

**Gender, Economic Well-being, and Children's Access to Schooling in
Kinshasa: Outcomes in the Presence of Prolonged Economic Crisis***

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Abstract

Previous research on the relationships linking economic well-being, gender, and children's access to schooling in Kinshasa, capital of the Democratic Republic of the Congo (DRC) and the second-largest city in sub-Saharan Africa, has documented the importance of gender and economic well-being with respect to who attends school in the city and progress made in school. That research utilized data from a 1990 survey. Beginning very soon after that survey was carried out, the DRC experienced a protracted period of economic crisis, characterized by an unbroken 12-year stretch during which GDP per capita declined each year. This paper uses data for Kinshasa from the Demographic and Health Survey carried out in the DRC in 2007 to examine these same factors – school enrollment and progress in school – to see how they have changed and how, if at all, the relationships among gender, economic well-being, and school attendance and progress have changed since 1990.

I. Introduction

There is considerable evidence that in developing countries, family economic well-being is a key determinant of children's access to and progress in school (e.g., see Schultz, 1993; Lloyd and Blanc, 1996). In addition, family economic well-being may also be linked to gender differences in access to schooling. Some scholars have suggested that greater family economic well-being is associated with reduced gender inequality in investments in schooling (e.g., see Schultz, 1993; Parish and Willis, 1993), but other researchers have found evidence that does not support this view (cf., Deolalikar, 1993; Lloyd and Blanc, 1996).

Previous research on the relationships linking economic well-being, gender, and children's access to schooling in Kinshasa, capital of the Democratic Republic of the Congo (DRC) and the second-largest city in sub-Saharan Africa, has documented the importance of gender and economic well-being with respect to who goes to school in the city and progress made in school (Shapiro and Tamashe, 1999, 2001, 2003). That research utilized data from a 1990 survey. Beginning soon after that survey was carried out, the DRC experienced a protracted period of economic crisis, characterized by an unbroken 12-year stretch during which GDP per capita declined each year. This paper uses data for Kinshasa from the Demographic and Health Survey carried out in the DRC in 2007 to examine these same factors – school enrollment and progress in school – to see how they have changed and how, if at all, the relationships among gender, economic well-being, and school attendance and progress have changed since 1990.

The next section of the paper provides a discussion of the economic difficulties experienced by Kinshasa and the DRC over the past 35 years. In brief, a protracted period of poor economic performance from the mid-1970s until 1990 was followed by over a decade of an initially more severe and steady economic decline beginning in 1990. Following the overview of

the economic situation, the paper examines descriptive data on school enrollments and progress in school with a focus on differences by gender and by economic well-being, and examination of how the levels and differences have changed over time.

The final substantive section of the paper, after the descriptive analyses, reports results of multivariate analyses of school enrollment and educational attainment (progress in school, given age) in 2007, paralleling analyses carried out with the 1990 data. Those earlier analyses were estimated separately by gender and age group, controlling for individual year of age, economic well-being, and several other characteristics, including the child's relationship to the head of the household, whether the household head was female, and ethnic group. Comparison of results for 2007 with those for 1990 allows us to determine whether the economic difficulties of the intervening years are associated with changes in the determinants of school enrollment and educational attainment. We focus in particular on the relationships between economic well-being and gender, on the one hand, and school outcomes, on the other. The paper concludes with a discussion of prospects for school enrollment and educational attainment in Kinshasa in the future.

II. From Chronic Crisis to Acute Crisis

Following independence from Belgium in 1960, the Congo experienced five years of political instability, including civil war and ethnic strife. In 1965 General Joseph Désiré Mobutu seized power in a coup d'état, and for the better part of a decade the city and the country experienced a period of political stability and economic growth. The former would continue, more or less, but not the latter. In particular, by the mid-1970s the combined effects of poor economic policies (including expropriation of businesses owned by foreigners and turning those

businesses over to unqualified nationals, known then as Zairians) and the sharp decline in world copper prices that took place about that time (copper was by far the major source of export earnings and government revenues) were to precipitate a long, downward slide of the Congolese economy. Exacerbating the situation was the fact that the Mobutu regime was characterized by high levels of corruption at all levels of government – what some political scientists referred to as “kleptocracy.” This further contributed to what came to seem like a period of chronic crisis.

Economic growth from year to year was highly variable, and more often negative than positive. Likewise, inflation was persistent, ranging from roughly 25 to over 100 percent per year (Shapiro and Tollens, 1992), and the real standard of living of the population declined by almost 40 percent between 1973 and 1990 (Heston et al., 2006). This chronic crisis was accompanied by stagnation in the modern sector of the economy and steady growth in the informal sector.

Beginning in the latter half of 1990, the chronic economic crisis became acute. After a number of years of inflation averaging roughly 60 percent per year, very rapid inflation of 2,000-3,000 percent per year quickly emerged, as the country’s monetary authorities essentially abandoned any efforts to adhere to a structural adjustment program that had been adopted in the 1980s. The country was already in turmoil politically, with increasing calls for democracy and the ouster of President Mobutu. Following a little more than a year of very rapid inflation, in late September of 1991 soldiers, who had seen the real value of their salaries shrink to nearly nothing, initiated rioting, looting and generalized civil disorder, first in Kinshasa and then in urban centers elsewhere in the country. The modern sector of the country’s economy, much of it based in Kinshasa, shrank considerably, and foreign donors pulled out of the country. A second

round of looting and pillaging, this time only by the military, took place at the end of January in 1993.

