STRUCTURAL ADJUSTMENT AND LIFE EXPECTANCY AT BIRTH

The chapter empirically examines the claims that structural adjustment has reduced and in some cases reversed the pace of improvement in life expectancy at birth. The analysis included comparisons of life expectancy at birth in 1998 and the gains made between 1978 and 1998 between adjusted and non-adjusting countries. Analysis was stratified by national income category and region.

Life expectancy at birth expresses the life span a member of a certain society will live, given the mortality patterns in this society. Therefore, life expectancy is considered one of the most important known indicators of human survival and well-being. The Life expectancy at birth has been monitored by several international organizations such as the World Health Organization (WHO), the United Nations’ Development Program (UNDP) and the United Nations’ Fund for Children (UNICEF) is one of the most important indicators of health and welfare. For example, the UNDP incorporates life expectancy at birth in its famous Human Development Index that evaluates the performance and the progress of nations in human development. Furthermore, this indicators have been widely used in research on health inequalities and demography.

Life expectancy at birth has roughly tripled over the course of human history. However, great disparities still exist between developed and developing countries. Industrialized countries have managed to achieve impressive gains in life expectancy throughout the last century. Evidence from these countries indicate that early gains were due to a general improvement in living standards and organized efforts to control the spread of infectious disease. It was proven that reductions in infant and
child mortality in the late 19th and early 20th century led to a rapid increase in life expectancy at birth. Currently infant and child mortality have stabilized around figures that represent the lowest the human race have ever known. Therefore, further gains in life expectancy due to further reduction in child mortality are not expected. Since 1970, the main factor driving continued gains in life expectancy in industrialized countries is a reduction in death rates among the elderly. In particular, death rates due to cardiovascular disease and cancer have declined in recent decades due to a variety of factors, including successful medical intervention.

Developing countries have achieved gains in life expectancy at birth. The magnitude of these gains differs however from country to country and from region to another. The slowest progress have been reported in sub-Saharan Africa, with reversals of human longevity have been indicated in some countries of this region. This is attributed to the rise of child and adult mortality rates due to HIV/AIDS that has swept sub-Saharan Africa in the 1990s.

The opponents of structural adjustment have asserted that the World Bank’s lending have had detrimental effects on life expectancy in the recipient countries. The argument has been advanced that structural adjustment has impacted life longevity through different factors. These include increasing poverty and income inequalities, insufficient nutritional level, environmental degradation, increasing urbanization and deterioration in health care delivery. These claims are examined somewhere else in the thesis. This chapter examines, however, whether or not life expectancy at birth has been affected by structural adjustment lending.

**METHODOLOGY**

Life expectancy at birth were obtained for the 90 countries enrolled in this research. Data were compiled from the World Health Organization Database for two years; 1978 and 1998. Figures for 1987 represent a base-line for life expectancy at birth before any structural adjustment activities were proposed or implemented. Then, several indicators were compared among adjusting and non-adjusting countries. These include: 1) levels of life expectancy at birth in 1998, 2) trends of life expectancy at birth between 1978 and 1998, and 3) the gain in life expectancy at birth in 1998 as a percent from 1978.

Comparisons were stratified by sex, region and country income group to adjust for the effects any of these variables might exert on the relationship between structural adjustment and life expectancy at birth. Analysis of variance and a linear regression model were applied to examine whether differences in any of these indicators between adjusting and non-adjusting countries are statistically significant.
Results

The aggregate results showed that males and females in adjusting countries are expected to live 6 years less than their peers in non-adjusting countries. The mean male life expectancy at birth for the adjusting countries was 57.1 years, compared with 62.9 years for non-adjusting countries. For females, the figures were 60.8 years and 66.8 years, for adjusting and non-adjusting countries, respectively. The difference was statically significant.

However, the difference in life expectancy at birth turned to be insignificant when the country income category was taken into consideration. Moreover, country income-specific mean life expectancy at birth revealed the following interesting patterns:

1) In low income countries the difference decreased to only 3 years. The mean male and female life expectancy at birth for low income adjusting countries were 51.7 and 54.4 years, respectively. This compared to 54.3 and 58 years for males and females in low income non-adjusting countries, respectively.

