The Brookings Institution
Washington, DC

Conference Report

no. 9
September 2001

Barks-Ruggles and others

The Economic Impact of HIV/AIDS in Southern Africa

Since the first cases of HIV/AIDS were reported twenty years ago, nearly 58 million people have been infected and 22 million have died. Consensus in the international community has grown over the past two years that HIV/AIDS poses a threat to development, security, and economic growth. A few studies over the last ten years have looked at the impact on workers and their employers. With momentum building to prevent new infections and treat those already afflicted, more information is needed to assess economic impacts and cost efficacy of treatments.

On June 28, 2001, the Brookings Institution, the Council on Foreign Relations, and the U.S. Agency for International Development (USAID) sponsored a conference on measuring the costs of HIV/AIDS and organizing responses to it. The conference brought together researchers, business people, and policymakers to discuss economic impacts, prevention costs, education, and treatment. This report is a summary of the findings presented at the conference.

AIDS and Business in Southern Africa

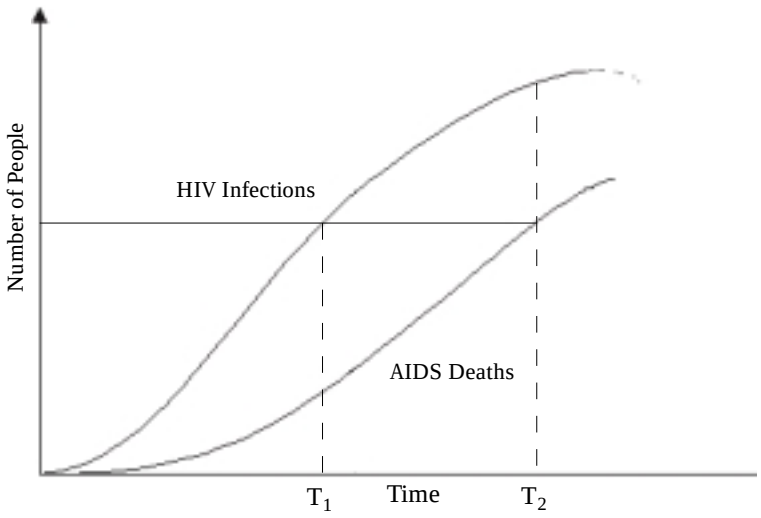
At the conference, Professor Alan Whiteside of the University of Natal gave an overview of the AIDS epidemic, which is currently centered in sub-Saharan Africa. The African epidemic is not homogenous; Southern Africa has the worst epidemic, and HIV prevalence there continues to rise. In Uganda, prevalence has fallen, while in other countries it has stabilized or is rising more slowly. The scale of the epidemic in Southern Africa is particularly worrying given that this is the most developed part of Africa and it was hoped Southern Africa would be the continental powerhouse for economic development.

In 1999, sub-Saharan Africa's Gross Domestic Product (GDP) was $324 billion. Of this total, South Africa produced $131.1 billion, over one third. The average sub-Saharan African per capita annual income is $490 while in Botswana it is $3,240, South Africa $3,170, Namibia $1,890 and Swaziland $1,350. It may be that this relative wealth—combined with the gross inequality of incomes within these countries, which is not reflected in the composite figures—have played a role in the development of the epidemic.

HIV prevalence levels are a harbinger of the AIDS epidemic, with sickness and death due to AIDS following the HIV infection curve by several years (figure 1). HIV prevalence can, therefore, be used to project the number of future illnesses, deaths, and orphans, but cannot predict what the effects of increased morbidity and mortality will be for business and national economies in the medium and long

Measuring Costs and

Figure 1: The Two Epidemic Curves



Source: Health, Economics, and AIDS Research Division, University of Natal

term. At best, one can measure current impact in the knowledge that it will get worse.

Despite the dearth of data, there is some evidence that AIDS is already increasing the cost of doing business. It is, in effect, a payroll tax, as companies pay direct costs for treatment of sick employees and more expensive health and insurance benefits, as well as the indirect costs of lower productivity, absenteeism and increased recruitment and training costs for replacement staff. Companies can, to some extent, shift the costs of the epidemic onto the public sector. For example, when health and life insurance costs rise, some companies will be forced to reduce benefits and people will seek care from the public sector. However, in many developing countries the public sector is dysfunctional, so the social, health, and financial burdens often fall on households and families. In addition, governments face the same increased mortality and morbidity among infected staff as the private sector, reducing the public sector's ability to maintain the expertise needed to respond to the epidemic.

