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The Stalled Fertility Transition in Rural Ethiopia, 1990-2005: Trends and Multivariate Analysis of Socio-economic, Health Service and Contextual Factors

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1. PURPOSE AND BACKGROUND

This paper documents the pace and nature of the fertility transition in Ethiopia, the second largest country in Sub-Saharan Africa at 75 million, and where population growth rate is still around 2.7%. With over 85% of the population living in rural and often isolated areas, the main concern at the turn of the century had been the lack of strong entry into the demographic transition, given the background of famine, hunger, poverty, epidemic disease, war and instability. It had translated into rapid population growth, densely settled agricultural heartlands, relatively modest urbanization, very high fertility and maternal and child mortality, and chronic and acute malnutrition. In fact, the implementation of the 1993 National Population was assessed after 10 years to having been weakly implemented (Hailemariam, 2003).

The raw data from the 2005 Ethiopian DHS are now available for analysis (CSA/Macro, 2007), and are compared with the EDHS of 2000, and with a new re-analysis of the National Family and Fertility Survey (NFFS) of 1990.

There appear to be two main paradoxes in rural areas from a comparison of the 1990, 2000 and 2005 surveys:

A steep rise in current, modern CPR in rural areas (from 1% to 4% in 2000, and to 11% in 2005), but after a decline in rural TFR from 6.4 to 6.0 from 1990-2000, a stalling remaining at 6.0 in 2005, while urban TFR continues to fall.

Thus the high fertility and birth rate, combined with steeply lowering under-five mortality, contributes to maintaining the high annual population growth rate of around 2.7%.

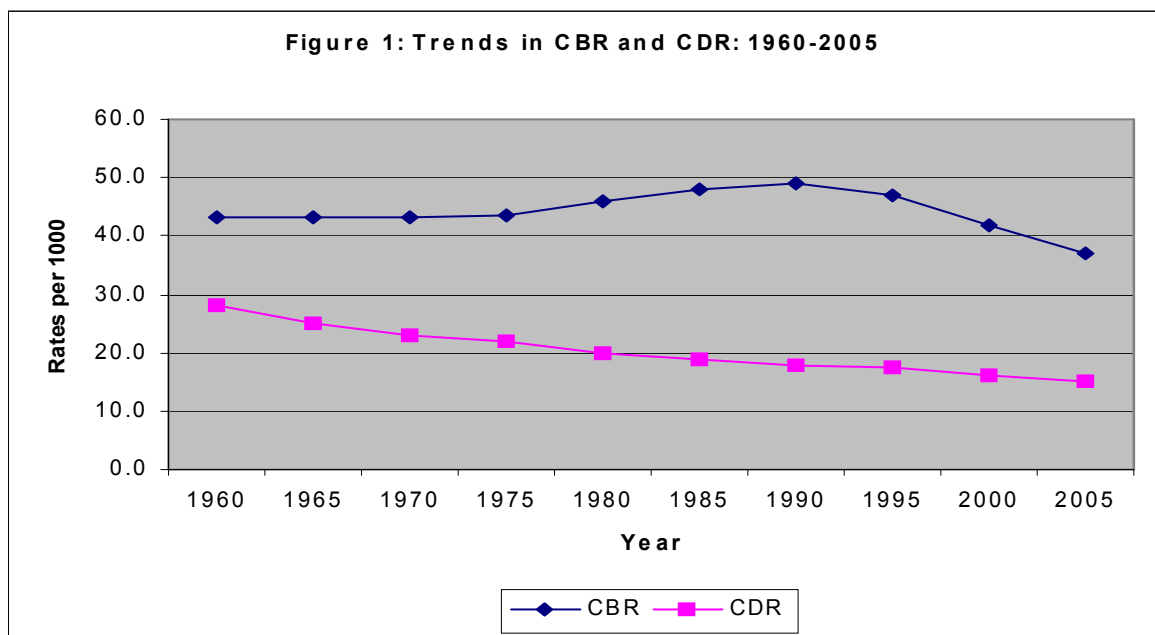
The paper briefly describes the demographic history of the 20th century, one of steadily rising annual population growth rates until 1990. An important dimension of the lagging transition is not only the large rural-urban gap in fertility, mortality and malnutrition, but also those related to social, economic, cultural, agro-ecological and environmental inequality: where have these widened, and where they have narrowed (Teller et al, 2007). This paper analyzes focuses on many of the associated factors of the lagging rural fertility transition.

2. POPULATION SIZE, GROWTH, AND DISTRIBUTION

2.1 Population size and Growth

Absence of accurate time series of population data limits the estimation of past growth rate of the population. Although figures on the size of the population started appearing as early as mid-nineteenth century, these were based on guesses made by travellers and visitors (Hailemariam, 1990). Moreover, these figures did not include the most densely populated southern and southwestern regions. Consequently, until about mid 1960s, no population data existed for the whole country. In 1964/65 the first national sample survey was conducted by the then Central Statistical Office (now CSA) and since then various sample surveys were undertaken that provided estimates of population data for the country. However, these data had their own limitations and they permit only a crude approximation of the actual size of the Ethiopian population. The population data are estimates obtained on the basis of the reconstruction made by the CSA using the 1984 Census data.

The rate of population growth increased from about 2.2% in the 1960s to a peak of 3% in the late 1980s and early 1990s (Figure 1).