2) In Lower Middle income countries, life expectancy at birth in adjusting countries was better than non-adjusting countries. The difference was 3 years for males and 4 years for females. The mean life expectancy at birth for lower middle income adjusting countries was 65.9 years for males and 70.3 years for females. The respective figures for Lower Middle income non-adjusting countries were 62.8 years for males and 66 years for females.

3) There was no difference in life expectancy in Upper Middle income countries. The mean male life expectancy at birth was 66.9 years for adjusting countries and 66.8 years for non-adjusting countries. The corresponding figures for females were 72.7 and 71.2 years for adjusting and non-adjusting countries, respectively.

Figures 13 and 14 show the gain in life expectancy between 1978 and 1998 for males and females in adjusting and non-adjusting countries. In general, adjusting countries have achieved to increase male life expectancy at birth by 113 percent and female life expectancy at birth by 112 percent of their levels in 1978. Non-adjusting countries have shown less figures of 109 percent for both males and females. The difference was statistically insignificant.

Again, stratifying the analysis by country income group yielded interesting results. Low and lower middle income adjusting countries achieved higher gains in life expectancy at birth than non-adjusting countries in the same income group. To the contrary, upper middle income adjusting countries performed worse than non-adjusting countries in that regard. Figures showed that life expectancy at birth in low income adjusting countries increased by 113% and 112% for males and females,
respectively. This is compared with an increase of 107% for males and females in non-adjusting low income countries. The gain in lower middle income countries were even better. Life expectancy at birth in adjusting countries increased by 114% for males and females and in non-adjusting countries by 109% for males and by 107% for females. For upper middle income countries, the gain in males and females life expectancy at birth was identical for males and females. It was 109% in adjusting countries and 11% in non-adjusting countries.

Figure 11. Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries by National Income Category

Figure 12. Female Life Expectancy at Birth in 1998 in Adjusting and Non-adjusting Countries by National Income Category
All the differences were insignificant but one. The gain lower middle income adjusting countries made in female life expectancy was significantly different from non-adjusting countries.

In terms of years added to life expectancy, male life expectancy at birth increased 5 years in adjusting countries and 5.4 years in non-adjusting countries. Female life expectancy at birth increased by 6.3 and 5.8 years in adjusting and non-adjusting countries, respectively.

Low income adjusting countries added 5.8 years to male life expectancy, compared with only 3.5 years added by non-adjusting low income countries. The gap was smaller with respect to female life expectancy and averaged at 5.4 and 4.3 years for adjusting and non-adjusting countries, respectively. Adjusting lower middle income countries increased male life expectancy by 8 years, compared with only 5 in non-adjusting countries. The figures for female life expectancy were 8.6 years for adjusting countries and 4.4 years for non-adjusting countries. Finally, male life expectancy increased 5.6 years in adjusting countries and 6.8 years in non-adjusting countries of the upper middle income group. The figures for female life expectancy at birth were 5.7 and 7.2 years, respectively.

Again, the difference was only significant in the gains made in female life expectancy at birth in the lower middle income group. The gain in adjusting countries was 4 years higher than non-adjusting countries.
Regional levels and trends of life expectancy at birth show wide disparities. Sub-Saharan Africa mean male life expectancy increased by 3.3 years over the last two decades from 45.5 years in 1978 to 48.8 years in 1998. Adjusting countries achieved an increase of 3.1 years from 45.2 years in 1978 to 48.3 in 1998. Non-adjusting countries reported quite similar figures. Male life expectancy increased by 3.7 years from 46.6 years in 1978 to 50.3 in 1998. These differences are statistically insignificant.

With respect to female life expectancy at birth, sub-Saharan African countries progress tapered to 2.6 years over two decades, improving from 49.2 years in 1978 to 51.6 years in 1998. The slowdown was witnessed in both adjusting and non-adjusting countries. Adjusting countries increased female life expectancy at birth by 2.7 years from 48.7 years in 1978 to 50.9 years in 1998. The increase in non-adjusting countries was 3 years, from 50.7 years in 1978 to 53.7 years in 1998. Non of the differences was statistically significant.