Four areas need urgent attention from researchers and the private sector:

- Development of simple and publicly available methodologies to assess the impact of HIV/AIDS on business.
- An understanding of the macroeconomic effects of the epidemic on nations, particularly on governments and the business and investment environment.
- Assessment of the consequences for small- and medium-sized businesses.
- Better analysis and understanding of the burden shifting between the public and private sectors and between organizations (public or private) and households and individuals.

Several of the presentations at the conference began to tackle these objectives, but more needs to be done in each of these areas.

HIV/AIDS Impacts on "Capacity Deepening," Economic Growth

Malcolm McPherson of the Belfer Center at Harvard's Kennedy School of Government addressed how the spread of HIV/AIDS seriously erodes human capacity and adversely affects "capacity deepening," which is broadly defined as building upon existing skills in order to increase productivity. Skilled personnel are lost and valuable labor time is consumed when workers become debilitated, and

Organizing Responses

work schedules are disrupted when organizations replace workers and managers who are ill or have died.

The loss of capacity reduces economic growth. Several aggregate models project significant reductions in economic growth rates for African economies. These modeling exercises typically follow a pattern of reporting "with" and "without AIDS" scenarios. An example is the widely cited ING Barings model produced for the July 2000 HIV/AIDS conference in Durban, which showed that long-term economic growth in South Africa would decline 0.4 percent per year due to HIV/AIDS.

Recent research, however, suggests that these studies may be too optimistic. What they fail to consider is that by undermining human capacity, HIV/AIDS reduces productivity, disrupts organizations, and unravels institutions. The implication is that the epidemic's effects are more likely to be non-linear.

Both theory and practice indicate this is the case. At the aggregate level, the impact of HIV/AIDS has elements consistent with endogenous growth theory. The spread of HIV/AIDS reduces labor productivity, raises private and public consumption, and thereby reduces income and savings. With lower savings, the rate of investment falls, reinforcing the decline in economic growth. The loss of labor productivity occurs because a larger share of the work force becomes debilitated and dies, causing organizations to lose workers with critical skills. The phenomenon can be likened to "running Adam Smith in reverse." Adam Smith argued that the "expansion of the market"—typically identified as economic growth—creates opportunities for specialization and the division of labor. The spread of HIV/AIDS reverses that process as organizations experience disruption, and declining income undercuts the earlier gains achieved through specialization and the division of labor.

A factor accelerating this trend has been the erosion of economic incentives to deepen capacity. With current treatment protocols, the majority of individuals in Africa who are HIV-positive (or think they may be) face dramatically shortened life spans. This raises the opportunity cost of additional training, because few of the costs incurred will be recouped in higher subsequent earnings. The same logic applies to employers who might otherwise support further training of their employees. Forbidden by law from discriminating, employers have to assume that the average productive life span of anyone they train will decline, which directly reduces the incentive to support long-term training. Without such training, capacity cannot be deepened.

So far, many enterprises across Southern Africa have sought to minimize the direct costs of HIV/AIDS by "shifting the burden." This can entail closing transport and distribution divisions—where the prevalence of HIV/AIDS is higher—reducing benefits, or shifting labor to temporary workers. Some organizations may gain a short-term cost advantage, but in aggregate, the attempt to "shift the burden" is a mirage. This is because with workers, government, and the rest of society bearing the

Principal Editor
Erica Barks-Ruggles is an International Affairs Fellow with the Council on Foreign Relations and a guest scholar at the Brookings Institution.

Other Contributors
Tsetsele Fantan is a director of the Debswana Diamond Company in Botswana and responsible for HIV/AIDS impact management at the company.

Dr. Malcolm McPherson, a fellow in development at Harvard's Kennedy School of Government, has been an advisor on macroeconomic management to more than a dozen African governments over the last two and a half decades.

Professor Alan Whiteside, a development economist, is director of the Health Economics and HIV/AIDS Research Division at the University of Natal.

The AIDS economics team of the Center for International Health at the Boston University School of Public Health is an interdisciplinary group of public health and social science researchers focused on the social and economic impacts of the AIDS epidemic.

direct costs of HIV/AIDS, resources are diverted from public services such as roads, telecommunications, and education. Enterprises require those resources to enhance productivity. Furthermore, with overall income growth declining, the enterprises' future growth prospects also diminish.

