts of Iran, which indicated an inverse relationship between the literacy rate and fertility:

Amani, M., & Mirzaie, M., *The impact of literacy on fertility and family planning in Tehran and Isfahan*, Institute for Social Studies and Research, University of Tehran, 1971.

Amani, M., *Fertility in Tehran*, Institute for Social Studies and Research, University of Tehran, 1974.

Paydarfar, A., & Aghajanian, A., "Fertility in Fars Province", in *Proceedings of "Population Problems of Iran"* seminar, University of Isfahan, 1975.

Contraceptive prevalence rates: figure for 1976 is from Statistical Centre of Iran's Survey, and that for 1991 is from Ministry of Health and Medical Education's KAP Study.

The percentage of population living in urban areas increased to 54 per cent in 1986 and to 61 per cent in 1996. In Iran, like other countries of the world, fertility in urban areas has been lower than in rural areas.¹⁷ Thus, an increase in the rate of urbanization has had a reducing impact on fertility.

Public awareness about the population problems

As was mentioned before, after a decade of stagnation in dealing with the population problems, there was a radical shift in 1988. From then onwards, conferences and seminars were held and the issue of population problems was continuously raised in the mass media, several projects were conducted to find appropriate methods of including general population concepts in the school curriculum, and teaching of demography and population studies found a more receptive environment in universities and research institutions. All these contributed to an illumination of public awareness on population issues which resulted in actions towards fertility limitation.

Family planning programs

The post-revolution family planning program, which started from 1988, has been an integral part of development planning. Due to the close collaboration of the religious authorities with the government, the religious barriers to this program were much less than in the pre-revolution program. As a matter of fact, after the Islamic revolution, the state and religion were integrated and key governmental positions were held by religious authorities. This gave an inherent legitimacy to the program which could pursue its objectives smoothly. Another important factor, which contributed to the easing of financial barriers to the family planning program was international assistance especially that of the United Nations Fund for Population Activities. The contraceptive prevalence rate rose from 35 per cent in 1976, the peak rate for the pre-revolution family planning program, to 65 per cent in 1992 (Table 3) and it has been increasing

¹⁷ The magnitude of CWR2 index for index for urban and rural areas of Iran during the 1986-1996 period was as follows.

	1986	1991	1996
Urban areas	.752	.817	.638
Rural areas	1.008	1.019	.851

The measures indicate that fertility in the urban areas has been appreciably lower than the rural areas.

since then. Such a rise in the contraceptive prevalence rate can be considered as a sign of the success of the recent family planning program.

Conclusion

The rapid and continuous mortality decline which was accompanied by a high level of fertility resulted in a very rapid and unprecedented population growth in Iran during the last half a century. During this period, the average annual rate of population growth was three per cent and, hence, the population increased four fold.

It is clear that birth control was sanctioned in Islamic law from the early years of Islam. Thus, the possibility of the use of the traditional methods of birth control in the premodern era in Iran cannot be ruled out. Prevalence of prolonged breastfeeding and concubinage were among the factors in motivating concerned couples to benefit from the legitimacy of birth control. Nevertheless, as of 1986, the total fertility rate was still more than six in Iran, which is in the pre-fertility- transitional order of magnitude.

After declaration of a pronatalist view in the general assembly of the United Nations in the early 1960s, towards the end of the same decade, the view of the government of Iran totally changed and the governmental family planning program commenced in 1967. Although, according to the 1976 census, there were indications of a minor reduction in fertility, the extent of the reduction was not as much as had been planned. After the Islamic revolution in 1979, again, a pronatalist atmosphere prevailed and the governmental family planning program came to a halt for almost a decade. The experience of an unprecedented annual growth rate of population of four per cent for the 1976-1986 intercensal period was the consequence of such an atmosphere, supplemented by a refugee influx. By 1987, a fear was developing about the future of population growth in the country, which was followed by the abolition of the pronatalist views and resumption of the governmental family planning program in 1988. Such an abrupt change in views and policy resulted in a dramatic reduction in fertility during the 1990's. Rapid decline in the infant mortality rate, rise in the relative cost of children, increase in the literacy and urbanization rates, public awareness about the population problems, and, finally, a newly revived family planning program which is legitimized by the religious authorities and is supported by international

organizations were the factors which contributed to the reduction of fertility in Iran during the last decade.

Although there is some discussion and uncertainty about the fertility measures and figures reported by various organizations, there is no doubt that the country is undergoing a rapid fertility transition.

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