Countries of the Middle East and North Africa showed significant improvement in life expectancy. The average male life expectancy at birth for the whole region increased by more than 10 years over the past two decades from 55.2 years in 1978 to 65.9 years in 1998. Likewise, female life expectancy at birth increased by 10 years from 57.6 years in 1978 to 68.8 years in 1998. The average increase for males was
10.3 years in adjusting countries from 56 years in 1978 to 66.3 years in 1998. Female life expectancy at birth increased in adjusting countries by 10.9 years from 58.3 in 1978 to 69.2 in 1998. This is compared to 11.5 years increase in non-adjusting countries from 57 years in 1978 to 68.5 years in 1998. Again the differences in males and female life expectancy at birth or the number of years added to these expectancies were not statistically significant.

In Latin and Middle America the averages for male and female life expectancy at birth in 1998 were 67.1 and 72.6 years, respectively. The gain these countries have made throughout the last two decades averaged around 9.5 years for males and 7.1 years for females. The male life expectancy in adjusting countries increased by 7 years from 60.8 years in 1978 to 67.8 years in 1998. Similarly, female life expectancy at birth increased by 7.4 from 65.8 years in 1978 to 73.4 years in 1998. Non-adjusting countries reported improvement in male life expectancy at birth of 4.2 years from 59.8 years in 1978 to 64 years in 1998. The increase in female life expectancy at birth was 5.3 years from 64 years in 1978 to 69.3 years in 1998. The differences though indicate better performance of adjusting countries were statistically insignificant.
Figure 16. Female Life Expectancy at Birth in Adjusting and Non-adjusting Countries by Region in 1998

Figure 17. Gain in Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries in Two Decades by Region
For Asia and Pacific the average male and female life expectancies at birth in 1998 were estimated to be 63.1 and 66.6, respectively. These are 10 years better than the figures for 1978, which were 53.9 and 56.5 years for males and females, respectively. Adjusting countries in the region reported figures of 62.5 years for males and 65.4 years for females in 1998. The corresponding figures for non-adjusting countries were 64.6 and 69.2 years, respectively. The differences in 1998’s figures were statistically insignificant. The trends from 1978 figures showed that adjusting countries have made an improvement of 9 years in male life expectancy from the 53.5 figure of 1978 and of 9.8 years in female life expectancy from the 55.6 figure of 1978. The improvement in non-adjusting countries was estimated at 9.8 years for males (from 54.8 years in 1978) and at 10.6 years for females (from 55.6 years in 1978). Again the differences were statistically insignificant.

Figure 18 and 19 show the gains in male and female life expectancy in 1998 as a percentage of 1978 in Africa. The gain in male life expectancy at birth was 107% in adjusting countries and 109% in non-adjusting countries. The overall gain for the sub-Saharan Africa was 108% and 105% for male and female life expectancy at birth, respectively. The progress is the weakest among all region and wide disparities have been observed among countries.
Figure 18 show that five adjusting countries reported reversals in male life expectancy at birth. These countries are Zambia, Zimbabwe, Uganda, Malawi and Burundi. Zambia male life expectancy at birth in 1998 was 83.3% that reported for 1978. The corresponding figures were 84.6%, 86.7%, 92.9% and 93.2% for Zimbabwe, Uganda, Malawi and Burundi, respectively. Botswana is the non-adjusting countries that reported reversal in life expectancy. The male life expectancy in 1998 was 83.6% of 1978. Five other countries have witnessed no progress at all in male life expectancy at birth. These included four adjusting countries (Congo, Côte d’Ivoire, Kenya and Tanzania) and one non-adjusting country (South Africa).

The progress was modest (< 120%) in 7 non-adjusting countries: Namibia (104%), Democratic Republic of the Congo (107%), Mauritius (110%), Eritrea (111%), Chad (118%), Angola (118%) and Djibouti (119%). On the other hand, 17 adjusting African countries reported modest gains in male life expectancy at birth. These were Central African R (102%), Togo (104%), Burkina Faso (105%), Mozambique (105%), Ethiopia (105%), Lesotho (110%), Cape Verde (112%), Cameroon (113%), Gabon (113%), Nigeria (114%), Benin (116%), Ghana (116%), Comoros (116%), Madagascar (117%), Mali (118%), Mauritania (118%) and Guinea-Bissau (119%). Niger is the only non-adjusting country that reported a more than 120% gain in life expectancy. Finally, three adjusting countries reported progress of more than 120%. These were Guinea, Senegal and Gambia.
Figure 19 shows the progress of sub-Saharan African nations in female life expectancy at birth since 1978. The average of the region in 1998 was 105% higher than that of 1978. Adjusting countries reported a progress of 104% compared with 106% for non-adjusting countries. The difference was statistically insignificant.