Source: CSA, 1984, 1994 PHC

Although the growth rate appears to have begun a downward trend from mid 1990s, the speed of the decline is very slow and even by 2020 the rate of growth of the population is unlikely to be any lower than 1.3% per year (UN, 2002). The youthful age structure generated by high fertility levels guarantees a continuing future rapid population growth.

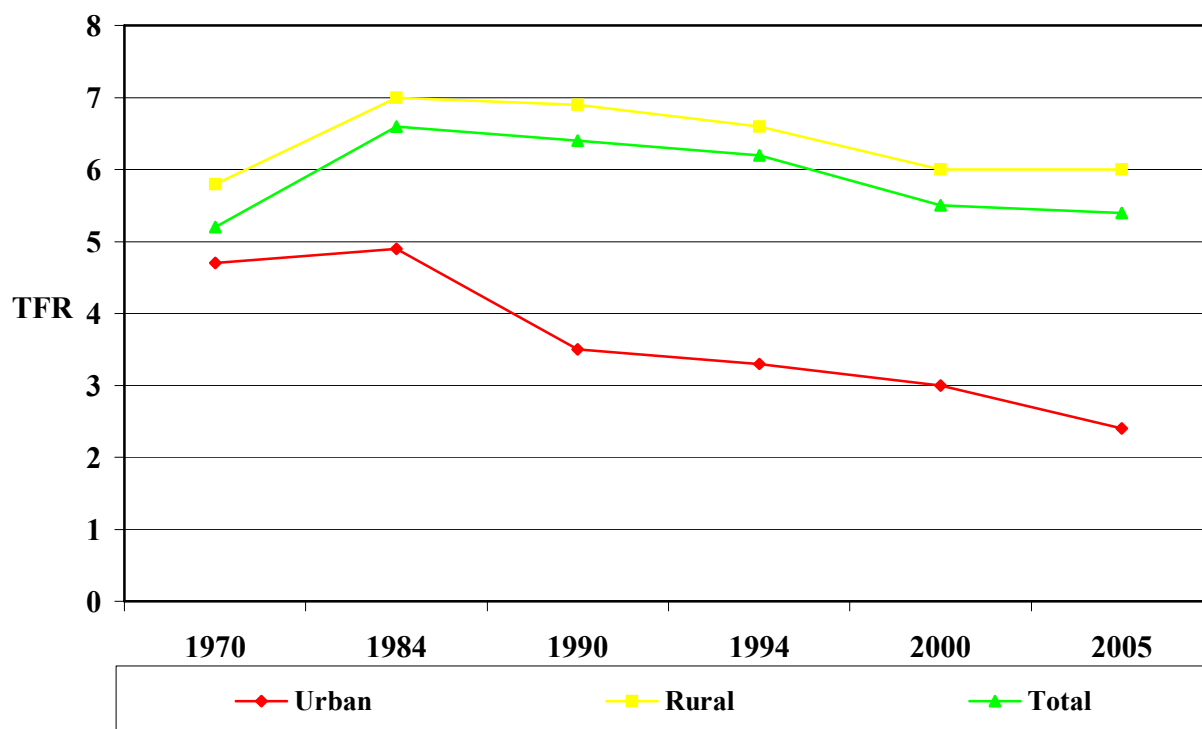
The apparent upward trend is a phenomenon observed in many developing countries before they began their fertility transition and is associated with decline in the level of primary and secondary sterility due to the treatment of STD, in particular, gonorrhoea and the reduction in the incidence of widowhood, which led to longer periods of married life among spouses. The shortened period of the duration of breast-feeding because of the increasing introduction of bottle-feeding might also have contributed to the rise in fertility by shortening the duration of post-partum amenorrhoea.

2.2 Trends in Fertility

2.2.1 Fertility rise

The main feature of fertility in Ethiopia is that it has been at its highest levels at the end of the twentieth century. It increased between the 1970s and early 1990s from about 5.2 children per woman in 1970 to 6.4¹ in 1990. Since then, however, it has begun a moderate decline, mostly in urban areas (Figure 2). The three-year rate preceding the survey declined from 6.4 children per woman in 1990 (not including rural Tigray) to 5.5 children per woman in 2000. According the 2005 EDHS, TFR was 5.4 children per woman in 2005. This shows that in the last 15 years, since 1990, TFR declined by only one child per woman.

