# Revolution, War and Modernization: Population Policy and Fertility Change in Iran*

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## Introduction

The key periods of demographic change in Iran in recent times have been the onset of modest fertility decline, mainly in urban areas, in the early 1970s, a resurgence in fertility rates from 1976 to 1986, and the renewed onset of fertility decline since 1988 (Aghajanian and Mehryar 1999; Abbasi-Shavazi 2000b). These changes coincide rather neatly with three political periods: the later stages of the Shah's regime; the Islamic Revolution and the war against Iraq; and a subsequent period of renewed modernization and pragmatism. There appears, then, to be a relationship between the dramatic political events and fertility trends. The obvious linkage would be the shifts in population policy that took place over the period: antinatalism and a government-sponsored family planning program in the later stages of the Shah's regime; denunciation of family planning and encouragement of early marriage in the post-Revolutionary period; and a pragmatic return to antinatalism in the post-1988 period.

Fertility has declined dramatically since the adoption of a new population policy in 1988. This rapid decline was greeted with incredulity for some time by many overseas observers. The reason was that much of the world was unaware that in the period following the Islamic Revolution, social change consisted not only of a retreat into traditionalism and anti-Western feeling, as symbolized by the enforced adoption of the *chador* by women, but also of widened educational opportunities for girls, improved public health services, increased urbanization and other trends much more favorable to lowered fertility (Hoodfar and Assadpour 2000). This article aims to present an interpretation of Iran's recent demographic history, setting it in the context of the country's turbulent political history.

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## Historical background

Until the late 1940s, Iran's population had grown at a very low rate. This was despite the fact that Iran's traditionally pronatalist culture (which emphasized early and universal marriage as a social and religious value) as well as prevailing health and social conditions (high infant mortality and dependence of parents on children as the main source of old-age support) provided a favorable environment for high fertility. In this period, mortality was high enough to offset the high fertility and keep the rate of population growth at a very low level.

The first national census of population and housing conducted in 1956 revealed a population of 18.9 million (as compared with an estimated figure of about 10 million in 1900) with an estimated TFR of 7.3 births per woman and an average annual growth rate of 1.74 per cent (Amani 1968; Maroufi Bozorgi 1967). Ten years later, according to the 1966 Census, the size of the Iranian population had risen to about 25.8 million which implied an estimated TFR of 7.7 and an average intercensal growth rate of 3.1 per cent per year (Bulatao and Richardson 1994). Partly in response to this heightened growth rate, the government of Iran adopted a population policy with explicit health and demographic targets. A national family planning program was officially inaugurated in 1967 and the Ministry of Health was given the responsibility for controlling the birth rate.

The impact of this policy change was partly reflected in the results of the third national census taken in 1976 which revealed a population size of 33.7 million and an average annual intercensal growth rate of 2.7 per cent. The TFR estimates derived from the 1976 Census vary from as high as 6.8 (PBO 1993) to 5.5 (Zanjani 1992). A carefully designed Population Growth Estimation study conducted a few years earlier (1973-1976) had revealed a TFR of 6.3 which had not changed by the time the Iran Fertility Survey was conducted in 1977 (Aghajanian 1991).

## Population policy shifts after the revolution

### *Adoption of pronatalist ideology and suspension of the family planning program*

Shortly after the Islamic Revolution in early 1979, the family planning program was suspended. In contrast to the previous regime, high fertility and rapid population growth were looked upon favorably. Religious leaders emphasized marriage and family formation as basic Islamic virtues, and the government was urged to adopt economic policies that would facilitate and encourage early and universal marriage.

Simultaneously, grassroots charitable foundations that had emerged in the wake of the Revolution offered tangible economic rewards, in the form of relatively generous wedding gifts or dowries, for early marriage and family formation. Despite this drastic change in emphasis, the Ministry of Health kept the family planning program alive by obtaining *fatwas* regarding the permissibility of contraceptive use from Imam Khomeini and several other leading Ayatollahs (Mehryar, forthcoming).

With the start of the eight-year war with Iraq in September 1980, high fertility and population growth acquired new significance. Population size immediately began to be considered as a matter of comparative advantage. The creation of a popular "Twenty Million Man Army" was adopted as a national slogan early in the war. On a more personal level, the rising casualties of the war encouraged many middle-aged couples to produce more children to replace those whose loss they were anticipating. The universal rationing system that was introduced as a means of ensuring equal access to basic necessities provided further impetus for high fertility. The rationing system included not only basic food items but also locally produced or imported modern consumer goods like television sets, refrigerators, carpets and even cars. These were distributed on a per capita basis and larger families were entitled to a better share of both the basic commodities and highly prized modern consumer items. Thus, newborn babies were automatically entitled to a separate book of ration coupons which, in the case of ordinary families, was far above the costs involved in raising a child. As the issue of coupons was conditional on having a birth registration certificate, this led to a sudden increase in the coverage and timeliness of birth registration. The reverse may have happened with registration of deaths.

The demographic consequences of this pronatalist policy did not take long to become evident. The first general census of population and housing conducted by the IRI in 1986 indicated that the population of Iran had grown at an average annual rate of 3.9 per cent per year between 1976-1986. Even taking into account the effect of the immigration of Afghan and Iraqi refugees during this period, the natural growth rate was no less than 3.2 per cent. The 1986 Census indicated a TFR of 7.1 - 5.9 in urban and 9.0 in rural areas (SCI 1998). Other TFR estimates derived from the same census vary from as low as 6.4 (PBO 1989: 2-6) to 7.7 (Agha, 1989; Bulatao & Richardson 1994). The unexpectedly large population size (49.3 million) revealed by the 1986 Census was at first hailed as a "God-sent" gift by the Prime Minister and other leaders of the IRI.

***Return to an antinatal position and gradual revival of the family planning program***

Publication of the 1986 Census results focussed attention on the long-term economic and social implications of the high rate of fertility and population growth, and behind the scene discussions on the need for a population control policy were initiated. Two government departments are known to have played a major role in the initiation of this debate: the Ministry of Health (MOH) and the Plan and Budget Organization (PBO). The first had been responsible for the family planning program before the Revolution. Indeed, the first Minister of Health of the Islamic Republic of Iran (IRI) discussed the need for family planning with Imam Khomeini a few months after the Revolution and reportedly had secured his oral endorsement of contraceptive use by couples who did not want to have more children. As a result, the MOH had been allowed to continue with the provision of family planning services (including the free distribution of the three modern methods of contraception) to couples visiting its MCH clinics throughout the period when there was no official program. The Plan and Budget Organization, as the national agency responsible for the monitoring and allocation of the government's financial resources, was in a unique position to know the critical state of the war-shattered economy and its fast-dwindling ability to support a large and rapidly increasing population.