Non-adjusting countries that showed reversal in female life expectancy were Botswana (82.76%) and South Africa (98.31%). Eight adjusting countries reported reversal in female life expectancy: Zimbabwe (80%), Zambia (80%), Uganda (82%), Malawi (91%), Burundi (92%), Côte d'Ivoire (94%), Tanzania (96%) and Kenya (96%). No progress was reported in one non-adjusting country (Namibia) and four adjusting countries (Congo, Central African Republic, Togo and Ethiopia.

In the rest of the adjusting and non-adjusting African countries the progress was modest. Non-adjusting countries included the Democratic Republic of the Congo (104%), Mauritius (110%), Eritrea (111%), Chad (114%), Angola (114%), Djibouti (116%), and Niger (119%). Adjusting countries included Burkina Faso (102%), Mozambique (104%), Lesotho (106%), Gabon (110%), Nigeria (111%), Cameroon (112%), Benin (112%), Comoros (113%), Cape Verde (115%), Ghana (115%), Madagascar (116%), Mauritania (117%), Senegal (117%), Guinea-Bissau (118%), Gambia (120%), Mali (120%), and Guinea (121%).

The gain in male life expectancy at birth for the Middle east and North Africa was estimated to be 19.7% for males and 19.9% for females. Adjusting countries in the region attained an increase of 18.6% in male life expectancy and of 18.7% in female life expectancy. The corresponding figures for non-adjusting countries were 20.6% and 20.7% for males and females, respectively. The differences are not statistically insignificant.

No reversals or plateaus were reported in male life expectancies at birth in the region. The smallest increase was attained by Bahrain (10.3%). It was followed by Syrian Arab Republic (14.5%), Sudan (16.7) and Islamic Republic of Iran (18.6%). Three non-adjusting countries have achieved gains more than 20%, namely Saudi Arabia (21.7%), Libyan Arab Jamaheria (22%) and Oman (30.4%). Adjusting countries achieved similar gains in male life expectancy at birth. The corresponding figures were: Jordan (14.3%), Tunisia (16.4%), Algeria (18.6%), Morocco (19%), Pakistan (20.4%) and Egypt (23.6%).
Figure 20. Gain in Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries in the Middle East and North Africa

Figure 21. Gain in Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries in the Middle East and North Africa
No reversals in female life expectancy at birth were reported in the region and the lowest gain was in the magnitude of 10%. Bahrain reported the lowest increase in female life expectancy among non-adjusting countries. It is followed by Syria (14.5%), Sudan (16.7%) and Islamic Republic of Iran (18.6%). Saudi Arabia (21.7%), the Libyan Arab Jamahyria (22%), Oman (30.4%) and Yemen (31.8%) achieved the biggest gains in female life expectancy. With an increase of 14.3%, Jordan attained the smallest gain in female life expectancy at birth among adjusting countries of the Middle East and North Africa. It is followed by Tunisia (16.4%), Algeria (18.6%), Morocco (19%) and Pakistan (20.4). Egypt has achieved the biggest gain in female life expectancy (23.6%) among adjusting countries.

The gains in male and female life expectancy at birth for the Latin and Middle America were 19.7% and 19.9%, respectively. The gains of adjusting countries were estimated to be 18.6% for males and 18.7% for females. This is compared to 20.6% and 20.7%. The difference between adjusting and non-adjusting countries was statistically insignificant. However, the differences between countries in each group were apparent. For example, in non-adjusting countries Cuba’s improvement in life expectancy was only 4% throughout the last two decade. While Guatemala achieved an improvement of 15.5%. From the adjusting countries, Paraguay occupied the last rank with a gain in male life expectancy similar to Cuba. This is compared to a 21% gain made by the adjusting Bolivia.

Countries of the Asia and Pacific achieved an improvement of 111% in both male and female life expectancy at birth. Adjusting countries gains were 112.2% and 111.8%, compared with gains of 107.2% and 108.6% for non-adjusting countries in male and female life expectancy, respectively.