A rebellion that began in late 1996 and that was made possible by assistance from neighboring Rwanda resulted in the ouster of President Mobutu in May of 1997, but civil war reemerged in 1998. Rwanda and a number of other African nations were involved in the civil war, which continued officially until 2003 and resulted in substantial loss of life and destruction of infrastructure. The 1990s, then, was a decade of a severe downward economic spiral in the DRC and in Kinshasa.

Estimated real GDP per capita for the Congo for the period from 1970 to 2004 is shown in Figure 1 (data are from the Penn World Tables, Heston et al., 2006). From a peak of nearly \$1,600 in 1973, real GDP per capita has fallen by almost 75 percent, to only about \$400 in 2004. Figure 2 shows the data from Figure 1 expressed as annual changes. Here it is apparent that between 1975 and 1990 the economic situation was bad: negative growth was realized during about three-quarters of the years. But after 1990 the situation was terrible: there is an unbroken string of negative growth from 1991 through 2002, and GDP per capita fell by more 60 percent during the period.

Given the substantial economic deterioration that has taken place, it is of interest to see what has happened to children's access to schooling and progress in school. To what extent have school enrollments and the pace of passage through school been affected by the adverse economic conditions? And in the face of the prolonged acute economic crisis since 1990, have there been changes with respect to differences by gender and family economic well-being in school outcomes? These are the questions to which we now turn, with an overview of relevant data.

III. School Enrollment and Progress in School: Differences by Gender and by Economic Well-Being

We focus here on two measures pertinent to children's schooling: school enrollment rates and progress in school. With respect to progress in school, our earlier work followed the approach of Lloyd and Blanc (1996) in their study of children's schooling in sub-Saharan Africa. We examined the percentage of youth aged 10-14 who had reached the fourth grade and the percentage of those aged 15-19 who had reached the ninth grade. We will refer to these measures as educational attainment. A student beginning first grade at age 6 and passing through school with no repetition would reach the 4th grade at age 9 and the 9th grade at age 14. However, due to both delayed entry to school and frequent grade repetition, the percentages of those aged 10-14 who have reached the 4th grade and especially the percentages of 15-19 year-olds who have reached the 9th grade are well below 100.

Table 1 shows enrollment rates by age group and gender, for 1990 and 2007. For five of the six groups shown in the table, enrollment rates in 2007 are lower than they were in 1990 (the exception is boys aged 6-9). For the most part the changes are small (differences of 1-4 percentage points), except for boys aged 15-19, whose enrollment rate fell by 7 percentage points.

Clearly, then, the adverse economic conditions since 1990 have not sharply reduced enrollment rates from their 1990 levels. However, since the longer-term trends in school enrollment rates (going back to 1955) entailed sustained increases in school enrollment (Shapiro and Tambashe, 2003, ch. 2), it seems most likely that the severe economic crisis during the 1990s and early 2000s has resulted in distinctly lower enrollment rates as compared to those that would have been observed in 2007 had the economy not been in such terrible shape.

In 1990, peak enrollment rates were for youth aged 10-14, and there was no gender difference in enrollment rates among those aged 6-9, a slightly higher enrollment rate among boys 10-14 as compared to their female counterparts, and a distinctly larger gender gap in favor of boys among those aged 15-19. By 2007 peak enrollment is still at ages 10-14, and there are small gender gaps in favor of boys among those aged 6-9 and 10-14 as well as a larger gap in favor of boys among those aged 15-19. Hence, while overall enrollment rates declined a bit, gender gaps did not change much, with a small one emerging in favor of boys aged 6-9 while the gap among those aged 15-19 declined, reflecting the comparatively large drop in enrollment of boys aged 15-19.

Comparisons of changes in enrollment rates by single year of age between 1990 and 2007 are shown in Figures 3 and 4 for males and females, respectively. Among males, enrollment rates for those under age 11 are typically higher in 2007, particularly those aged 6 and 7. From age 11 on, the rates are more often lower. Among females, there is considerable variability in the changes over time, but more often than not enrollment rates are higher in 2007. Hence, the overall gender gap in enrollment rates has diminished somewhat, largely because of the combination of reduced rates for boys and increased rates for girls among the older youth.

Examination of enrollment rates by single year of age in the earlier research based on data from 1990 found that there were almost no gender differences in school enrollment rates for children under age 11, small differences in favor of boys from ages 11-15, and a widening gender gap after age 15 up to age 25. These rates are shown in Figure 5. The comparable data for 2007 are shown in Figure 6. Here it is apparent that the absence of any consistent differences by gender now extends to age 18. Further the gender gap in favor of males after age 18 is smaller than the corresponding gap in 1990.

Educational attainment, showing the percentage of youth aged 10-14 having reached the 4th grade and the percentage of those aged 15-19 having reached the 9th grade, is shown in Table 2. For this measure, there is no evidence of adverse effects of the economic situation on progress in school. Between 1990 and 2007 rates are essentially unchanged among those aged 10-14 and boys aged 15-19, and they are 7 percentage points higher in 2007 among girls aged 15-19. Hence, there remains no gender gap on this measure among those aged 10-14, while among those aged 15-19 the previous gap in favor of boys has been eliminated by 2007.