To raise public support for the idea of population control and family planning, a three- day "Population and Development" seminar jointly organized by the MOH and PBO was held in the city of Mashad in September 1988. The recommendations of this seminar explicitly called for the adoption of a national population policy aimed at birth control. At the end of the Mashad seminar, the Minister of Health and Medical Education, in a press conference, reiterated Imam Khomeini's *fatwa* regarding the legitimacy of contraceptive use by consenting couples, and announced that a family planning program would soon be established. Almost simultaneously, the prime minister declared that "birth control" was a "destiny factor" for Iran and invited Iranian women to prevent unwanted pregnancies by seeking help from publicly run clinics and rural health houses. To overcome any misconception regarding the legality of birth control, the head of the judiciary system publicly declared that the use of contraceptive methods for preventing unwanted pregnancies was not against Islamic criminal law.

Following the Mashad seminar, family planning was considered by a group of eminent clergy and religiously minded physicians attending a seminar on "Islamic

Perspectives in Medicine" organized by the Mashad University of Medical Sciences in February 1989. This was followed by another seminar explicitly dealing with "Islam and Population Policy" which was held in Esfahan in April 1989, and brought together a large number of eminent theologians and politically influential clergy. Most of the recommendations of the Mashad seminar were taken into consideration in the preparation of the First Five Year Development Plan (FFYDP). Thus, the idea and objectives of population control and family planning were given formal legislative endorsement when the FFYDP bill was approved by the Islamic Legislative Assembly (*Majlis*) in 1989. This was four years before the eventual enactment of the Family Planning Law of the IRI in 1993. The FFYDP had also set some relatively modest demographic targets for the newly established family planning program. These included reduction of the total fertility rate of Iranian women from 6.4 in 1986 to 4.0 by the year 2011 and decrease of the natural rate of growth of the population from 3.2 per cent to 3.05 per cent by the end of the Plan (1993) and to 2.3 per cent by the year 2011. To reach these goals, the coverage of public family planning services was to be extended to 24 per cent of eligible couples by the end of the FFYPD (PBO 1989: 2-6).

In line with the above mentioned goals, the Ministry of Health and Medical Education (MOHME) was given the mandate and the resources to provide free family planning services to all married couples, to promote small family size norms and to help individual couples keep their family size at a reasonably low level (2 to 3 children). Several other Ministries as well as the Islamic Republic of Iran Broadcasting Organization were required to closely cooperate with the Ministry of Health in promoting these objectives. A separate Population and Family Planning Directorate was set up within the MOHME in 1991 under the overall supervision of the Deputy Minister for Public Health whose office was also in charge of the primary health care and MCH services.

To further ensure the intersectoral cooperation needed, an interdepartmental Family Limitation Commission was set up by a cabinet decree passed in September 1990. Headed by the Minister of Health, the Commission was to include the Ministers of Health, Education, Higher Education, Labor and Social Affairs, National Guidance, and Plan and Budget as well as the head of the Civil Registration Organization of the Ministry of Interior. The main functions of the Commission were to "monitor, supervise and coordinate all government policies and activities bearing on the control of the population growth rate, to report on steps taken by member agencies, to make recommendations on the formation of a High Council on Family Planning and its

functions and membership, and to review proposals made for changing laws and regulations that may encourage or inhibit population growth". A remarkable feature of this decree is the attention it gave to such "beyond-family-planning" measures as the reduction of infant mortality, facilitation of women's education and employment, and extension of social security and retirement benefits to all parents so that they would not be motivated to produce a large number of children as a source of old-age security and support.

Most of these points were also incorporated into the Family Planning Law that had been prepared in 1989 but was finally ratified by the Parliament in May 1993. This law not only removed almost all economic incentives for high fertility and large families, but also provided the necessary statutory basis for the population control policy and family planning program envisaged as part of the First Five-Year Plan of Development initiated in 1989. The Parliamentary Bill concerning the Second Five-Year Development Plan of the IRI (SFYPD) passed in 1994 also reiterated the IRI government's commitment to population control and family planning.

***Immediate signs of a rise in contraceptive use***

Contrary to the pessimistic stance taken by the authors of the FFYDP (1989) and most other experts regarding the short-term effect of the new policy, almost immediately after the revival of the family planning program, there were signs of its effectiveness in both acceptability and its possible impact on fertility levels. A KAP survey carried out by the MOHME in 1989, that is, just after the program had commenced, revealed that almost half of married women aged 15-49 years were already using some form of contraception. Most of these (56 per cent) used such modern methods as the pill, condom, and IUD. A larger survey carried out in 1992 showed that contraceptive prevalence rates had risen to almost two-thirds of all married women, 69 per cent of whom used a modern method. These figures indicate a surprisingly high demand for and acceptance of family planning services when compared with the contraceptive prevalence rate (about 37 per cent) that had been achieved by the pre-Revolutionary family planning program by 1977, ten years after its formal introduction (Aghajanian 1991; Aghajanian & Mehryar 1999).

***Converging evidence of fertility decline***

With regard to actual fertility behavior, some evidence of a gradual decline in fertility rates had already been revealed by a 12-round household survey conducted by the SCI between 1987 and 1989 (Mehryar & Gholipour 1995). This trend was supported by the findings of the combined census/survey carried out in 1991 which showed that the Iranian population had risen to only 55.8 million since 1986. This figure implied an annual growth rate of 2.5 per cent for the period 1986-1991, a 64 per cent decline in comparison with the growth rate of 3.9 per cent revealed by the 1986 Census. Further analysis of the 1991 data indicated that the total fertility rate had declined from 7.1 to 4.9 during the preceding five years (SCI 1998: Table 10.1.), although other estimates of TFR implied by the 1991 census/survey range from 4.8 to 6.3 (Bulatao & Richardson 1994: Table 3). Judging by this evidence, the revived family planning program reached all of the demographic targets set for it in the FFYPD before the Plan had in fact been implemented.

Because of the unexpectedly sharp decline in the growth rate indicated by the 1991 census/survey and presumed anomalies in the age structure of the population enumerated, most demographers both within and outside Iran received these results with some skepticism. Even PBO (1993), the parent organization of the SCI, refused to accept the results of the 1991 census/survey as a basis for the projection of population trends during the period of the second plan (1993-1998).[1] However, large-scale annual population surveys conducted by SCI in 1992 and 1993 indicated a continuation of the downward trend revealed by the 1991 census/survey. These were supported by smaller scale, but nationally representative, surveys undertaken by the MOHME as well as a new set of panel surveys on the socioeconomic conditions of Iranian households conducted by the SCI between 1991 and 1995.