The progress in male life expectancy of individual non-adjusting countries was 8.7% in the Democratic People Republic of Korea, 9.1% in China, 10.5% in Malaysia and 20.7% in Viet Nam (20.7%). The progress of non-adjusting countries was estimated to be 8.7% in Sri Lanka, 11.8% in the Republic of Korea, 14.3% in Thailand, 14.8% in Philippines, 15.5% in Mongolia, 18% in Papua New Guinea, 21.2 in India, 22.2% in Lao People's Democratic Republic, 24.1% in Indonesia, 26.1% in Bangladesh and 26.7% in Nepal.

With respect to female life expectancy at birth, progress of non-adjusting countries was estimated to be 11.3% in the Democratic People Republic of Korea, 6.3% in China, 9.4% in Malaysia and 20.4% in Viet Nam. The gains made by adjusting countries in female life expectancy at birth averaged at 9.2% in Sri Lanka, 13.1% in Republic of Korea, 11.9% in Thailand, 15.5% in Philippines, 16.4% in Mongolia, 14% in Papua New Guinea, 17% in India, 23.8% in Lao People's Democratic Republic, 21.2% in Indonesia, 23.4% in Bangladesh and 23.4% in Nepal. Cambodia has achieved impressive and unprecedented improvement in life expectancy, which was estimated to be 66.7% for males and 77% for females.
Figure 22. Gain in Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries in Latin and Middle America

Male life expectancy at birth 1978

Figure 23. Gain in Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries in Latin and Middle America

Female life expectancy at birth 1978
Figure 24. Gain in Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries in Asia and Pacific

Male life expectancy at birth 1978

Figure 25. Gain in Male Life Expectancy at Birth in Adjusting and Non-adjusting Countries in Asia and Pacific

Female life expectancy at birth 1978
Conclusion

The empirical analysis showed that there was a statistically significant difference in the aggregate mean of life expectancy at birth between adjusting and non-adjusting countries. Non-adjusting countries were shown to survive adjusting countries by 6 years. Likewise, the gains in life expectancy throughout the last two decades were shown to significantly differ between adjusting and non-adjusting countries. However, the differences were shown to be more methodological artifact rather than real differences in survival and life longevity.

When the national income was taken into consideration the gap decreased in low income countries to only 3 years. Furthermore, adjusting countries in the lower middle income category were shown to have a higher life expectancy of the same magnitude than non-adjusting countries. Upper middle income countries did not show significant difference.

In low income countries, the difference in life expectancy is believed to be due to the fact that many of the adjusting countries in sub-Saharan Africa are stricken by the HIV/AIDS epidemic. The AIDS has cut the average life expectancy in Zimbabwe by a quarter-century, besides significantly reducing life spans in other African nations. The average Zimbabwean can now expect to live 39 years, down from 65 prior to the AIDS epidemic sweeping the country.

AIDS results in higher mortality rates in childhood, as well as among young adults where mortality otherwise is low. As a result, AIDS deaths will have a larger impact on life expectancies than on some other demographic indicators in these nations.

A recent report [US Census Bureau] estimated that Zimbabwe has 1.6 million fewer people directly and indirectly due to AIDS, while Uganda has 1.3 million fewer; Nigeria has nearly 1 million fewer and South Africa has 900,000 fewer. By the year 2010, sub-Saharan Africa will have 71 million fewer people than it would have without the effect of AIDS. The projected population declines are: Nigeria, 11.7 million fewer people; Kenya, 6.7 million fewer; South Africa, 5.6 million; Zimbabwe, 4.4 million; and Uganda, 4.2 million.

Some of the countries most affected by AIDS epidemics are projected to have zero or near-zero population growth, because of the higher mortality rates combined with low projected fertility rates. By the year 2010 growth rates are projected to be reduced 75 percent or more in South Africa and in Zimbabwe. In Kenya, growth rates will be reduced 66 percent, while Nigeria's growth rate is expected to drop more than 40 percent.

Seven developing countries in Asia and Latin America also are significantly affected by AIDS, including Guyana, Myanmar, Haiti, Cambodia, Honduras, Brazil and Thailand.