Table 3 shows enrollment rates by age and gender as well as according to an index of economic well-being. For each year, the index represents a count of consumer durable goods owned by the household. In 1990, we used a list of 13 such goods to create a measure which we then divided into five categories. For 2007, the DHS data provide only a more limited number of items, and the resulting index is divided into four categories. Hence, we cannot compare index values directly across years, but they do give us an idea of how the outcomes of interest vary according to economic well-being within each year.

It is apparent from the table that higher economic well-being is generally associated with higher enrollment rate. This is evident for both years, all age groups, and for both boys and girls. The gap between the highest and lowest economic index groups tends to be smallest among those aged 10-14 (the peak ages for enrollment overall) and larger for the younger and older age groups. In addition, the gap is somewhat wider in 2007 than in 1990 for the two younger groups, while it is a bit narrower in the older group. Otherwise, there do not appear to be any systematic patterns in the changes between 1990 and 2007.

Educational attainment of boys and girls by age group and by index of economic well-being is shown in Table 4. As with enrollment, in both years progress in school is distinctly

higher for those youth from more-advantaged economic backgrounds, for both boys and girls and for both age groups. Apart from the distinctly higher educational attainment of older girls from the highest economic group, there aren't any noteworthy changes in educational attainment by age, gender, and economic well-being between 1990 and 2007.

IV. Multivariate Analyses of Educational Attainment in 2007

The determinants of educational attainment in 2007, by age group and gender, are shown in Table 5. The table reports coefficients from logistic regressions in which, for those aged 10-14, the dependent variable equals one if the individual had reached the 4th grade and zero if not, while for those aged 15-19, the dependent variable equals one if the individual had reached the 9th grade and zero if not. The independent variables include age (entered in a quadratic specification) and a series of dummy variables identifying the economic well-being of the youth's household, the gender of the head of the household, and the relationship of the youth to the head of the household.

The analyses reported in Table 5 indicate that educational attainment increases with age, but at a decreasing rate. There are highly significant differences in educational attainment by economic well-being: for all four age-sex groups in the table, relative to individuals in the next-to-highest economic well-being category, those in the lowest category have significantly slower progress in school while those in the highest category have significantly more rapid progress in school. The gender of the head of the household is not significantly related to a youth's educational attainment. Youth who are not children of the household head but instead siblings, nephews, nieces, and others tend to have lower levels of educational attainment, other things

equal, with the differences being significant for nieces aged 10-14, nephews aged 15-19, and females aged 15-19 in the “other” category.

By comparison, in 1990 we also found similar patterns with respect to age and economic well-being. Girls aged 10-14 in female-headed households were significantly less likely to have reached the 4th grade, while older youth of both sexes in female-headed households (but especially males) were significantly more likely to have reached the 9th grade. And in 1990 there were considerably more significant negative coefficients for youth who were not children of the head of the household.

In order to assess the implications of the equations shown in Table 5 for differences in educational attainment by gender and economic well-being, we have calculated predicted probabilities of reaching the 4th grade for youth aged 10-14 and of reaching the 9th grade for youth aged 15-19 by single years of age. Figure 7 highlights the impact of economic well-being, by comparing the predicted probability of achieving the indicated level of schooling for males and females aged 10-14 and 15-19, for those with the lowest economic index value and those in the highest economic index category. Figure 8 focuses on gender differences – taking the same predicted values as those in Figure 7, but rearranging them so as to compare boys and girls of given age and economic well-being.¹

It is apparent from the four panels in Figure 7, for the four age-sex groups, that high economic well-being translates into a sharply higher likelihood of reaching the age-relevant grade level for boys and girls and for younger and older youth. For those aged 10-14, the differences by economic well-being are especially large at the beginning of the age range (age 10), reflecting the greater likelihood of delayed entry to schooling among children from

¹ For these predicted values, we assume that the household head is male and that the youth is a child of the head.

disadvantaged households. These differences diminish as youth age, and are comparatively modest by age 14. Among those aged 15-19, the opposite is true: differences between advantaged and disadvantaged youth are comparatively small at age 15, but widen with age, especially among females.

In Figure 8 we see that holding age and economic well-being constant, gender differences are rather modest at all ages. The only exceptions are among those aged 19, where the predicted probability of reaching the 9th grade is distinctly higher for males, and particularly so for the lowest economic index category.

Comparison of the results in Figures 7 and 8 with those from 1990 shows some similarities and some differences. As in Figure 7, among those aged 10-14 gender differences were widest among 10-year-olds and narrowest among 14-year-olds, while among those aged 15-19 the differences widen as one goes from the youngest to the oldest in the age interval. In contrast to Figure 8, however, in 1990 there was a clear gender difference in favor of males among those aged 10-14 and in the lowest economic well-being category, while there was a more pronounced difference in favor of females aged 15-19 and in the highest economic index category.