Figure 2: Total Fertility Rates: 1970 - 2005

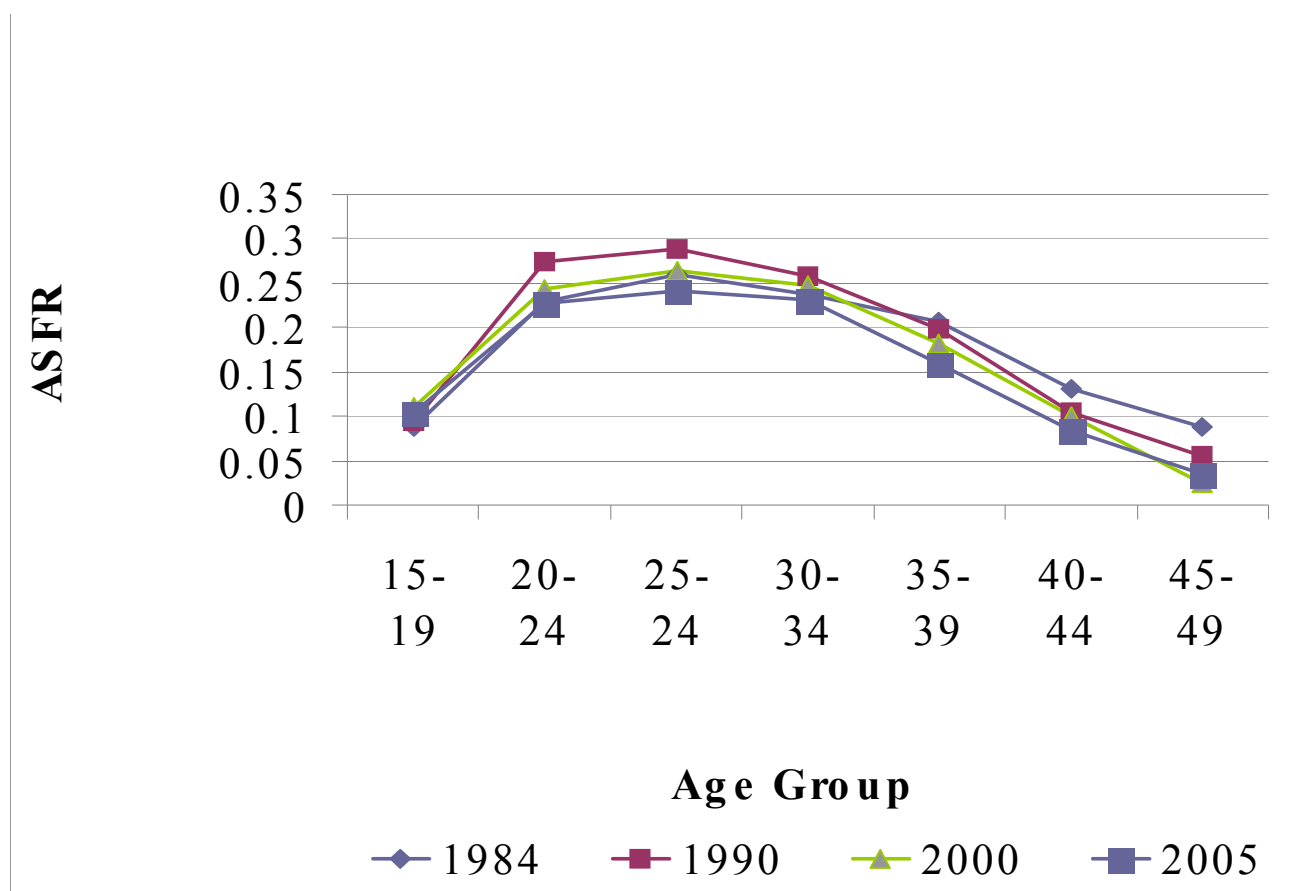


¹ This is reported TFR not adjusted TFR. The adjusted TFR is much higher.

Urban fertility has been much lower than rural fertility but it also increased between 1970 and 1990. Since then, however, it has been declining sharply. As Figure 3 shows, the gap in urban and rural fertility has been increasing since 1994.

Figure 3 presents the age specific fertility rates since 1970. The figure demonstrates that the population is characterized by a broadly peaked age pattern of fertility that falls slowly with advancing age. This is a characteristic of populations where there is little parity specific fertility control. The figure also confirms that fertility has been increasing in the 1980s and early 1990s with higher age specific fertility rates in these years.

Figure 3: Age Specific Fertility Rates, 1984-2005



Source: CSA, 1984, 1994 PHC

From the above discussion, it can be concluded that fertility was relatively low in the distant past, increased in the late 1980s and early 1990s and the most recent trends are starting to decline, but still high in the rural areas.

2.2.2 Differentials in TFR and CPR trends

Looking at the differentials in the trends, one sees that both rural and urban TRF declines in the 1990-2000 period at 13-14%, but between 2000-2005, while urban fertility continued to decline (20%), rural fertility did not (table 1). Similarly, in this later period, while those with secondary education and above continued to decline, at an ever faster pace (35%), fertility in the less educated stagnated.

The trends in modern CPR among currently married, non-pregnant women 15-49 showed continued increase in both period. In fact, the greatest increase in the latter period was among the rural (221%) and the uneducated (88%).

Table 1: Trends in TFR (3yr ave.) and modern CPR (current use), by residence and education, 1990-2005

Indicator	1990	2000	% change 1990-2000	2005	% change 2000-2005
TFR -					
Rural	6.9	6.0	-13%	6.0	0%
Urban	3.5	3.0	-14%	2.4	-20%
No edu	--	6.1	--	6.1	0
Primary	--	5.1	--	5.1	0
Secondary	--	3.1	--	2.0	-35%
CPR-					
Rural	1.4	3.3	+207	10.6	+221%
Urban	16.8	35.5	+111	42.2	+18%
No edu	2.7	3.7	+37	9.8	+84%
Primary	19.1	13.2	-36	21.9	+66%
Secondary	49.7	33.0	-34	45.9	+39%

Urban fertility has been declining since 1990 suggesting an earlier start of fertility transition in urban Ethiopia, while rural fertility has been lagging behind. Early and universal marriage², the high social and economic value attached to children, the low level of infertility³, the depressed status of women and the extremely low contraceptive prevalence⁴, among others, may explain the high reproductive performance in the population. The recent decline may be due to an increase in the age at first marriage, decline in the proportion of married women and increasing use of modern contraception.