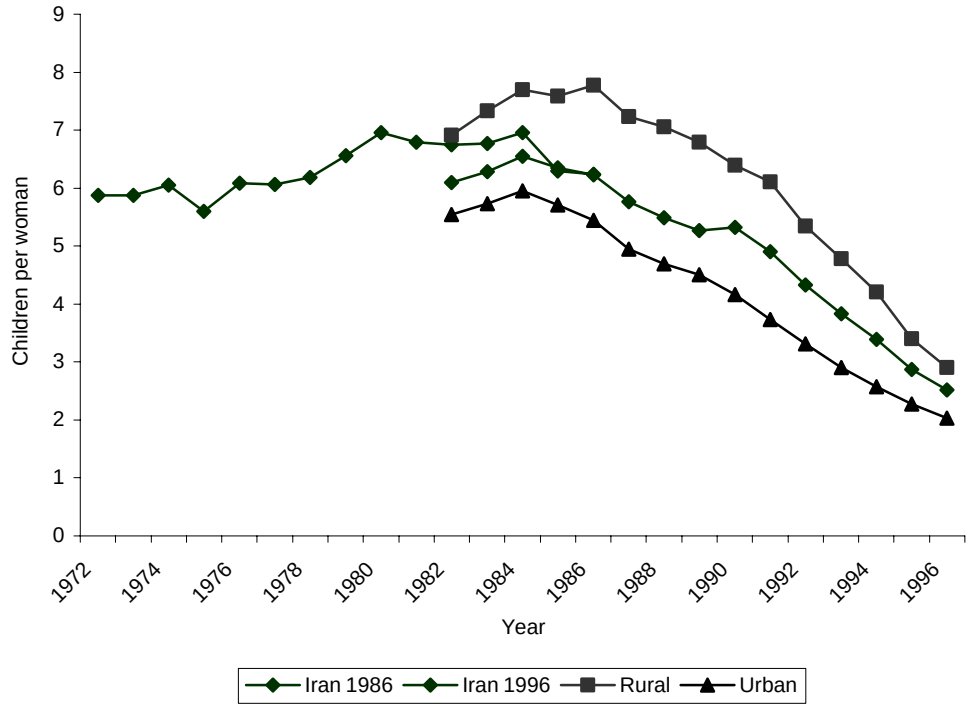
All these were received with more than the usual measure of caution, if not disbelief, by demographers outside the MOHME and the SCI. At the same time, evidence of an accelerating fall in the number of births registered by the CRO was not taken seriously even by the demographers working for that organization, presumably because of their known under-coverage. Using the number of officially registered births, Ladier-Fouladi (1996) has noted a marked drop (from 43.4 to 30.4 per thousand) in the crude birth rate of Iran between 1986 and 1991. The corresponding decline in total fertility estimates was from 6.2 to 4.2.

In view of the persistent doubts regarding the coverage and quality of the 1991 census/survey and later surveys conducted by the SCI and MOHME, the 1996 Census

had been anxiously awaited. The results of this census indicated an even more precipitous decline in fertility than the 1991 census/survey. Comparing the population enumerated in 1996 (just over 60 million) with the counts in 1986 and 1991 showed that the total population of Iran had grown at a rate of 2.46 per cent between 1986 and 1996 and at a rate of only 1.47 per cent since 1991. It became obvious that the drop in population growth rate between 1986 and 1996 was due to a sharp drop in fertility. This inference was clearly supported by the marked decline in the number of children aged 0-4 in the 1996 Census (6,163,024) compared with the size of the same age group enumerated in 1991 (8,141,285) and 1986 (9,044,823). The fertility indices officially calculated on the basis of the 1996 Census (TFR=2.96, CBR=20.5) are also indicative of a sharp decline. The TFR (2.96) for 1996 was only 42 per cent of that for 1986 (7.1) and 60 per cent of that for 1991 (4.9). The TFR revealed by the 1996 Census was only slightly higher than the TFR (2.6) revealed by the large-scale KAP survey conducted by the MOHME in 1996. The level of fertility was also very much in line with the high contraceptive prevalence rate indicated by this survey.

Applying the own-children method to the 1986 and 1996 Censuses, Abbasi-Shavazi (2000a) has analyzed the single-year fluctuation of fertility trends over the period 1972-1996 (Figure 1). From 1972-1979, the fertility rate rose from 5.8 to 6.5. There was little evidence in this period of any impact on fertility of the family planning program implemented by the Shah's regime. Following the Revolution, TFR was very high and fairly constant during the period from 1980 to 1984. As mentioned earlier, government policies of the IRI emphasized early marriage for young adults. The revolutionary slogans were also supportive of the poor, and people had a rather positive attitude towards the new government subsidies on family expenditure, particularly those on electricity, water, telephone, education and health. Consequently, Iranian couples had every reason to marry early and have more children while married.

**FIGURE 1. Own-children estimates of total fertility rates during 1972-1996, the Islamic Republic of Iran, by rural and urban areas**




Note: Figures estimated from the own-children data from the 1986 and 1996 censuses obtained from the Statistical Centre of Iran.

Source: Abbasi-Shavazi (2000a)

In the period from 1985 to 1989, the high fertility regime created by the Revolution faltered and fertility started to decline. TFR declined from its peak in 1984 to 6.2 in 1986 and further to around 5.3 in 1989. The decline was, however, slow until 1989 before it accelerated during the 1990s. It is worth noting that the fertility decline in urban areas started in 1985, while rural fertility began to decline two years later, in 1987. Finally, in the period from 1990 onwards, the transition accelerated. TFR fell sharply after 1989 dropping from 5.32 in 1990 and further to 2.69 in 1996, a 50 per cent decline in six years. This spectacular decline occurred in both rural and urban areas. In rural areas of Iran, TFR dropped from 7.7 in 1986 to 2.9 in 1996. TFRs for urban areas declined from 5.4 to 2.0 in the same period.

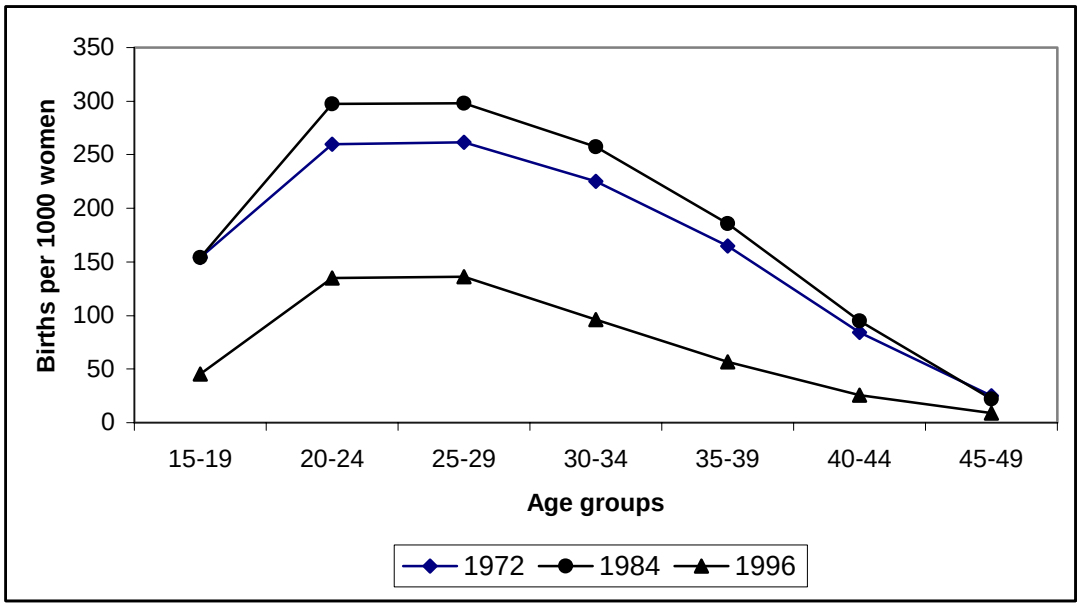
At the provincial level, the majority of provinces experienced a moderate rise in fertility during the period 1976-1986 (Abbasi-Shavazi 2000a). However, all provinces followed the national trend and experienced tremendous declines in the period 1986 to 1996. Generally speaking, TFR fell most significantly in those provinces where fertility was very high during the previous decade. These provinces

had had lower socio-economic characteristics compared to the country as a whole and other provinces. On the other hand, the absolute decline in TFR was lower in the more developed provinces such as Tehran and Gilan.