V. Future Prospects for School Enrollment and Educational Attainment in Kinshasa

This paper has documented that despite the very adverse economic conditions that have prevailed in Kinshasa for most of the period since 1990, school enrollment rates as of 2007 were not very far from their levels in 1990, for the most part. While acute economic crisis did not result in much of a retreat from school enrollment levels that had already been realized, it seems most likely that – given the long-term increase in enrollment rates going back over half a

century, including during a period of chronic crisis from the mid-1970s until 1990 – the acute economic crisis since 1990 did reduce enrollment rates from what they would have been in the absence of severely adverse economic circumstances.

What the future holds with respect to school enrollment rates will presumably depend on the performance of the Congolese economy. If progress can be made and real GDP per capita increases, the expectation is that enrollment rates will increase. This would especially be the case if labor market developments provided incentives for acquiring higher levels of schooling.

As for educational attainment – i.e., progress in school, this aspect of children's schooling in Kinshasa appears to be less sensitive to the state of the economy.

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Fig. 1. Real GDP per Capita, 1970-2004

Source: Penn World Tables (Heston et al., 2006)

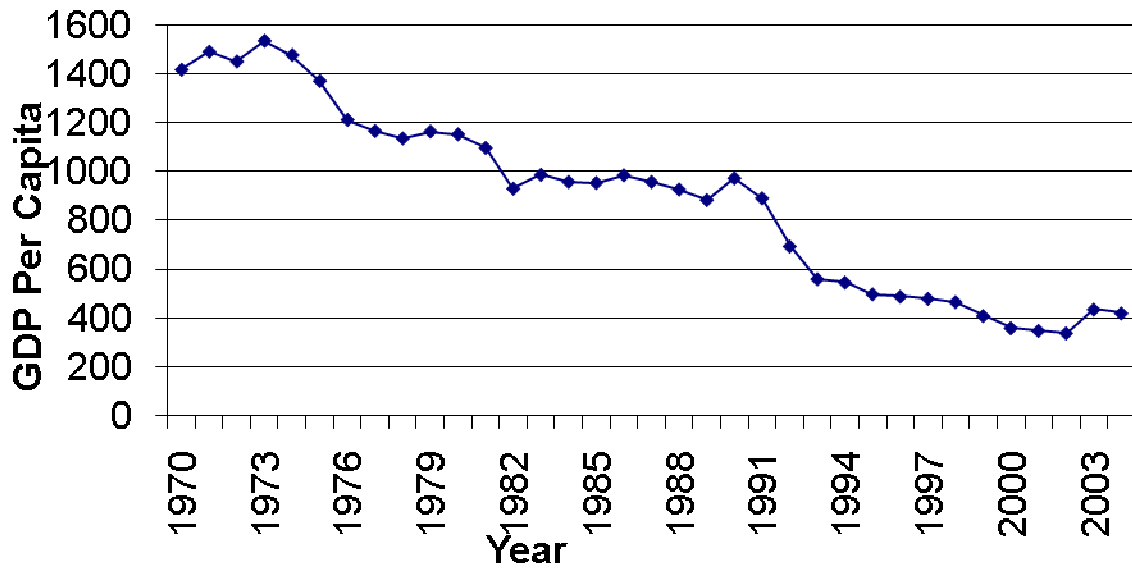


Fig. 2. Percent Change in GDP per Capita, 1971-2004

(calculated from data in Fig. 1)