For these reasons, private enterprises need to be concerned about capacity deepening in the public sector. Without ministries of finance, health, and education, central banks, revenue, and justice departments with skilled staff capable of effectively administering and managing the economies, business will suffer. This is already evident in countries such as Zambia, Zimbabwe, and Malawi.

What are the potential remedies? How can the bias against capacity deepening be reversed? What form of private-public cooperation would decrease the pressure on the diminishing supply of highly skilled workers? Several measures should be considered:

- Expand prevention programs dramatically to protect those who are not HIV-positive.
- Institute short-term, repeatable training courses that improve worker efficiency and morale to help prevent further declines in productivity.
- Reorganize and simplify work schedules to economize scarce organizational talent. This task may require specialized technical assistance.
- Scale back governments' development agendas. Currently, governments are grossly overburdened with ambitious donor-driven initiatives, such as sector development, poverty reduction, growth, and—ironically—"scaled up" HIV/AIDS programs. By failing to match such initiatives to existing capacity, they are pre-programmed to fail.
- Expand support by donor agencies for technical assistance to stabilize the operations of key organizations (e.g. finance, justice, health and education ministries).

Analyzing the "AIDS Tax" on Businesses

In order to manage the disease in their workforces, business leaders must better understand how the epidemic will affect their employees, the impact it will have on their firms' costs of production, and the benefits of investing in HIV/AIDS prevention and treatment interventions. The AIDS Economics Team of the Center for International Health (CIH) at Boston University is undertaking a series of detailed studies of the costs of HIV/AIDS to businesses in South Africa and Botswana that begin to address this need. Seven firms in southern Africa from different sectors and with varying infection rates are being studied. Results of the first three studies have been analyzed, and the full results will be available in early 2002. The key characteristics of the first three firms and estimates of the costs of HIV/AIDS to these firms are shown in figure 2 and figure 3.

The results in figures 2 and 3 are the present values to the firms of new HIV infections acquired each year. Costs incurred in the future are discounted using each company's own real discount rate. Figure 3 shows the liability that the firm acquires each year as a result of new infections among employees that year.

The results suggest that the "AIDS tax" on these firms ranges from 3 to 11 percent of annual salaries in 1999 and 2 to 8 percent in 2010. The variability among the firms depends on each company's production structure and human resource policies. For companies A and C, the direct costs of retirement

and disability benefits far outweigh all other costs and lead to a much larger cost per new infection than experienced by Company B. For Company B, with a much smaller cost per infection, the indirect costs associated with absenteeism and on-the-job performance loss constitute the largest share of the total. The reasons for this variation include differences in retirement, death, and disability benefits; level of medical care paid for by the firm; baseline labor productivity; and the contractual status of unskilled workers. As a result, Companies A and C currently bear a much larger share of the total economic burden of HIV/AIDS among employees than Company B.

Despite the difference in their exposure to HIV/AIDS costs, the CIH research suggests that all three companies have an opportunity to obtain positive returns on investments in HIV/AIDS prevention and treatment interventions. Under reasonable assumptions about the costs and effectiveness of specific interventions, these firms will be better off financially with interventions than without. However, better information on the effectiveness of interventions is urgently needed to strengthen this analysis.

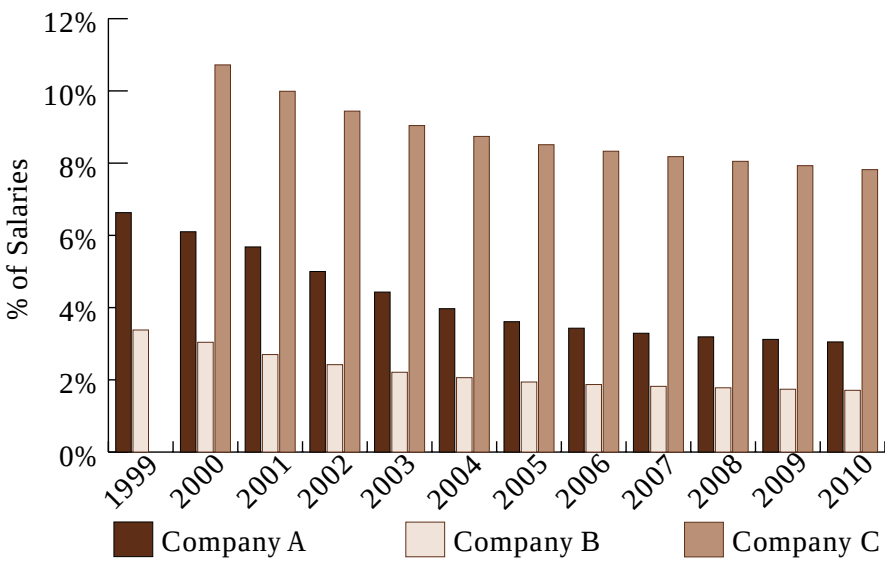
Figure 2: Cost of HIV/AIDS to Firms in the Study