In sum, the dramatic decline in fertility in Iran from 1986 to 1996 was common to both urban and rural areas and to all provinces of Iran irrespective of their level of development.

Changes in Iran's age specific fertility rates are shown in Figure 2. Between 1972 and the peak of fertility in 1984, fertility rates rose by roughly equal proportions in every age group (except 15-19). Then, between 1984 and 1996, the rates fell substantially in every age group. Conventionally, during fertility transitions, fertility falls mainly at the younger or the older ages or both. The very substantial falls in fertility in the middle, peak ages of childbearing provide the explanation of why the fall in fertility in Iran from 1984 to 1996 was faster than any other recorded case. The steep fertility decline in all age groups suggests that later starting, increased spacing and earlier stopping of childbearing all occurred at the same time. This cross-sectional effect may have been a compensation for the very high fertility at all ages before 1986.

**FIGURE 2. ASFRs for Iranian women in 1972, 1984 and 1996**




**Source:** Figures estimated from the own-children data from the 1986 and 1996 censuses obtained from the Statistical Centre of Iran (Abbasi-Shavazi 2000a).

**The influence of changes in nuptiality and family planning usage**

***Nuptiality change***

Fertility transition in developing countries is often associated with an increase in age at marriage for women. This section describes changes in nuptiality in Iran in the period under consideration. Since 1979, the government of the IRI has consistently encouraged early marriage. The legal minimum age at marriage for girls was reduced from sixteen to nine years after the 1979 Islamic revolution. During the following decade, young couples received many incentives for early marriage. However, despite this wholehearted campaign for early marriage, age at first marriage increased slightly during this period (Table 1). After 1986, there was a profound change in marriage pattern. The singulate mean age at marriage increased from 19.7 to 22.1 years between 1986 and 1996.

The shift to much later marriage during the period 1986-1996 took place in both rural and urban areas. In rural areas, female singulate mean age at first marriage increased from 19.7 in 1986 to 22.1 in 1996, whereas in the urban areas the figure rose from 20.1 to 22.0 (Abbasi-Shavazi 2000b).

**TABLE 1, Female singulate mean age at marriage (SMAM) and age-specific proportions ever married, 1986 to 1996, the Islamic Republic of Iran**

| Year | SMAM | 15-19 | 20-24 | 25-29 |
|---|---|---|---|---|
| **1976** | ***19.52*** | 0.343 | 0.786 | 0.932 |
| **1986** | ***19.73*** | 0.335 | 0.796 | 0.906 |
| **1996** | ***22.09*** | 0.186 | 0.607 | 0.852 |

**Sources:** Calculated from published data from the 1976,1986 and 1996 Censuses, Statistical Centre of Iran.

Despite the increase in mean age at marriage, universality remains one of the major characteristics of the Iranian marriage pattern. Marriage is strongly supported by both religion and tradition in Iranian society. To get married is not only a matter of personal interest, but also a duty of the young to their families and to society. As a result, the majority of women marry before age 30, and almost all women marry by their early 40s. Although the proportion of ever-married women is slightly higher for rural women, the rural-urban difference is negligible.

The change in marriage pattern is consistent with other socioeconomic changes in the IRI over the last two decades. Economic pressure has been a major

factor in the postponement of marriage. It is asserted that age at marriage is late where the direct costs of marriage (both ceremonial and transfer costs) are high (Smith 1983: 496). Iran has been experiencing economic hardship since the revolution, particularly in the decade after the war. The cost of living has risen dramatically in recent years. In order to be able to afford the high living costs, young people tend to delay their marriage until they get a job.

***Fertility control through family planning***

The other major factor influencing fertility during a transition is the use of contraception. The total contraceptive prevalence rates of rural and urban segments of the population shown by two national surveys carried out since 1990 are summarized in Table 2. The table also includes the contraceptive prevalence rates for 1977 and 1989. These provide a good basis for comparing the impact of the family planning program three years after its inauguration with the contraceptive use rates that prevailed during the last years of the pre-Revolutionary period (1977, when there was an active family planning program) and shortly before the revival of the family planning program in 1989.

**TABLE 2. Contraceptive prevalence rates revealed by national KAP surveys conducted in Iran between 1976 and 1997**

| **Year/ Method** | **1976 Method Type** | | | **1989 Method Type** | | | **1992 Method Type** | | | **1997 Method Type** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | M | T | **All** | M | T | **All** | M | T | **All** | M | T | **All** |
| **Urban** | 34 | 21 | **54** | 33 | 31 | **64** | 47 | 27 | **74** | 55 | 23 | **78** |
| **Rural** | 15 | 5 | **20** | 21 | 10 | **31** | 41 | 10 | **51** | 57 | 9 | **66** |
| **Total** | **24** | **13** | **37** | **30** | **19** | **49** | **45** | **20** | **65** | **55** | **18** | **73** |

**Note:** Method type: M = Modern Methods; T = Traditional Method (Withdrawal)

Source: Aghajanian 1994 (for 1977 survey); Ministry of Health & Medical Education (1989, 1996, 1997) for 1989 and later surveys.

By 1992, almost two-thirds of married women aged 15-49 were practicing some form of contraception. The overall contraceptive prevalence level revealed by the 1992 survey (65 per cent) is almost twice the level of coverage (37 per cent) shown by the Iran Fertility Survey in 1977 which was ten years after the initiation of

the earlier family planning program by the old regime of Iran. Five years later, according to the 1997 KAP survey, the contraceptive prevalence rate had risen to almost 75 per cent. The rate for urban women in 1977 (53.8 percent) was almost two and half times that of rural women (19.9 percent). In contrast, the rural-urban difference in contraceptive prevalence in 1992 was only 23 percentage points. Five years later, the urban-rural gap had shrunk to 12 percentage points. This small advantage was mainly due to the fact that a much larger proportion of urban couples (23 per cent) compared with rural (9 per cent) reported using the traditional method of withdrawal which is not encouraged by the program.

The 1989 data, obtained before the program had been officially inaugurated, indicate that almost 50 per cent of eligible couples had been using some form of contraception. A series of independent surveys carried out by a joint team of Iranian and French researchers in the Shiraz county of Fars province in 1996-1998 (Agha *et al.* 1997) revealed similarly high contraceptive prevalence rates in both urban and rural areas.