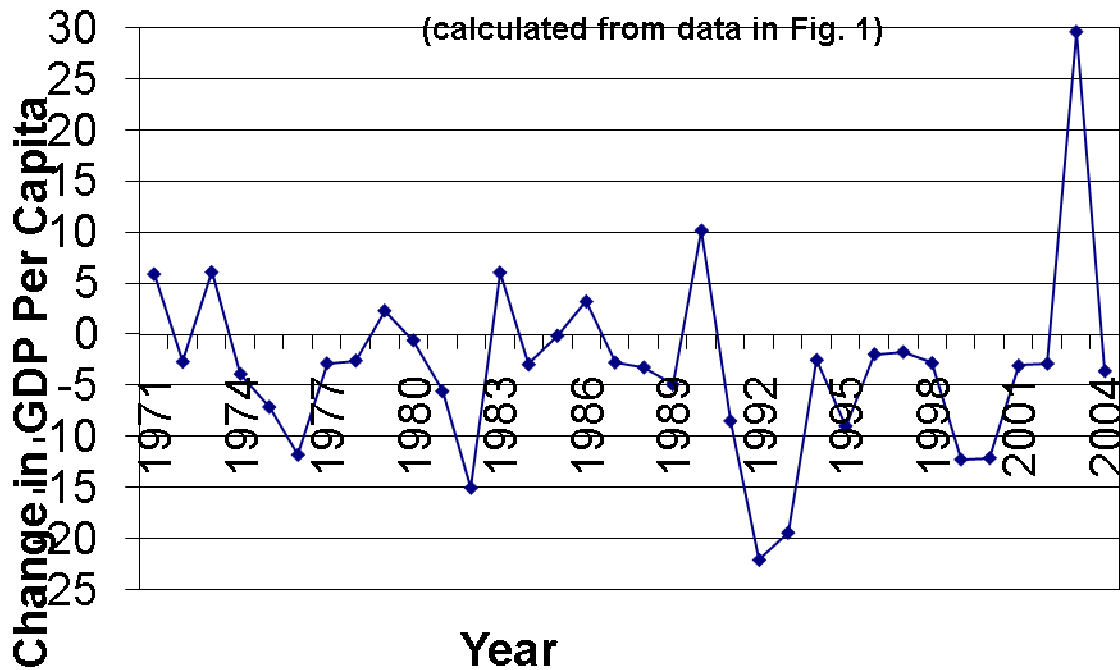


Fig. 3. Male Enrollment Rates, 1990 and 2007

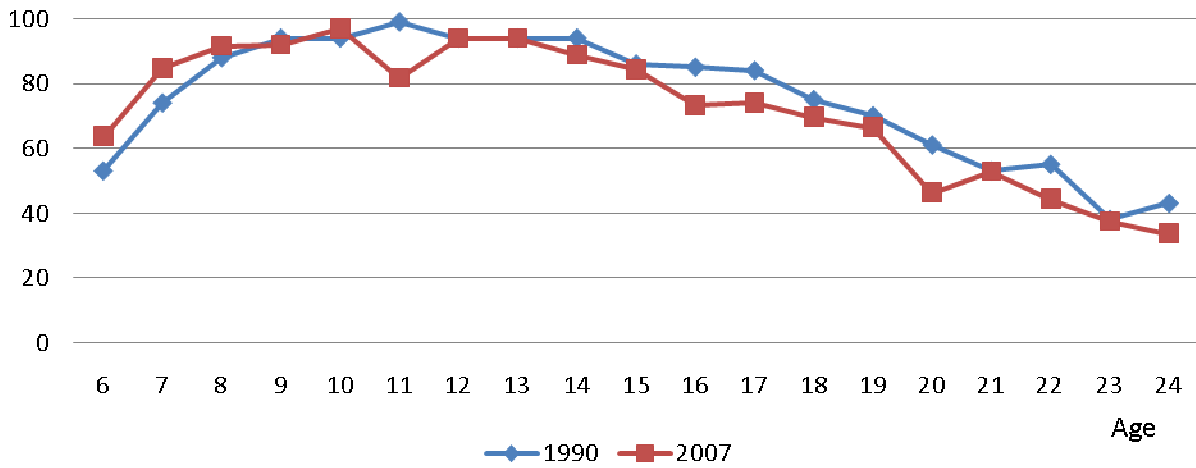
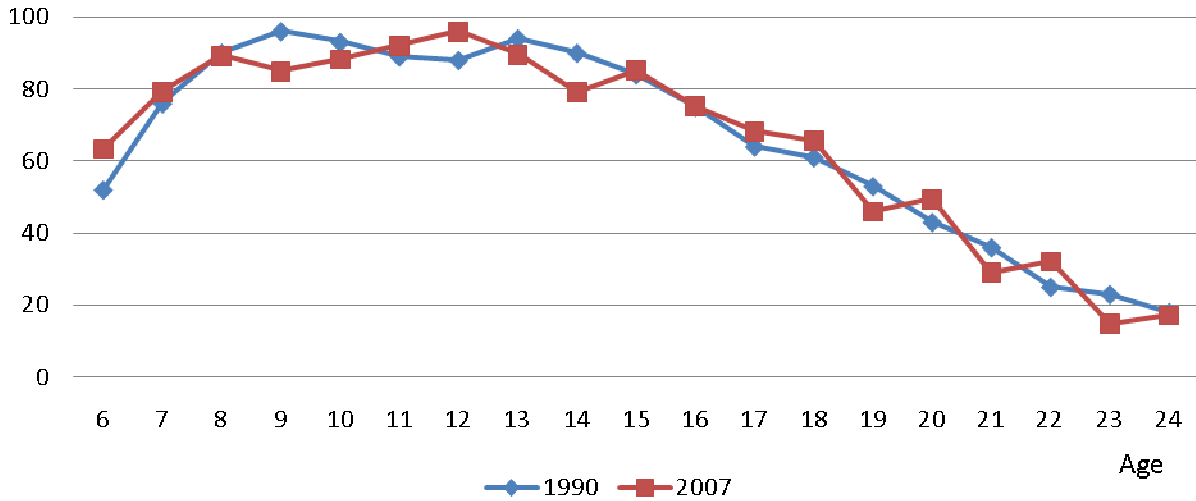


