Below Replacement Fertility in Iran: A District Level Analysis of 2006 Census.

By

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Abstract (Extended)

Following a decade of fertility rise that was largely caused by the pronatalist environment created by the Islamic revolution (979) and Iraqi initiated 8 year war (1981-1988), Iran has experienced a drastic decline in fertility since 1990s. Total fertility rates derived from the 1996 census (2.8) were less than one-half of the figure obtained from the previous census (6.6). A large-scale DHS-type survey conducted in October-November 2000 indicated that total fertility rates of Iranian couples had dropped to 2.0 (1.7 in urban areas vs. 2.4 in rural areas). TFR figures for the total population of provinces derived from this survey ranged from 1.4 to 4.1, being below replacement level (2.1) in 14 of the 28 provinces. Total fertility rates of urban couples ranged from 1.3 to 3.5 but rose above 2.0 in urban areas of nine of the 28 provinces only, being above 2.4 in only one province (Qom, 2.7) and above 3.0 in another one (Sistan-Baluchestan, 3.5). In rural areas, too, provincial TFRs varied between 1.5 and 4.7. They were below 2.1 in ten of the 28 provinces and rose above 3 in only three provinces (Khuzestan, 3.2; Hormozgan, 3.3 and Sistan-Baluchestan, 4.7). The findings of the 1996 census and the DHS-type survey carried out in 2000 are squarely confirmed by the number of births registered by the Civil

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registration Organization which indicate a consistent decline in the number of births registered annually between 1988-2000. There are however signs of a slight rise in the number of births registered by the CRO between 2001-2006.

A recent analysis of demographic and health data collected by rural health workers between 1992-2003 also show drastic changes in different fertility indicators of rural couples covered by Rural Health Houses (about 80% of rural population). According to this set of data, the total fertility rates of rural women had dropped from 3.9 to 2 between 1993-2003. Provincial variations in TFR of rural women covered by the RHHs in 2003 ranged from 1.3 (in northern provinces of Gilan and Mazandaran) to 3.6 (in the south eastern province of Sistan-Baluchestan).

The national census of population and housing conducted in October-November 2006 has collected a wealth of information on fertility trends and pattern between 1996-2006. This paper presents some of the results we have obtained by a detailed analysis of the as yet unpublished data on provincial and district level variations in fertility collected by the 2006 census. At the time of this census Iran was divided into 30 major administrative units known as Ostan (province). Each Ostan is in turn divided into a number of districts (sub-provinces) which vary across Ostans. There were 336 districts, each province consisting of urban (a number of cities/towns) and rural areas (a number of villages). In this study we have calculated crude birth rates and total fertility rates for the total, urban and rural population of the 30 provinces and 336 districts covered by the 2006 census. For this purpose we have used crude birth rates obtained from dividing the number of

children under one year to the total, urban and rural population of each province and district as well child-woman ratios obtained by dividing the number of children aged 0-4 and 5-9 years by the number of women aged 15-49 and 20-54 years.

Results of our analysis indicate that the share of children under 5 years of total population has fallen from 39.6 to 25.5 and the Crude Birth Rate (CBR) of Iranian population as a whole has dropped from 25 to 15.8 between 1996-2006. Similarly, the value of Child-Woman Ratio (CWR) has fallen from 420 to 258. Total fertility rates obtained from these two estimates of fertility are 1.4 (CWR) and 1.9 (CBR), respectively. The analysis suggests a drastic change (almost by half) of the total fertility rate (TFR) of Iranian women between 1996-2006 regardless of the measure used. TFR values obtained by combining the results of the CBR and CWR methods indicate a continuous fall in the TFR of both urban and rural women of all provinces between 1996 and 2006. It would appear that while the TFR of all women (1.9) and urban women (1.8) has clearly dropped below replacement level (2.1) that of rural women as a group (2.1) is only slightly above this level. Nevertheless, the amount of fertility decline experienced by rural women during the past decade (from 4.5 to 2.1) is much more impressive than that of urban women (from 3 to 1.8).

TFR values calculated for urban and rural areas of the 30 provinces covered by the 2006 census indicate considerable variations across provinces while the urban-rural difference would seem to remain unchanged. With regard to population as a whole, 27 of the provinces would seem to have reached below replacement fertility, with TFR values

ranging from 1.15 to 1.95. In the case of urban women TFR values vary from 1.15 to 3.25 with only 3 provinces falling above 2.0. In the case of rural areas (which account for less than one third of total population of Iran), although the overall value (1.95) is below replacement level, ten provinces lie above the replacement level. Among these only two are noticeably above replacement level.

Thus, according to the 2006 census, over 80% of the population of Iran belong to provinces with clearly below replacement fertility rates. Among these, there are 10 provinces with very low TFR values (ranging from 1.15 to 1.45). They contain over 52% of total, 57% of urban and 41.4% of the rural population of Iran. Of the urban population, 66% live in 16 provinces with very low TFRs (1.15-1.5). In rural areas too, only 41.2% of the population live in provinces with TFRs ranging from 2 to 3.7, while over one-third belong to provinces where the TFR of rural population is less than 1.7.

Considering district level variations, it is found that only one of the 336 districts has a crude birth rate exceeding 30 (Saravan District in the south eastern Province of Sistan-Baluchestan with a CBR of 31.6, implying a TFR of 4.3). In 54 districts CBR values vary between 20-30 (indicating TFRs vaying between 2.5 and 4.0). In another 96 districts CBR values are found to range between 17-19.9 (TFR equivalents being 2.1 to 2.5). Thus in 155 districts (or 45% of districts) total fertility rate of Iranian couples would seem to be above replacement level. The population of these 155 districts is however only 37% of the total population of Iran. In 14 provinces and 149 districts crude birth rate lies between 14-17 (TFR being 1.7 to 2). In tow provinces and 37 districts (11% of districts) the crude birth rate is below 14 which indicates a TFR less than 1.4.

Using a variety of demographic, social development and health indicators taken from the 2006 census and other sources of information we are trying to identify factors that may account for provincial and district level variations in fertility revealed by the 2006 census as well as differential rates of fertility decline since 1996. Initial results indicate that of these variables are only able to account for a small proportion of the observed provincial and district level variations. Geographical location emerges as the main determinant. Provinces and districts with the lowest fertility rates are clustered in the north western corner of Iran neighboring the Caspian Sea. In contrast, provinces with the highest fertility rates are all located in the south eastern part of the country bordering the Oman Sea, Afghanistan, Pakistan and the Persian Gulf.