Although the prevalence of the traditional method of *azl* (withdrawal) had gone up considerably (from 13 to 20 per cent) between 1977 and 1992, the overwhelming majority of current contraceptive users seem to be relying on the modern methods of pill, IUD, and condom. Iran is also one of the few Muslim countries where male and female sterilization are not only permitted but are also actively promoted by the national program. The most commonly used modern methods in 1997 were pill (20.9 per cent), IUD (8.3 per cent), condom (5.4 per cent), injectable (2.9 per cent), and Norplant (0.5 per cent). In addition, over 15.5 per cent of women and 1.9 per cent of men had undergone sterilization.

The mix of modern methods seems to be largely determined by the MOHME policy and shows some interesting variations across urban and rural areas and over time. It appears that between 1992 and 1997, the shares of pill and condom users have declined noticeably among both urban and rural users of modern methods. In this period, the share of sterilization has risen in both urban and rural areas. Thus, the proportionate share of women undergoing tubectomy has risen steadily among both urban (16.3 to 27.5 per cent) and rural women (from 18.0 to 29.1 per cent). A similar upward trend is also noticeable for male sterilization in both urban (2.7 per cent to 4.3 per cent) and rural (1.0 to 1.8 per cent) areas.

There are interesting provincial differences in both the overall contraceptive prevalence rate and its modern/traditional mix. The data for 1997 clearly demonstrate

these differences. In rural areas, total contraceptive prevalence rates vary from over 80 per cent (Yazd, 85.3 per cent; Semnan, 84.6 per cent; Isfahan, 81.8 per cent) to below 50 per cent (Hormuzgan, 42.5 per cent). Other provinces with relatively low contraceptive prevalence rates in rural areas are Kohgiluyeh-Boyerahmad (54.2 per cent), Sistan-Baluchistan (55.8 per cent), Khuzistan (57.8 per cent), and Bushehr (59.1 per cent). Total contraceptive use rates for urban areas vary within the much narrower range of 87.2 per cent (in Yazd) to 68.2 per cent (in Sistan-Baluchistan). In fact, in 12 of the 26 provinces, the CPR of urban couples is above 80 per cent and in only one province (Sistan-Baluchistan) does it fall below 70 per cent. Even in the latter case, over two-thirds of couples are found to be using contraception. As expected, in all provinces urban women have higher overall contraceptive use rates than rural women. This is, however, mainly due to the higher prevalence of the traditional method (withdrawal) among the urban couples.

***Relative impacts on fertility decline of nuptiality and marital fertility***

Abbasi-Shavazi (2000b) has decomposed the changes in total fertility rate from 1976 to 1996 into the components of changes in nuptiality and marital fertility for Iran by province as well as for rural and urban areas. He found that total fertility increased from 6.09 in 1976 to 6.24 in 1986, a difference of 0.14. This increase was due to the increase in marital fertility (0.22), but was offset by nuptiality change (-0.07). The total fertility rate fell substantially by 3.71 (births per woman) from 1986 to 1996. Most of the fall was due to the decline in marital fertility (3.11) with 0.6 being due to nuptiality change. In other words 86 percent of the fertility decline was due to the change in marital fertility and only 14 percent to nuptiality change. The decomposition of the change in TFR for both rural and urban areas is identical to that of the total population.

**The social context of contraceptive use and fertility decline**

Neither the early repression nor the later revival of the family planning program took place in a social vacuum. They occurred as part of a long, complicated and often rapidly evolving series of historical events involving many players with diverse agendas. A number of major social and political groups with diametrically opposed aims and agendas were involved in the Revolution. The two main uniting themes were a shared opposition to the Shah and the political organization created by him and a rather simplistic belief that Iran had all the natural and human resources for rapid

socioeconomic development, modernization, and free access to modern amenities and services enjoyed by people in the West. Few of the revolutionaries could be regarded as being against development and modernization in the sense of raising the level of education of all citizens, improving their health status, ensuring the proper satisfaction of their basic needs as well as providing them with the modern amenities and consumer goods that had flooded Iranian markets after the oil glut of the early 1970s. That even the fundamentalist *ulama* who quickly filled the power vacuum left by the sudden disintegration of the old regime were not against these popular ideals is clearly reflected in several of the speeches made by Imam Khomeini on his return to Iran as well as public pronouncements and promises made by many of his close advisors. In fact, some of the latter promised that the new regime would not only provide all social services free of charge but also abolish all existing taxes and arrange for the regular disbursement of oil revenues among the populace. An announcement by the cleric in charge of the Islamic Housing Foundation created shortly after the revolution, that all people living in Tehran would be given free land and interest-free loans to build a house, is believed to be one of the reasons behind the tremendous increase in migration to Tehran that happened during the first year after the Revolution.

Most of the above-mentioned populist promises were taken into consideration in the preparation of the Constitution of the IRI, drafted hastily and put to public referendum less than a year after the Revolution. The Constitution of the Islamic Republic of Iran clearly envisages a welfare state anticipating many of the ideals currently advocated by the United Nations as part of its new paradigm of Sustainable Human Development (Mehryar 1997). The results of investment in social development are reflected in various indicators of development (Table 3).

Because of the eight-year war and its enormous costs, the government of the IRI was restricted in the resources it could devote to the social development programs and priorities enshrined in the Constitution. Nevertheless, a recent study of the share of basic social services (primarily education and health) in the government budget and the GDP revealed that, even at the height of the war period, investment in the basic social services accounted for a sizable proportion of the annual budget. Expenditure of 20 per cent of the annual budget on basic social services as proposed by UNDP's 20/20 compact has consistently been exceeded (Mehryar *et al.* 1999). Moreover, a deliberate effort has been made to target the traditionally neglected rural and lower class segments of the population.

As a result of this investment in social services, the past two decades have

witnessed significant changes in modernization and in the living standards of the population (Tables 3 and 4). There have been substantial falls in both infant and maternal mortality rates and rises in expectation of life. Addult literacy has risen greatly and the enrolment ratio for children of secondary school age is above 80 per cent. Urbanization has continued but, at the same time, the urban-rural gap in access to health, education and modern amenities has been considerably narrowed. Almost all rural households have electricity and almost 80 per cent have piped water. Ownership of consumer durables such as refrigerators, gas cookers, radio and television has increased significantly, especially in rural areas.

Progress has also been made in the area of public education. Here not only did the literacy rate rise markedly for both men (from 59 per cent to 85 per cent) and women (from 37 per cent to 74 per cent) between 1976 and 1996, but the level of educational attainment also rose significantly. As a result, by 1996, the number of the non-student population with a secondary school diploma had risen to 4.6 million (compared with 1.28 million in 1976); the number of the non-student population with tertiary education had risen to 1.15 million (compared with 0.28 million in 1976). More important for fertility decline, women's share of the educated population has increased considerably:

1. The share of girls in the primary-level student population has risen to 90 per 100 boys (as compared with 66 per 100 boys in 1976);
2. The share of girls in the secondary-level student population has risen to 81 per 100 boys (as compared with 59 per 100 in 1976);
3. The share of females in the higher education student population has risen to 68 per 100 males (as compared with 47 per 100 in 1976);
4. While the total number of students in 1996 (19.3 million) was over twice that in 1976 (7.5 million), the number of students at senior secondary (3.3 million) was more than three times that in 1976 (0.89 million) and there were six times as many university students in 1996 (976,000) as in 1976 (150,000).
5. The number of non-student women with a secondary school diploma had risen to 2.1 million in 1996 (compared with 447,000 in 1976);
6. The number of non-student women with tertiary education had risen to 495,000 (compared with 75,000 in 1976).