Fig. 4. Female Enrollment Rates, 1990 and 2007



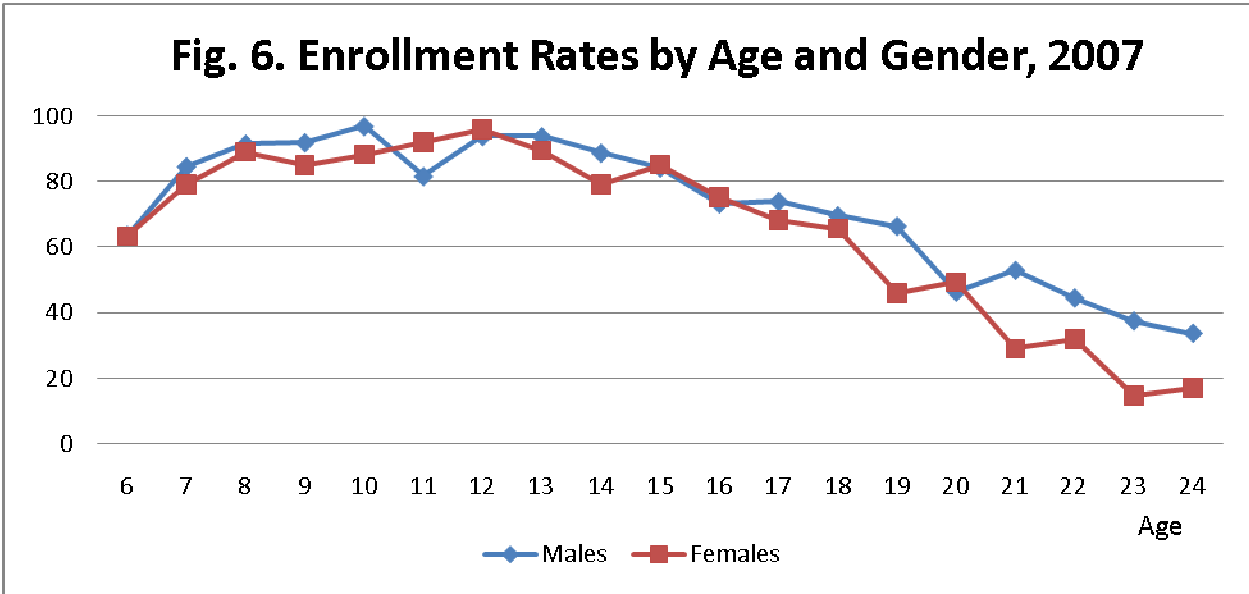
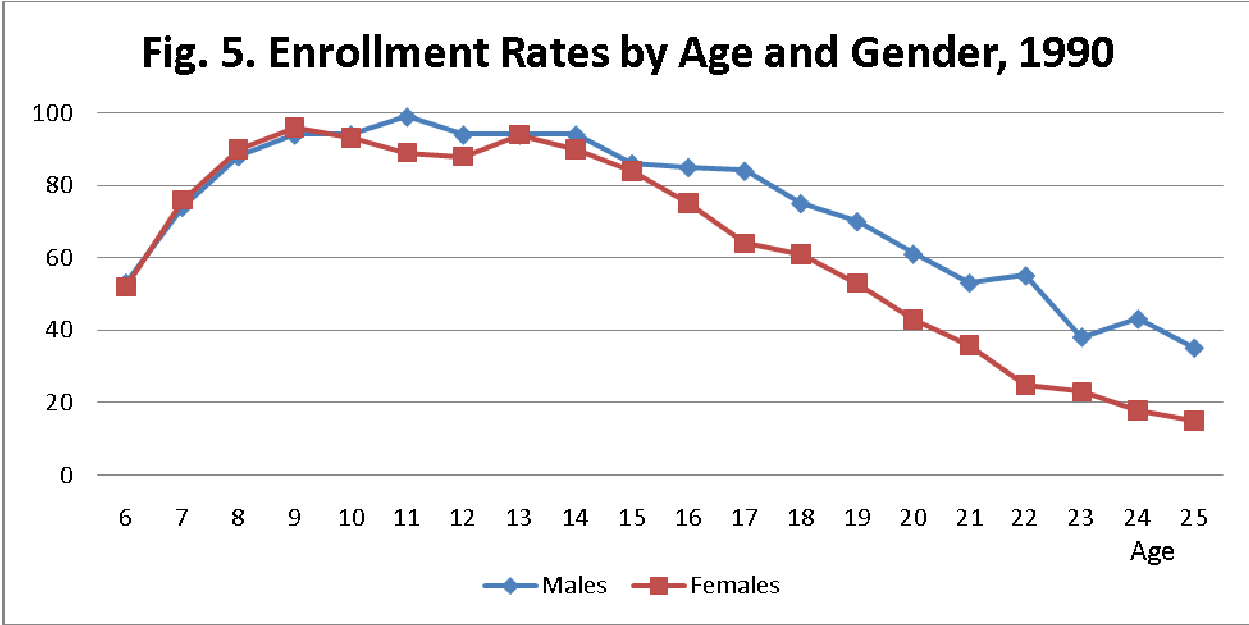


Figure 7. Predicted Educational Attainment by Gender, Age, and Economic Index, 2007