² The mean age at first marriage is less than 18 years and nearly all women are married before they reach age 35.

³ Infertility is much lower in Ethiopia compared to other countries in Africa.

⁴ Only 4% of currently married non-pregnant women aged 15-49 reported as users of contraceptives in 1990.

Use of any contraception increased from 4.8% in 1990 to 8% in 2000 and to about 15% in 2005 (CSA and ORC Macro, 2006). However, method mix has not improved. There is a heavy reliance on temporary methods only. Less than one percent of women were on permanent or long term methods and the majority of the users were on temporary methods (Table 2).

Table 2 : Contraceptive Method Mix: 1990, 2000 and 2005.

Method	1990	2000	2005
Any modern	2.9	6.3	13.9
Female sterilization	0.3	0.1	0.2
Male sterilization	0.0	0.3	0.2
Pill	2.2	2.5	3.1
IUD	0.3	0.1	0.2
Injectable	0.0	3.1	9.9
Implant	NA	0.0	0.2
Traditional*	1.9	1.7	0.8

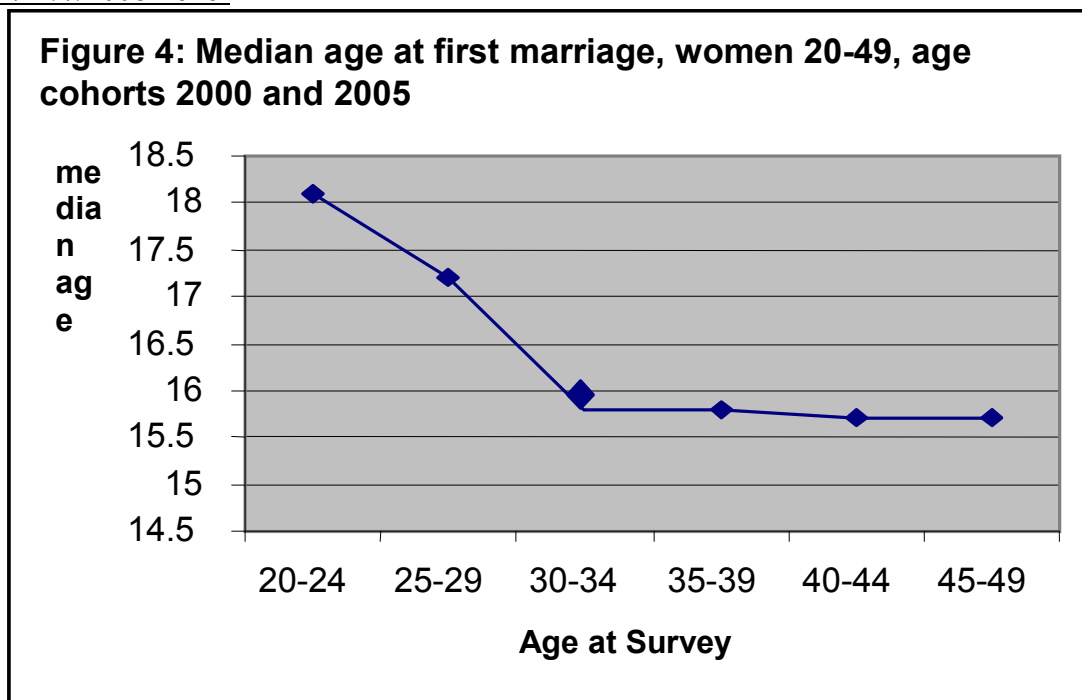
Sources, CSA NFFS, 1996; CSA/ORC Macro, 2001, 2006

*Abstinence, withdrawal

The high fertility in the past was mainly due to early age at marriage and absence of the means for fertility control. Moreover, as children are psychologically, socially and economically valuable in the society, there has been a strong desire for more children. This is changing as children are becoming more and more expensive (their economic value is declining with more and more children going to school than ever before (gross enrolment in primary schools was 61% in 2000/01 and 79% in 2004/05) (MOFED 2005) and with increasing population, farm size is dwindling sharply and the need for farm labor is falling). Also the decline in infant and child mortality ensures the survival of most children to adulthood. Thus, there is some indication that fertility transition that started long ago in urban areas is being extended to rural areas as well.

2.2.3 Age at Marriage

The median age at first marriage increased slowly over the last two decades from 15.7 years for women age 45-49 to 17.2 years for women age 25-29 and 18.1 years for the younger cohorts (age 20-24) (Figure 4). It stayed at 18.1 between 2000 and 2005 EDHS. The proportion of women who married before age 15 has also considerably decreased during the last two decades. More than a third (38%) of ever married women aged 45-49 were married by age 15. This declined to less than one-quarter among the younger cohort (20-24) and 13% to the 15-19 cohort. Around 71% of those aged 45-49 were married by age 18 but this declined to 38% among the youngest cohort (Fig. 4). There is an inverse relationship between age at first marriage and fertility in populations where little or no fertility control is practiced and childbearing outside wedlock is uncommon. The earlier marriage takes place, the higher the fertility and vice versa.