These gains in women's education have not, however, been associated with any rise in their labor force participation rates. There was in fact a noticeable decline (from 12.9 per cent to 8.2 per cent) in the labor force participation rate of women between 1976 and 1986 and only a slight increase to 1996 (9.1 per cent). The

discrepancy in the educational attainment and the labor force participation rate of Iranian women is mainly due to cultural factors which preclude women's employment in such areas as construction, sales, and even food preparation and the hotel industry (Mehryar and Farjadi 2000).

**TABLE 3. Selected socioeconomic and demographic indicators for Iran for 1976, 1986 and 1996**

| **Indicators** | **Period** | | |
|---|---|---|---|
| | **1976** | **1986** | **1996** |
| Infant Mortality Rate: | | | |
| Male | 129 | 54.4 | 48.0 |
| Female | 142 | 59.7 | 52.6 |
| Maternal mortality [a] | 277 | 140 | 37 |
| Life expectancy: | | | |
| Male | 58.7 | 65.9 | 67.0 |
| Female | 57.8 | 65.6 | 66.8 |
| Adult Literacy Rate (%): | | | |
| Male | 58.5 | 70.7 | 84.7 |
| Female | 35.3 | 51.9 | 74.0 |
| Net enrolment ratio in secondary school | 50 [b] | | 81 |
| Urbanization (%) | 47.0 | 54.6 | 61.3 |

**Notes: a** Per 100,000 births, b The figure is for 1980.
**Sources:** Mehryar and Tajdini (1998); World Bank Development Indicators, 2000.

That most of these developments are due to sustained government investment in social services, particularly education and health, is confirmed by the fact that the share of educational expenses in total household expenditure remained under 1 per cent for the period 1979-1989 for both urban and rural households. It rose above 1 per cent of the total expenses of urban households in 1990 and continued to rise until 1995 when it accounted for about 2.3 percent of total household expenses. In the case of rural households too, there has been a steady rise in the share of educational expenses in total household expenses since 1990. It has accounted for about 1.3 per cent of household expenses since 1994. Similarly, the share of health expenses in total household expenditure has fluctuated between 4 and 5 per cent of the total expenses of both urban and rural households for most of the period under review. In recent years, health expenditure has risen just above 5 per cent in urban areas since 1994 and rural areas since 1996 (Tabibian *et al.* 2000).

Thus, there is no convincing evidence that a sharp rise in the costs of children caused the drastic fertility decline observed since the late 1980s. On the other hand, there is

**TABLE 4.** Access to electricity and other amenities by rural and urban areas of Iran, 1977 and 1997

| **Amenities** | 1977 | | 1997 | |
|---|---|---|---|---|
| | Urban | Rural | Urban | Rural |
| **Household access to:** | | | | |
| Electricity | 91 | 15 | 99 | 92 |
| Piped water | 80 | 12 | 98 | 78 |
| Telephone | 16 | 1 | 53 | 12 |
| Radio | 78 | 52 | 78 | 60 |
| TV | 52 | 2.4 | 93 | 69 |
| | | | | |
| **Ownership of:** | | | | |
| Refrigerator | 81 | 15 | 96 | 77 |
| Gas cooker | 75 | 29 | 96 | 69 |
| Indoor bathroom | 40 | 3 | 83 | 35 |

**Sources:** Mehryar and Tajdini (1998).

evidence that the per capita income of the majority of Iranian families has fallen below its pre-Revolutionary purchasing power while the consumer tastes developed during the oil glut period just preceding the Revolution continue unabated. Because of this, although by objective evidence the poverty level of the Iranian population has not gone up noticeably since the mid-1970s (Mehryar *et al.* 1999), a large proportion of families seem to be suffering from economic hardship.

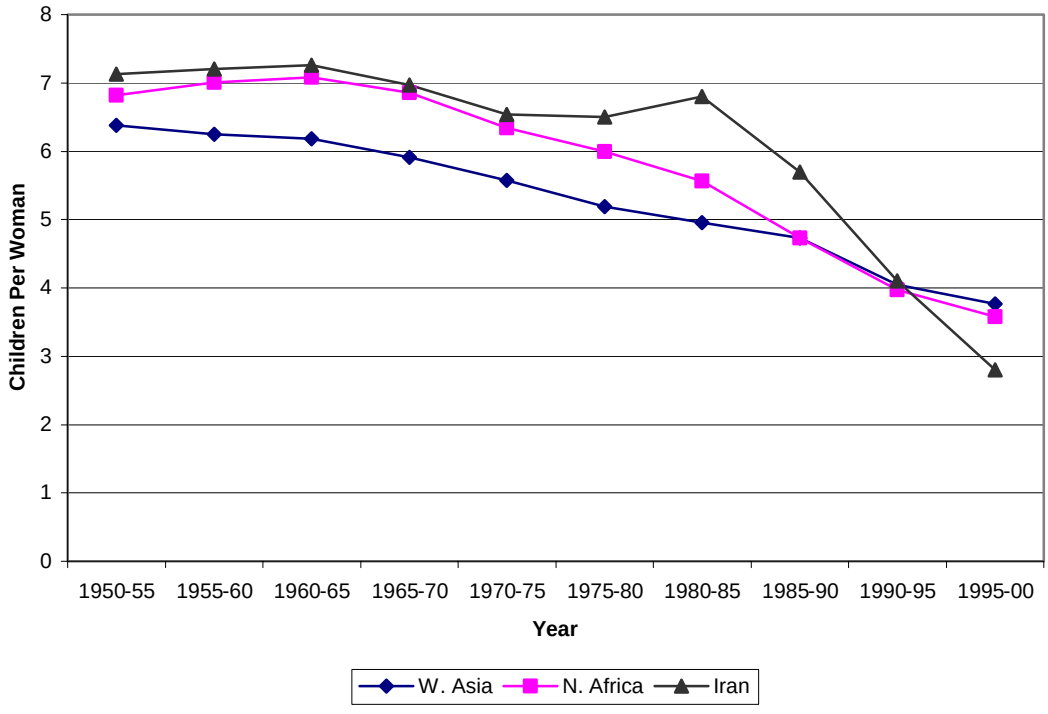
**The comparative perspective of fertility transition in North Africa and West Asia**

The Iranian fertility decline can be considered in the context of fertility changes in other predominantly-Islamic countries in North Africa and West Asia (Figure 3). As a whole, this region was characterized in the past as being bound by a culture founded in Islamic approaches to women that supported the persistence of very high and unchanging fertility (Omran; 1980: Caldwell 1986). In 1992, Obermeyer (1992: 56) concluded that high fertility would persist in this region in the absence of a redefinition of gender roles and the structure of the family. Recent falls in fertility rates in countries from Morocco to Iran have led to a reassessment of this alleged cultural hegemony. Rashad (2000) argues that cultures in North Africa and West Asia, as much as cultures in other parts of the world, have been sensitive to the needs and aspirations of the people that live in these countries. She shows that fertility decline was slow to start in this region but, once under way, has proceeded at a rapid rate. Her explanation is that the fertility transitions, in North Africa and West Asia are much

like other fertility transitions being influenced broadly by modernization factors such as education and changing aspirations.