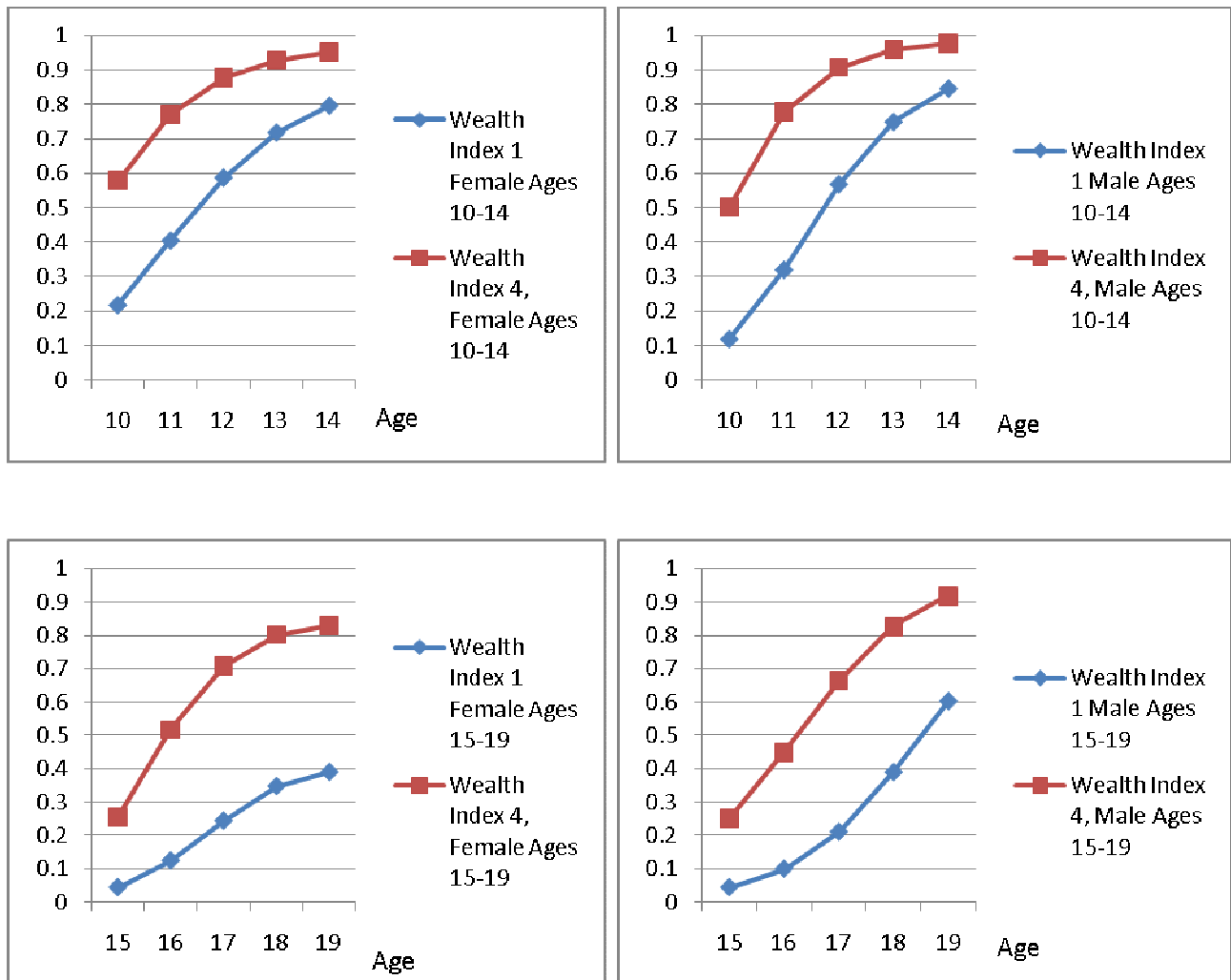


Figure 8. Predicted Educational Attainment by Economic Index, Age, and Gender, 2007

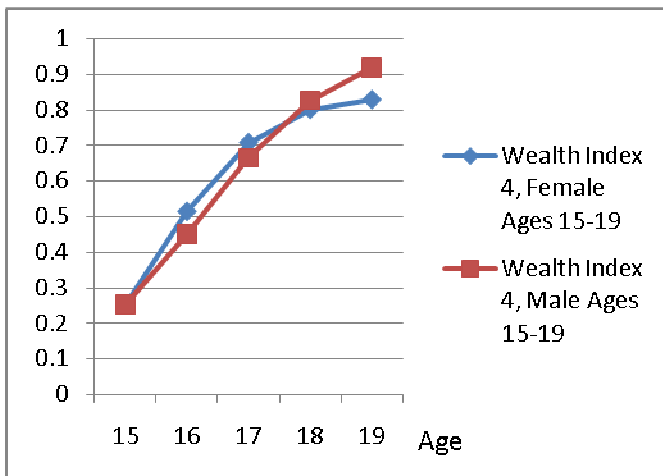
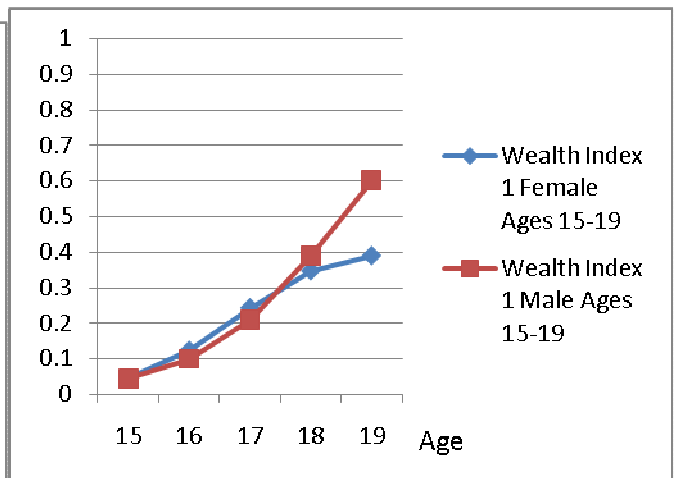
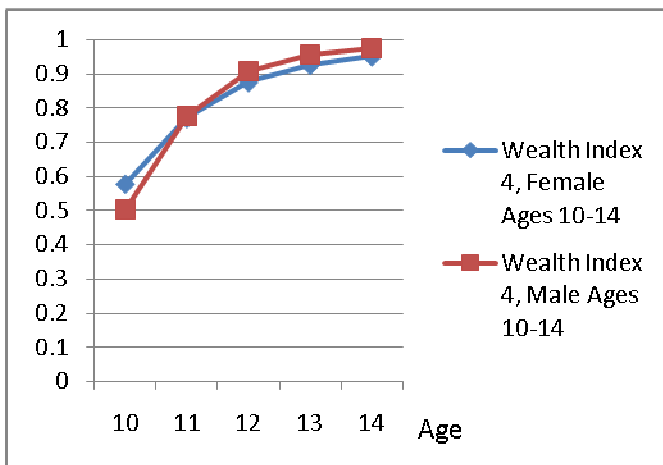
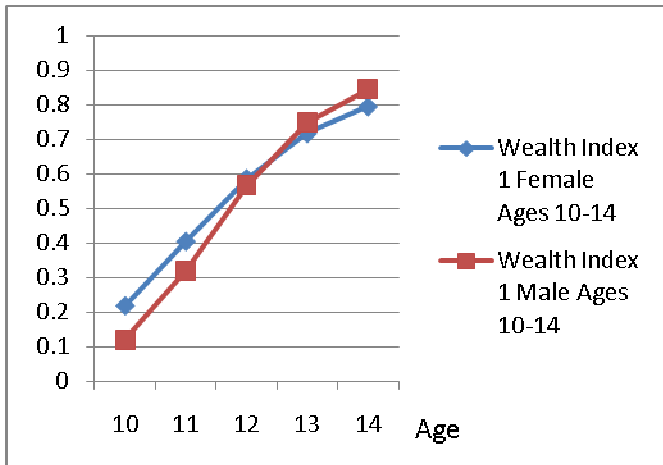