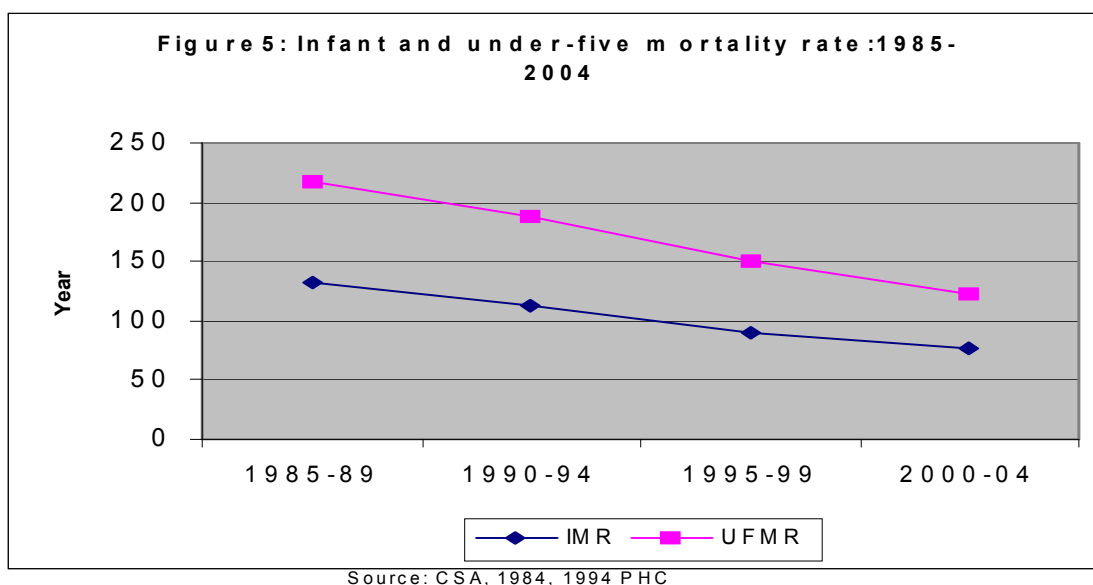


Source: CSA and ORC Macro, 2001, 2006

The proportion of women of reproductive age in marriage declined from 72% in 1990 to 63% in 2000. According to the 2005 DHS, it was 63.4%. Increasing female education in the recent past is likely to have contributed for this change in pattern of marriage in Ethiopia.

2.3.4 Mortality

Mortality levels declined in the population during the last two decades, with the greatest decline between 2000 and 2005 (Fig. 5). Mortality indices such as infant mortality rate and life expectancy at birth reveal a pattern of mortality decline. Infant mortality rate declined from 153 deaths per 1000 live births in 1970 to 110 in 1984 (CSA 1991a; 1991b) and further declined to 106 in 1990 (CSA, 1993). In 2000, it was 97 per 1000 and in 2005, declined to 77(EDHS, 2001)



Estimates of HIV prevalence in Ethiopia from the 2005 DHS show that about 1.4% of the adult population 15-49 are infected with the virus (CSA/ORC Macro, 2006). HIV/AIDS has had some impact on the level of mortality in Ethiopia. Nevertheless, it is very unlikely that it will overcome the momentum of population growth. However, AIDS will not stop population growth or lead it to negative growth rate as many people think. This is because the current growth rate is high, contraceptive prevalence is low and HIV/AIDS prevalence has declined and is likely stabilized

To sum up, from what has been presented so far, there is convincing evidence that fertility, the driving force behind population growth has begun its downward trend, particularly in urban areas. However, a key determinant of the speed at which it will continue falling is the extent to which couples use or fail to use contraception to control the number and spacing of their children. More than half of currently married women who were not using any family planning method at the time of the survey say they intend to use a method in the future.

3. DATA AND METHODS FOR MULTIVARIATE ANALYSIS AT HOUSEHOLD AND INDIVIDUAL LEVELS

3.1 Preconditions for African fertility transitions

Four essential preconditions for deliberate family limitation in SSA were listed by the Economic Commission for Africa: (UN/ECA, 2002)

- 1- Conscious choice- Psycho-cultural change related to increased child survival and to female education (secondary school)
- 2- Advantageous to kinships: relating increased costs of children for future employment, desired family size
- 3- Later age of marriage (related to urbanization and cultural change)

4- Effective, available, accessible contraceptive methods and support services

3.2 Data Sources and Methods

- Data come from the 1990 National Family and Fertility Survey (CSA, 1991), and the 2000 and 2005 Ethiopia Demographic and Health Surveys (CSA/DHS, 2001, 2006)
- Bivariate (distributions) and Multivariate Analyses
- Odds ratios from logistic regressions are reported (within 95% confidence intervals); green shaded area highlight important finding

3.3 Lagging fertility decline in light of increased Contraceptive prevalence

3.3.1 Methods

This analysis looks at the use of modern contraceptive methods by currently married women from the 1990 NFFS and the 2000 and 2005 EDHSs. We include the following selected social, economic, and demographic characteristics in the analysis:

- Place of residence (Addis- 4 million, Other Towns (above 2,000 pop), Rural)
- Woman's education (No education, Primary, Secondary+)
- Age group (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49)
- Employment Status (Work for cash, Not working)
- No. of living children (0, 1-2, 3-4, 5+)
- Partner's education (No education, Primary, Secondary+)
- Wealth status (5 quintiles)
- Visited health facility last 12 months (Yes/No)
- Visited by FP worker last 12 months (Yes/No)
- Media exposure (Exposed to at least 1/ No exposure)
- Age difference (Male partner older by) (< 5 yrs, 5-9 yrs., 10+ yrs)
- Media exposure (Exposed to at least 1 of 3 sources/ No exposure)

3.3.2 Multivariate Analysis: Determinants of Fertility Behavior

The outcome variable in this analysis is number of children ever born to a woman (table 3). Previous research has used number of children born to a woman as a measure of fertility.