Company	A	B	C
Location	South Africa (national)	South Africa (KwaZulu Natal)	Botswana
Sector processing	Heavy industry	Agriculture	Mineral
Workforce size	>20,000	5,000-10,000	<1,000
Company's discount rate (real)	6%	10%	4.50%
HIV prevalence	8.8% (1999)	22.9% (1999)	28.8% (2000)
Present value per infection as a multiple of average salary—technicians[a]	5.4	1.3	5.1
Share of indirect costs (productivity) in total cost	24%	93%	26%
Share of retirement and disability benefits in total cost	65%	0%	65%

(a) Technicians are skilled machine operators, drivers, craftsmen, engineering assistants, etc. They typically have both formal and informal technical training but no university-level education. The costs for this job level are provided as an example.

Source: Research of the AIDS Economic Team, Center for International Health, Boston University

Figure 3: The "AIDS Tax" on Firms in the Study

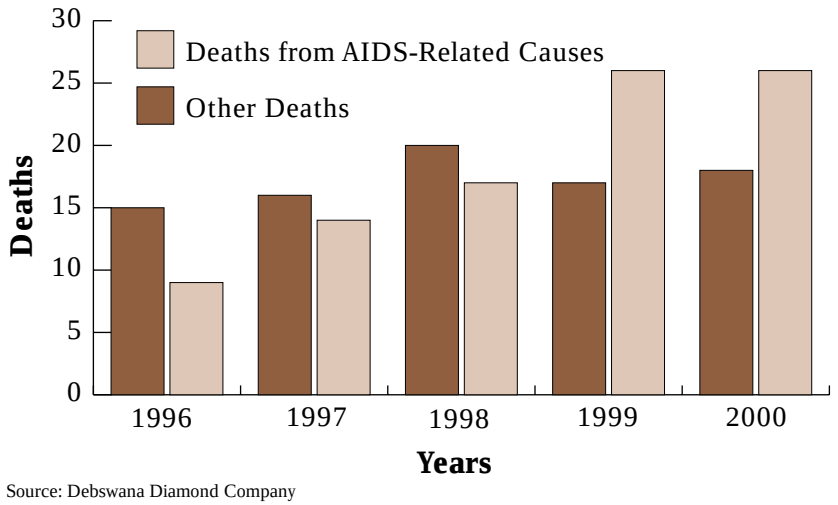


Source: Research of the AIDS Economic Team, Center for International Health, Boston University

Debswana: A Case Study of Business Impact and Responses

Debswana is the largest diamond mining concern in Botswana. Tsetsele Fantan, a director of Debswana responsible for HIV/AIDS impact management, outlined the evolution of the company's efforts to respond to the epidemic, which began in 1988-89 when the first AIDS cases were seen at company-run hospitals. Between 1996 and 1999 there was a significant increase in HIV/AIDS-related health retirements and deaths. Employee deaths associated with HIV/AIDS rose from 37.5 percent of all employee deaths in 1996 to 48.3 percent in 1997 and 59.1 percent in 1999 (figure 4).

Figure 4:
Debswana Diamond Company—Summary of Deaths in Service



Source: Debswana Diamond Company

As a result, the company sought to establish the level of HIV-prevalence in the workforce to help plan for future risk reduction strategies. A voluntary anonymous prevalence survey using saliva was conducted in 1999 to establish prevalence levels by skill grade and age at Debswana's mines, headquarters office and other sites. With 75 percent of the workforce participating, the survey found that 28.8 percent of 5,261 employees were infected. There were HIV-positive individuals at every skill and education level, but the 30-34 year-old age group was hit hardest, with a prevalence rate of 36.9 percent.

