

# UNH Student Looks at Economic Impact of the AIDS Epidemic in Africa

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DURHAM, N.H. -- In some parts of Africa, AIDS may soon lend new meaning to the phrase, "the lost generation." With the fewest resources to handle the AIDS epidemic and the fastest rate of infection in the world, many nations south of the Sahara may soon be economically crippled by the disease.

Yet the economic picture is not a simple one, according to researchers at the University of New Hampshire's Whittemore School of Business and Economics. The results of a recent study by graduate student William K. Chiume suggest that AIDS deaths have changed some African economies in unexpected ways. At least in the short term, AIDS deaths have increased the rate of growth in per capita income of some African economies.

Chiume's UNH advisor, Bruce Elmslie, associate professor of economics, acknowledges that "polite words are difficult to come by" for explaining this finding about AIDS. Worldwide, the disease hits first and hardest among the less educated, the poor and the unemployed. Chiume found that in destitute countries with unemployment rates of 50 to 60 percent, losing thousands or even millions of marginally productive workers has made the economic numbers look better.

Because AIDS first killed those with lower per-capita earnings, average income among those still alive looks like it has improved because calculations are based on a smaller population. However, it is only an illusion of statistics. Individual income is probably not rising, the two men agree. The data do not say by any stretch of the imagination that AIDS is good for African economies, Elmslie said. At best, "the relationship is difficult to sort out."

Chiume's special research interest is in economic forecasting, and as a Tanzanian he feels overwhelming concern for Africa. Both interests helped to steer him toward looking at the economic impact of the AIDS epidemic on 21 sub-Saharan African economies. One factor Chiume measured was per capita growth, which

is real gross domestic product divided by population, plus an annual rate of change factor.

Results suggesting a "positive" impact not only surprised Chiume, they disturbed him. "On the one hand you want to see economic growth, but on the other hand you don't want to see it at this price," he said. "The positive correlation between economic growth and the death rate of AIDS is just something you don't want to see. However cynical a view it is, though, it's true."

Chiume, who earned his M.A. in Economics from UNH last September, added that one way to control for this counter-intuitive effect would have been to include an unemployment rate variable in his model. However, "most African countries do not make this data available," he reported, because of fears that it might discourage foreign investment.

Another measurable factor that tempers a purely statistical view of AIDS in Africa is human capital. That is the economist's term for the knowledge and skills available in the people, in the work force. Human capital is nurtured by literacy campaigns and by improving access to education, by environmental and health care programs that extend life expectancy. In an effort to increase human capital and boost economic growth, Tanzania made free primary-through-college education universally available at independence in 1961, for example. Until AIDS, economic growth had begun to follow.

But now the World Bank has predicted that by 2010, the adult population of some sub-Saharan nations could be as low 50 percent of what it would have been without the epidemic, according to Chiume. Experts draw a direct link between a nation's investment in human capital and future economic growth, which today depends heavily on technology and scientific advances led by educated workers.

As one measure of human capital, Chiume used World Bank data on the number of students enrolled in primary and secondary schools in each of the 21 nations. The number of high school students offers a look at the labor force in the not-too-distance future, while the number of younger students provides data for longer projections. Both totals are spiraling downward in sub-Saharan Africa, Chiume found.

The reason is that AIDS is killing more and more highly educated young adults, so the number of orphans has risen dramatically. Not only do orphans not attend school, but they pose an immediate drain on surviving family members and government social service

resources. In Tanzania alone, an estimated 666,000 orphans needed help last year. Their highly educated parents had been the country's "hope for the future" group. There is very little light at the end of the drain of human capital in these nations, many ranked among the World Bank's ten poorest countries.

"There is no way these countries will catch up to the rest of the world, and the gap is just going to get wider," Chiume said. "You can imagine with kids not going to school, teachers dying, more and more money going to health care, it's overwhelming." In a pandemic, surviving workers function in a grief-numbed state and suffer lower productivity, research shows.

"The combination definitely works against the chances of economic growth," Chiume acknowledges. "Absent a miracle, there is really no chance for these countries to improve their economic growth in the foreseeable future."

As harsh as they are, Chiume's findings contribute important information to the body of knowledge on AIDS and economics in sub-Saharan Africa, according to Elmslie. And because the result was not expected, he adds, "it actually made us think more deeply about what is going on."

To the professor, Chiume's most disturbing finding was the grim news about human capital. Economic theory suggests that in the long term, Africa's losses will be "devastating," Elmslie noted.

"Sooner rather than later," he predicts, these countries will experience the full impact of AIDS as a kind of jagged hole in the nations' social and economic fabric -- an empty place where millions of optimistic, productive young people should have been.

Perhaps even more chilling, Elmslie feels, is the loss of hope that often comes with shortened life expectancy. He explains, "Because education is a forward-looking proposition, if you believe that you're going to die young it means that you may lose your incentive to spend all that time working hard in school. It's an intangible, but this could be especially devastating because it could hang on even after the initial loss of human capital is over."

Chiume, who hopes someday to return to Tanzania and work on economic development with an international aid organization, at present is an electricity load forecaster for the non-profit New York Independent System Operator. He uses econometric techniques to

forecast electricity use for the wholesale electricity market in the state.

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