The data come from the 1990 National Family and Fertility Survey and the 2000 and 2005 DHS. In this analysis, we include married women who are ages 20 and older because of the selection bias on marriage for younger women.

Here we see that the rural CEB has not declined much, while Addis Ababa and other Urban have declined substantially, with the biggest declines (of .79 and .90, respectively) in the 1990-2000 period. Other large declines in the first period are seen among the secondary education women and men and women 25-29. Increases in CEB are noted in the later period are among less educated women and partners, other Christians (evangelical, Catholics), and middle and higher wealth status.

Table 3: Mean children ever born by demographic and socio-economic characteristics of ever-married women – 2000 and 2005 Ethiopian DHS

Variable	1990	2000	1990- 2000 Differ.	2005	2000- 2005 Differ.
	Mean	Mean		Mean	
Residence					
Addis Ababa	3.85	3.06	-0.79	2.80	-0.26
Other Urban	4.36	3.46	-0.90	3.23	-0.23
Rural	4.72	4.62	-0.10	4.71	0.09
Woman's education-					
No education	4.85	4.71	-0.14	4.81	0.10
Primary	3.25	3.36	+0.11	3.79	0.43
Secondary+	2.87	2.47	-0.40	2.41	-0.07
Partner's education					
No education	4.88	4.85	-0.03	4.92	0.06
Primary	4.09	3.93	-0.16	4.13	0.20
Secondary+	3.49	3.04	-0.45	3.26	0.22
Wealth Status					
Poor	NA	5.00	--	4.71	-0.29
Middle	NA	4.14	--	4.51	0.37
Rich	NA	4.03	--	4.28	0.25
Religion					
Orthodox	4.56	4.37	-0.19	4.27	-0.10
Other Christians	4.80	4.31	-0.49	4.62	0.31
Muslims	4.75	4.59	-0.16	4.75	0.16
Traditional	4.75	4.59	0.0	4.67	0.09
Media exposure*					
None	4.69	4.63	-0.06	4.74	0.11
At least 1 media	4.37	3.95	-0.42	4.12	0.17
Work Status					
Not working	4.75	4.38	-0.37	4.57	0.19
Working	4.60	4.47	-0.13	4.30	-0.17
Current Age					
20-24	2.01	1.63	-0.38	1.64	0.01
25-29	3.43	2.92	-0.51	3.15	0.23
30-34	4.91	4.69	-0.22	4.63	-0.06
35-39	5.87	5.72	-0.15	5.88	0.16
40-44	6.65	6.77	+0.12	6.67	-0.10
45-49	6.94	7.23	+0.29	7.27	0.04
TOTAL CEB (N)	4.66 6270	4.43 10776	-0.33	4.49 9372	+0.06

Multivariate Analysis of Children Ever Born

Because children ever born is non-negative count variable we use standard Poisson regression for the multivariate analysis. We report the incidence ratios (exp b) for meaningful interpretation. For categorical variable, a risk ratio significantly greater than one indicates that women with this attribute have higher fertility than those in the reference category. The reverse holds if the risk ratio is significantly less than one.

Table 4 illustrates the following:

- 1) Other urban and rural residents have much higher marital fertility than Addis. This relationship holds mainly only for rural women who are at the end of their reproductive activity. The Addis-rural gap has grown larger over time, and by 2005 rural fertility was almost 50% higher than urban, holding other factors constant.
- 2) Increasing the age at first marriage in the more recent period has a significant negative influence on marital fertility.
- 3) Woman's schooling, especially secondary level education, strongly influences marital fertility, independently of her husband's schooling, especially in rural areas.
- 4) Wealthier households have lower marital fertility in 2000, but it seems to have been reversed in 2005. This will require further analysis.
- 5) Working women have lower fertility. Of course, only 29% of the women had worked in the past week, and another 5% had worked in the proceeding 12 months. Women who worked were more likely to be divorced, separated or widowed, be younger and have less children, and be slightly more educated and urban.

Table 4: Results from Poisson Regression of Children Ever Born – DHS 1990, 2000, 2005

Variable	1990		2000		2005	
	All	Rural	All	Rural	All	Rural
Residence						
Addis Ababa						
Other Urban	1.25**	--	1.09**	--	1.07**	--
Rural	1.16**	--	1.32**	--	1.44**	--
Current age	1.24**	1.25**	1.28**	1.28**	1.26**	1.27**
Age squared	.99**	0.99**	.99**	.99**	.99**	.99**
Age at 1st marriage	1.01**	1.00	0.96**	0.96**	0.96**	0.96**
Woman's education-						
No education						
Primary	0.92**	0.89**	0.99	1.00	0.98	1.02
Secondary+	0.84**	0.71**	0.91**	0.84**	0.83**	0.78**