However, cross-sectional factors, especially the state of the economy, war and political upheaval, have changed the timing and the pace of change in the North African and West Asian countries. In broad terms, Rashad argues that where fertility still remains high in this region, largely in the Gulf countries, it is because these countries have remained very wealthy, so that rising aspirations could be met with a continuance of high fertility. Costs of children in the Gulf countries are highly subsidized by the state. In other countries of the region, however, economic circumstances have been much more difficult and the rising aspirations of families brought on by modernization and education could only be met through later marriage and lower family size. Rashad suggests that later marriage has played a much more prominent role in the fertility transition in this region than fertility control within marriage, despite the fact that new roles for unmarried women in the paid labor force remain very restricted.

**FIGURE 3.** Trends of TFRs for North Africa, West Asia and Iran, 1950-55 to 1995-00




**Source:** United Nations, 1999.

In Rashad's view, "Islamic culture" did not stand as an immutable force in opposition to lower fertility in all of North Africa and West Asia. Indeed, Rashad argues that, despite the similarities already described, each country in this region has had its own transition and the evidence in this article shows that this is especially true of Iran. Of all of the countries spread from Morocco to Iran, the changes in fertility in Iran are by far the most spectacular (Table 5).

Rashad's arguments about the cross-sectional effects of war, political upheaval and economic hardship seem to be particularly apposite to the Iran case. Political upheaval and war not only stalled the fall in fertility in Iran from the late 1970s, they also appear to have led to a sizable increase in cross-sectional fertility rates. This cross-sectional surge in births to women of all ages probably partly precipitated the cross-sectional fall at all ages that began in the mid-1980s because most high-fertility aspirations had been satisfied. However, again consistent with the argument made by Rashad, there is a strong case that economic hardship relative to material aspirations accelerated the fall in fertility in Iran from the mid-1980s. On the other hand, in contrast to the other countries in the region, changes in nuptiality have played only a minor role in the Iran transition which has been dominated by widespread control of fertility within marriage. Here an explanation may be that the prior existence of a well-developed health system that had been extended to all parts of Iran offered the opportunity for the successful and rapid implementation of a national family planning program. Knowledge of the ready availability of contraception within marriage may be supporting the earlier marriage in Iran compared to countries in North Africa and Western Asia where fertility has declined. As in these countries, paid employment opportunities remain restricted for single women in Iran.

**Discussion**

Fertility in Iran in the early 1970s was somewhat high for countries at Iran's level of development. However, it was not exceptionally high for a Muslim country at Iran's level of development, because at that time there was a tendency for Islamic countries to have fertility levels higher than the average for countries at any given level ofdevelopment. What was out of the ordinary was the exceptionally high fertility level reached in Iran in the early 1980s, a TFR of just below 7, and the speed of the subsequent decline to a TFR of about 2.7 in 1996.

**TABLE 5. Total fertility rate (TFR) for predominantly Muslim countries in North Africa and Western Asia, 1995-2000**

| Country/region | TFR for a period before the year given | | Country/region | TFR for a period before the year given | |
|---|---|---|---|---|---|
| | 1980-85 | 1995-2000 | | 1980-85 | 1995-2000 |
| **Iran** | 6.80 | 2.80 | Bahrain | 4.63 | 2.90 |
| | | | Gaza | 7.40 | 7.30 |
| **Northern Africa** | **5.56** | **3.58** | Iraq | 6.35 | 5.25 |
| Algeria | 6.36 | 3.81 | Jordan | 6.77 | 4.86 |
| Egypt | 5.06 | 3.40 | Kuwait | 4.87 | 2.89 |
| Libya | 7.18 | 3.80 | Lebanon | 3.79 | 2.69 |
| Morocco | 5.10 | 3.10 | Oman | 7.20 | 5.85 |
| MoroccoSudan | 6.42 | 4.61 | Qatar | 5.45 | 3.74 |
| Tunisia | 4.90 | 2.55 | Saudi Arabia | 7.28 | 5.80 |
| West Sahara | 5.47 | 3.98 | Syria | 7.38 | 4.00 |
| | | | Turkey | 4.10 | 2.50 |
| **Western Asia** | **4.96** | **3.77** | United Arab E | 5.23 | 3.42 |
| Azarbaijan | 3.04 | 1.99 | Yemen | 7.60 | 7.60 |

**Sources:** United Nations, 1999, Abbasi-Shavazi and Jones (forthcoming).

The timing of the "baby boom" of the late 1970s and early 1980s indicates a clear relation to the Islamic Revolution and the pre-revolutionary atmosphere, although the mechanism of this relationship needs to be explained. The rise following the revolution almost certainly produced temporarily high levels of fertility resulting from a "bunching" of births. From these high levels, a sharp decline was likely to emerge. Nevertheless, the speed of the decline was definitely out of the ordinary, and caught analysts, both Iranian and foreign, by surprise.

A number of other important aspects of the Iranian fertility decline need to be dealt with in any comprehensive explanation. One is the fact that the decline began before the shift to an antinatalist policy. Another is the pervasiveness of the fertility decline. Unlike the early stages of fertility transitions in many countries, there is no evidence of selective declines at the young and old extremes of the childbearing ages, but rather a decline across all age groups. Likewise, there is no evidence of diffusion of fertility decline from urban to rural areas, but rather a simultaneous and substantial decline across all geographic regions and in both urban and rural areas. Over time, there was a considerable degree of narrowing of urban-rural and regional differences both in fertility levels and in contraceptive prevalence rates.

Certain aspects of the fertility decline can be explained in terms of fairly straightforward demographic causation and do not require further explanation. One such factor is the already-mentioned bunching of births in the post-revolutionary period coinciding with the war with Iraq. The speed of the subsequent decline therefore reflects in part a delayed reaction to this bunching of births – a delay or cessation of further childbearing. Another factor is the weakening of the child loss motivation for high fertility because of the higher proportion of babies and young children surviving over time. Nevertheless, once the demographic decks are cleared by taking such factors into account, there is still much to be explained.

It is probably appropriate to relate the Iranian fertility decline to those in countries with comparable religious background and levels of economic development. The Iranian fertility decline has been faster, especially in the decade of the 1990s, than that in countries of North Africa, such as Algeria, Egypt, Morocco and Tunisia, or West Asian countries such as Lebanon, Turkey and Kuwait, where levels of economic and social development are comparable (though obviously not identical) to those in Iran. It has been faster, too, than those in Indonesia and Bangladesh, much poorer predominantly Islamic countries where a different set of factors has to be invoked to explain fertility trends.