In 1999, Debswana undertook a company-wide evaluation of HIV policies and programs, including a "Knowledge and Practices" (KAP) study on prevention and education strategies. The KAP study showed that 94 percent of employees knew about HIV/AIDS and its transmission, but a significant percentage (26-46 percent) still had multiple partners and practiced unsafe sex. In addition, between September 1999 and August 2000, the company conducted an institutional audit to assess its vulnerability to costs and impacts associated with HIV/AIDS-related morbidity and mortality. The audit focused on HIV-prevalence broken down by skill levels, the impact of HIV/AIDS on employee benefits, the consequences for productivity, and the implications for skill availability and critical functions. The audit found an increase in costs attributable to AIDS.

As a result of these studies, Debswana changed a number of policies and adopted a new HIV/AIDS strategy. It identified critical positions at the core of its mining operations, especially those where the loss of specialized employees at a production bottleneck would cause operations to halt, and found that only 26 percent of all jobs in the company were critical. Employees in these positions will be targeted for specific HIV/AIDS risk reduction strategies. Other recommendations Debswana adopted included implementation of: a standard for HIV/AIDS management, an HIV/AIDS competence examination for managers at key levels, and a "contractor assurance" policy, which compels companies providing goods and services to Debswana to have workplace HIV/AIDS prevention and education policies and programs that will be audited regularly.

As a result of the studies and new policies, in March 2001, Debswana approved the provision of anti-retroviral treatment for employees living with HIV/AIDS. The company will pay 90 percent of the cost of anti-retroviral drugs and the related costs of monitoring viral loads and CD4 counts for the employee and one spouse who is HIV positive for as long as the employee remains in the employ of the company. The anti-retroviral therapy is administered through a disease management program that ensures drugs are used in correct combinations and with appropriate monitoring and follow-up.

Problems with Data Collection, Recommendations for Businesses and Researchers

As noted, more information is needed on the social, political, and economic costs of the HIV/AIDS epidemic. The paucity of current data is due in part to several overlapping problems: a lack of comprehensive and systematic data collection, problems with data collection methodology, and insufficient sharing of information and data.

Time and budgetary constraints on many researchers require them to use questionnaires seeking historical data on issues such as skill level of employees, health and life insurance costs, recruitment and training costs, and absenteeism. This can significantly affect the quality and reliability of the data. Direct access to corporate databases would eliminate the need for questionnaires and enable more comprehensive analysis over time, across skill levels, and between different companies in a consistent and statistically significant manner. This would need to be done in a manner that protects employees' privacy.

Differences in the quality of record keeping can also make comparison studies virtually meaningless. For example, few businesses in South Africa keep accurate absenteeism data. In addition, many large businesses in the region split employee records between headquarters and plant sites, and track data differently in each location. Differences in computer systems, exacerbated by corporate mergers, outsourcing of non-core functions, and changes in laws and regulations also complicate data collection.

Aside from human resource and health care professionals, most upper-level managers have not considered how HIV/AIDS might affect their employees and companies, so information is often not shared between divisions within companies. Likewise, there is little information shared between businesses. Many managers fear their companies will be "branded" if information about HIV prevalence, and programs they have to combat it, are made public. There are, however, some nascent efforts underway to increase inter-business communication and to provide an environment in which businesses can share information and experiences.

What Businesses Can Do

Understand the impact of AIDS on employees, their families, and their communities Business should work together to create an international standard for tracking information on direct and indirect costs to businesses—including health care costs, absenteeism, increased recruitment and training costs, etc.

Take action in the workplace Businesses should analyze their operations and put in place strategies for prevention, education, and possibly treatment. Strategy development and implementation should include all levels of the organization and unions to ensure protection of privacy and employee rights, and to get input and feedback on programs. Policies and programs should extend to partners in the supply and distribution chain and to contractors.

Promote condom use and behavior change AIDS is relatively hard to contract. Businesses can lead prevention efforts by making condoms accessible and by getting employees to talk to their peers in the workplace and the community about how to prevent the epidemic from spreading further.

Brookings gratefully acknowledges the generosity of the Virginia Wellington Cabot Foundation for its support of the Policy Brief series.

The authors thank the Council on Foreign Relations for their help in carrying out the conference and the printing of this report. They also thank USAID for its support of the conference and of the research of the AIDS Economic Team, Boston University.

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Businesses should play a leadership role in the community with outreach to families, schools, and adolescents on HIV/AIDS.

Form coalitions Coalitions of businesses working together to pool data and talent can help accelerate and streamline the fight against AIDS. Through public-private partnerships, businesses and governments can also become more efficient in their efforts to fight this disease.

Push for change The economic power of the private sector gives it an important voice with policymakers around the world. This, backed up by data, can and should be used to fight for funding and sensible programs that will make a difference.

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