Partner's education						
No education						
Primary	1.06**	1.04	1.06**	1.05	1.06**	1.05**
Secondary+	1.00	1.01	0.95*	0.98	1.00	1.00
Wealth Status						
Poor						
Middle	NA	NA	0.92**	0.92**	1.02	1.02
Rich	NA	NA	0.90**	0.90**	1.03*	1.02**
Religion						
Orthodox						
Other Christians	1.03	1.03	1.06**	1.04	1.14**	1.12**
Muslims	1.03*	1.02	1.11**	1.08**	1.17**	1.14**
Traditional	1.05	1.05	0.99	0.98	1.09**	1.08*
Media exposure***						
None						
At least 1 media	1.05*	1.12**	1.02	1.03**	0.98	1.00
Work Status						
Not working						
Working	0.95	0.97*	0.96**	0.98*	0.94**	0.95**
TOTAL	5714	4152	10264		9293	

Significance level: ** $p < .01$, * $p < .05$; ***Only radio use asked in 1990; radio, tv ,newspaper asked in 2000 & 2005

When we did a pooled data analysis from the two DHSs, results from the multivariate analysis confirm there is no significant difference between 2000 and 2005 marital fertility (table 5)

Table 5: Results from Poisson Regression of Children Ever Born – DHS 2000 & 2005 Pooled

Variable	DHS 2000 and 2005 Pooled
Residence	
Addis Ababa	
Other Urban	1.08**
Rural	1.37**
Current age	1.27**
Age squared	.99**
Age at 1st marriage	0.96**
Woman's education-	
No education	
Primary	0.99
Secondary+	0.86**

Partner's education	
No education	
Primary	1.07**
Secondary+	0.98
Wealth Status	
Poor	
Middle	0.96**
Rich	0.95**
Religion	
Orthodox	
Other Christians	1.10**
Muslims	1.13**
Traditional	1.02
Media exposure	
None	
At least 1 media	1.00
Work Status	
Not working	
Working	0.95**
Survey Year	
DHS 2000	0.99
DHS 2005	
TOTAL	19748

Significance level: ** $p < .01$, * $p < .05$

3.3.2 Key Determinants of CPR

Table 6 below compares the levels of key determinants in the use of modern contraceptive methods. The biggest gainers, women not working (see shaded box), increased their use by over 12 percentage points; and women who visited a health clinic in the past 12 months (shaded). The family planner worker visits were important in 2000, but by 2005 there was a greater expansion of health services and more referrals of women to clinics for injectables. The fact that women who had worked for money in the past week had lower CPR is probably a reflection of their unstable marital status and their need to work.

Table 6. Changes in Key Determinants of Current Modern CPR Use, 2000-2005

Determinants	2000 (7.8)	2005 (14.5)	Pct. dif. (6.6)
Rural residence	4	11	6.7
Illiterate woman	5	10	5.4
Woman - working	7	13	5.4

- not working	9	21	12.2
Woman age 15-19	4	8	4.6
Poorest wealth quintile	4	4	.5
FP worker visited	20	21	.9
Visited health center	13	27	14.1

Note: *Colored cells show unexpectedly large point differences

3.3.3 Changes in key determinants of contraceptive prevalence rate

Table 7 below shows that while utilization of ANC did not increase much over the five-year period (and remains at the lowest level in SSA), contraceptive prevalence more than doubled.

In general, education is an important factor for antenatal visit. Having higher level of education increases the likelihood of one or more visits (both the woman's and her partner's education). Women from wealthier households are more likely to make antenatal visits. Barriers such as accessibility to clinic and culture have a negative impact on antenatal visits. Media exposure positively influences antenatal visits.

Table 7: Change 2000-2005 in Determinants of Current CPR: Predicted Probability* of Use

Determinants	1990	2000	2005
Place of Residence-Addis	19.3	11.2	22.4
Other Urban	13.0	9.3	16.2
Rural	1.2	4.3	9.3
Woman's Education- None	1.1	4.2	9.3
Primary	8.1	8.9	13.0
Secondary	29.8	13.8	18.5
Partner's Education- None	.92	4.4	9.7
Primary	3.7	9.4	12.0
Secondary	16.2	6.0	12.0
Employment Status- Not working	3.1	4.4	9.8
Working	2.2	5.7	13.2
No. Living Children 0	--	1.8	3.7
1-2	2.0**	3.8	9.5
3-4	2.6	6.1	11.4
5+	3.2	9.2	15.2
Wealth Status- Lowest		3.0	3.8
Second	0.7***	3.1	8.2
Middle		3.9	12.7
Fourth	10.0***	5.7	15.5
Highest		11.4	20.8
Visited Health Facility last 12m:	--		
No		4.0	9.0
Yes		6.6	15.4
Visited by FP worker last 12 m:	--		
No		5.0	10.4
Yes		9.8	13.7
Media Exposure- None	1.3	4.7	9.3
1+	11.4	6.0	12.5
TOTAL (n)		9139	

Note: * predicted probabilities from multivariate logistic regression obtained by holding variables at their mean value; RED= biggest changes proportionally in 2005;

= <=2 children; *Higher wealth is a corrugated iron roof on house; lower is no iron roof

5. DISCUSSION

5.1 Lagging Rural Fertility

The fertility rate, which had descended from over 7 in the 1980s to around 5.5 in 1997-1999, has stalled at this high level in 2002-2004, mainly in the rural areas where 85% of the population live.

Will rural fertility resume its downward trend? The signs are positive in that CPR is rising rapidly in rural areas, and age at marriage and female education are rising too, but also desired family size is still quite high.