How do these trends relate to theories of fertility determination? Available data do not enable us to fully test the relevance of the competing theories. Let us first consider the post-1986 decline which was due only in small part to rising age at marriage and mainly to declining marital fertility. Modernization theory is relevant here. Modernization trends continued after the revolution in infrastructure developments (water and electricity supply in the villages), increased education, improvement of health services, widespread access to TV and radio, and stress on

rural development. The level of urbanization increased to 61 per cent by 1996. Modernization indicators compiled by Paydarfar and Moini (1995) suggest that despite revolution and war with Iraq, the rate of modernization over the 1976-86 period was higher than in the previous decade. There was also stress on greater equity, and apparently some success in achieving this end. A number of theorists have argued that equitable distribution of the fruits of development is not unrelated to the fertility declines in places such as Kerala, Sri Lanka and Costa Rica.

What the Revolution did not lead to was rapid economic development, as measured by rising levels of real income. Therefore over time, we might see the period of the Revolution as one when people were under considerable economic pressure. At the same time, the Revolution engendered important social transformations through expanded education, social security, rural development and improvement of the health care system. These transformations are likely to have modified people's ideas and aspirations, as well as modifying institutions such as gender relations and the broader social structure.

Institutional theorists (McNicoll 1980, 1985, 1994; Greenhalgh, 1988) stress the interaction of social, economic, religious and political institutions with population policy changes and with individual attitudes and behavior. Analysis of institutional change in a revolutionary context should probably emphasize the role of the revolution in shaking society to its foundations, and thus making possible accelerated changes in many areas where slower incremental change would otherwise have taken place. Following the revolution, the formation of the Revolutionary Jihad movement led to faster and more egalitarian development in rural areas. There is still a Ministry of Jihad today. The health houses, providing primary health care, had existed before the revolution, but this system was expanded post-revolution by the Ministry of Health. In the new era of family planning beginning in 1988, the full involvement of the religious leadership in supporting and legitimizing family planning was crucial.

Probably the key institutional changes that occurred were those affecting the status of women. Women's important role in the Revolution was widely acknowledged, and no doubt increased their status in the community. Subsequently, their educational opportunities continued to widen, on average their marriages were delayed and arranged marriage declined, but, somewhat surprisingly, their participation in the labor force did not increase. Western commentators make much of the restrictive dress rules that were imposed on women after the Revolution, but in the Islamic context these are seen as increasing women's confidence in being able to

move around freely without risk of harassment. They were certainly irksome to many of the more educated and Westernized women, but probably less so to the majority of women, who come from more traditional backgrounds. More important, perhaps, were developments in women's place within the family – in their decision-making functions, which were no doubt enhanced by their increasing levels of education, and in their relation to their husbands *vis-a-vis* the extended family. Probably a more companionate form of marriage was tending to develop, in which pronatalist pressures from relatives were becoming less effective. McDonald (2000) has recently argued that increased gender equity within the family is likely to be a feature of fertility transition.

What direct role did the government play in the sharp fertility decline? Both the sudden collapse of the earlier pronatalist rhetoric, and also sudden strong government support for the family planning program, were undoubtedly important. But even before the announcement of the new family planning program, there was continued provision of contraceptives by government sources over the 1979-1989 period, enabling rates of modern contraceptive use to remain at fairly high levels. Moreover, the support of key religious teachers for the practice of contraception for valid reasons continued, even during the most strongly pronatalist period, when the family planning program was condemned by many as a Western plot (Mehryar, forthcoming).

Since 1989, the family planning program has been well run and has brought modern contraception within reach of most couples, without strong campaigns of exhortation, which might well have generated resistance from more traditional Muslims. Some evidence that the revival of the family planning program followed rather than led demand is the date of onset of renewed fertility decline – in 1986, two years before the new population policy was agreed. The clear demand for its services enabled the family planning program to succeed.

It is difficult to assess the role of ideational change (Cleland and Wilson 1987) in this context. Nationalistic and religious rhetoric that came with the revolution and subsequent war would have had indirect effects on fertility, but it is hard to know exactly what these were. It is interesting that fertility was beginning to rise in the years immediately before the Revolution, when the temperature generated by anti-Shah (and anti-Western) pronouncements by leading clerics, and by intellectuals such as Ali Shariati and Jalal Al Ahmad was rising. Pronatalism was subsequently fostered by the war situation, but once the war finished, people were more open to the renewed

argument that rapid population growth was a serious drag on development. This argument gained credence among planners, once they were able to shift their thinking from the pro-natalist attitudes fostered by the war situation.

In the end, elements of each of the theories of fertility determination probably need to be given some role in explaining the rapid fertility decline. Indeed, there is no obvious reason why we should see these theories as competitive and not complementary.

But what can be said about the rise in fertility from the mid-1970s to the mid-1980s? The rise began before the Revolution but in a period when underground exhortations to the faithful were attacking all that the Shah's regime stood for, including the family planning program and the idea of limiting family size. The rhetorical stance of the new regime was pro-early marriage, suspicious of contraception, and unwilling to give women major breakthroughs in public life. The inactivation of the national family planning program both sent out the message that family planning was not in favor and made it harder for couples to access the contraceptive services which, as noted above, continued to be made available by government sources. Pronatalism was definitely fostered by the war situation, both an "official" pronatalism and a family-level pronatalism arising out of a sense of patriotism. It should be noted, though, that there were clearly limits to the effectiveness of government exhortation campaigns, as indicated by the fact that age at marriage for women did not fall in revolutionary times despite the wholehearted campaign for early marriage. Age at marriage has subsequently risen substantially despite lack of government rhetoric to this end.

One way of assessing the effect of Iran's fertility decline is to pose the counterfactual: what if the Revolution had not happened? We can speculate that Iran would have experienced a steady downward trend in fertility, just like the major North African countries of Algeria, Tunisia, and Egypt. The post-Revolutionary rise in fertility was actually fairly short-lived, and the subsequent sharp decline can be considered to represent a return to the secular downward trend. The ultimate population size, however, is substantially affected by the "bulge" in fertility, which probably led to an extra 8 million Iranians in the year 2000.

How relevant is Iran's experience for other countries? This is hard to say. The specific religious, political and social context will never be replicated elsewhere. Nevertheless, we believe that Iran's experience in modifying its population and reproductive health policies in times of dramatic political and social change does, if

carefully interpreted, have many lessons for other countries. For example, the Iranian experience raises some doubts about the efficacy of policy pronouncements by government or *fatwah* by religious leaders in modifying the actions of the populace, if these pronouncements are out of tune with emerging social trends. Despite the overturning of the minimum age of marriage imposed by the Shah's regime and religious support for early marriage, age at marriage has risen sharply over the past two decades. Other forces have clearly outweighed the influence of exhortations and religious pronouncements on this matter. On the other hand, the pragmatic process by which the *ulama*, the technocrats and the intellectuals were brought together to settle on a population policy with broad support from all sections of society carries important lessons for countries where Islamic, secular and various political forces are at constant loggerheads over population issues.

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