Table 1. Enrollment Status, by Age Group and Gender, 1990 and 2007

	1990		2007	
Age Group	Boys	Girls	Boys	Girls
6-9	80	81	82	78
10-14	95	91	91	88
15-19	81	68	74	67

Figures show the percentage enrolled in each age-gender group.

Table 2. Educational Attainment, by Age Group and Gender, 1990 and 2007

	1990		2007	
Age Group	Boys	Girls	Boys	Girls
10-14	70	68	69	68
15-19	41	35	41	42

Figures show the percentage of those aged 10-14 who have reached the 4th grade and the percentage of youth aged 15-19 who have reached the 9th grade.

Table 3. Enrollment Status, by Age Group, Gender, and Economic Well-Being, 1990 and 2007

	1990					2007			
	Percentage Enrolled					Percentage Enrolled			
	Index of Economic Well-Being					Index of Economic Well-Being			
Age Group	0	1	2-3	4-5	6+	1	2	3	4
6-9 Boys	65	80	87	86	90	69	77	88	97
6-9 Girls	74	74	83	83	93	52	80	82	89
10-14 Boys	92	91	96	99	100	79	95	91	98
10-14 Girls	86	90	92	94	96	77	86	94	93
15-19 Boys	68	77	83	89	92	73	65	70	88
15-19 Girls	54	52	73	76	87	59	58	66	82

Table 4. Educational Attainment by Age Group, Gender, and Economic Well-Being, 1990-2007

	1990					2007			
	Educational Attainment					Educational Attainment			
	Index of Economic Well-Being					Index of Economic Well-Being			
Age Group	0	1	2-3	4-5	6	1	2	3	4
10-14 Boys	59	63	71	80	82	50	64	71	84
10-14 Girls	55	68	67	77	82	54	68	68	78
15-19 Boys	27	35	35	59	57	25	31	45	57
15-19 Girls	23	23	31	48	56	23	36	40	64

Educational attainment measures the percentage of those aged 10-14 who have reached the fourth grade and the percentage of those aged 15-19 who have reached the ninth grade.

Table 5. Determinants of Educational Attainment, by Age Group and Gender, 2007

Categories	Variables	Ages 10-14	(Ages 10-14)	Ages 15-19	(Ages 15-19)
		Females	Males	Females	Males
Age	Age	2.53	3.461+	6.105*	1.02
	Age Squared	-0.078	-0.106	-0.16*	-0.004
Economic Well-Being	Economic Index = 1	-0.722*	-1.403**	-0.943**	-1.223**
	Economic Index = 2	0.148	-0.252	-0.253	-0.741*
	Economic Index = 3	-	-	-	-
	Economic Index = 4	0.87**	0.597*	1.075**	0.788*
Gender of Head of Household	Female Head	0.109	0.142	0.363	0.108
	Male Head	-	-	-	-
Relationship to Head of Household	Child	-	-	-	-
	Sibling	-0.289	-1.461	0.05	-0.873
	Nephew/Niece	-0.785*	-0.693	-0.526	-0.842*
	Other	-0.437	-0.485	-0.679*	-0.212
	Constant	-18.07+	-24.614*	-57.728*	-16.248

For ages 10-14, the dependent variable is equal to 1 if the individual had reached the fourth grade and 0 if not. For ages 10-19, the dependent variable equals 1 if the individual had reached the ninth grade and 0 if not.

**Coefficient significant at the .01 level.

*Coefficient significant at the .05 level.

+Coefficient significant at the .10 level.