5.2 Growing Inequities

The inequity in fertility grew between 2000 and 2005 DHSs most in residence (Addis Ababa from 32 to 44% higher) and education (secondary education from 4 to 22% higher), but lowered in wealth and in media exposure (table 8). In terms of contraceptive use, the gaps decreased in residence and education, but increased in wealth and media exposure.

Table 8 Changes in the Predictive Probability by Inequity Indicators

Indicator- 2000 vs 2005	Residence Addis vs Rural	Mother's Edu Second vs None	Wealth High vs Low	Media Expos. Any vs None
Fertility 2000	+ .32	-.04	-.9	+0.02 ns
2005	+0.44	-.22	-.02	0.0ns
CPR 2000	11 vs.4	14 vs.4	11 vs.3	6 vs.5
2005	22 vs. 9	19 vs. 9	21 vs. 4	13 vs 9

Red=gap increased by 2005; Blue: gap decreased by 2005

5.3 High Value and Demand (although declining) for Children

Mean ideal family size in rural areas was 5.6 (4.1 in urban) in 2000, and remained high but declined almost one child to 4.7 (3.4 for urban) in 2005 (it was 5.1 among all illiterate women). The percentage of currently married rural women 15-49 who want no more children rose from 32% (vs 40%urban) in 2000 to 42% (vs. 48% urban) in 2005. It is interesting that the increase was greatest in women with no education, rising from 32% to 43%, compared to secondary educated women where it stayed at 37%.

5.4 Unmet Need for Family Planning

There was little change in the five year period, lowering slightly from 35.8% to 33.8%. The overall decline in unmet need was higher in urban (from 25 to 17%) than in rural areas (from 37.3 to 35.8%). The overall magnitude was only 4% decline in rural areas as compared to a 32% in urban areas. Two of the three largest regions (Oromiya and Southern) actually had increases in unmet need (14 and 5%, respectively).

5. CONCLUSIONS

5.1 The Stalled Rural Fertility Decline 2000-2005

Overall, one can say that the national demographic transition has started in Ethiopia since 1990, particularly in mortality declines (from over 200 in 1985-1990 to 123 in 2001-2005 in U5MR) and in urban fertility (from 3.5 to 2.4). In fact, by the 1997-2000 period, the TFR in Addis Ababa had declined below replacement levels and has stayed there ever since. This has been found to be due mainly to rather negative factors that have greatly increased age at marriage: unemployment and housing shortage, as well as increased contraceptive use and abortion (Asfaw Y, 2002; Sibanda et al, 2003), and greater female high school attendance.

This continuing urban fertility transition (and revolution in Addis Ababa) has not yet carried over to the rural areas where over 85% of the population lives. Here TFR, which had declined from 6.9 to 6.0 between the three-year recall periods of 1987-1990 (Derg period) to 1997-2000 (initial EPRDF period), stagnated at 6.0 through 2002-2005. This in the face of a rapid increase in rural areas in modern CPR, from very low rate of 1.9% in 1990 and 3% in 2000 to 10.6 in 2005. This jump in rural areas is largely attributable to the expansion of community-based reproductive health programs and the rapid population of the injectable methods (Assefa, 2005; Pathfinder, 2008).

The situation in the rural areas between 2000 and 2005 was perceived by its inhabitants to be of worsening climate, food insecurity, the unresolved border conflict and other instability (Marcos E. and Gebre-E K., 2003; Lindstrom and Gebre-E K., 2005; Teller et al, 2005). While there were improvements in access to health and education, two droughts, rising food prices and growing land scarcity and environmental degradation increased vulnerability to shocks and related health and nutrition risks (Teller et al, 2005). Over 13 million (over nearly one-quarter) of the population have been highly affected by food insecurity, and even now, after 3 years of good harvests, some 6-8 million are chronically food insecure (DPPA/FEWSNet, 2008)

Thus, since rural fertility stalled in the early 21st century, and mortality and malnutrition still at very high levels, there are still many demographic and related development issues to be addressed:

- 1- Rapid population growth rate: leveled off at a high level of 2.7% in the 1990s, but with lower mortality and stalled fertility since 2000 period, will it increase again?
- 2- The high demand for children: even in light of some reduction in ideal family size and additional children, will the increased CPR result in more consistent use of reliable methods that both lengthen spacing, as well as stop pregnancies over aged 35?
- 3- Community-based RH services: with the rapid expansion of the Health Extension Package to more isolated, populated rural areas, will the high quality of FP services by CBRHA be diluted under the new and highly tasked, polyvalent health extension workers
- 4- Age at marriage: rising rapidly even in very Orthodox Northern rural areas, will mean age at first marriage reach the legal minimum age at marriage of 18 more quickly?
- 5- Poverty, illiteracy and rural residence inequalities: will these continue to widen in fertility, even though they are narrowing in contraceptive use

5.2 Policy Implications

Ethiopia has accelerated its updating of policies that should affect the demographic transition, including the 1993 Population Policy (National Office of Population, 2003), the 2006 Reproductive Health Strategy (Ministry of Health), and the 2006 Poverty Reduction Strategy (PASDEP/MoFED). The main demographic policy issues seem to be how to accelerate the fertility transition in rural areas and shorten the time lag (of the fertility stall) so that population growth rates will come down and relieve one of the deterrents to poverty alleviation, food insecurity and epidemic disease. It is this hope that the World Bank has defined as the Demographic Bonus (WB, 2007).

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