

8

THE IMPACT OF HIV/AIDS ON THE PRIVATE SECTOR

David Canning,* Ajay Mahal,* Olakunle Odumosu,[†]
and Prosper Okonkwo[‡]

The economic and social impacts of the HIV/AIDS epidemic have attracted much attention in recent years. The reasons for this attention are not surprising. The scale of the epidemic presents a unique health policy challenge. Already 25 million people worldwide have died, and the number of deaths is certain to rise from its existing rate of 3 million per year. AIDS is now the fourth largest cause of mortality worldwide, ranking just below cardiovascular disease and acute lower respiratory tract infections. In Africa, where more than 70% of all HIV-infected people live, AIDS now accounts for an estimated one-fifth of all deaths, making it the leading cause of mortality on the continent by a wide margin.

The HIV/AIDS epidemic is also characterized by several elements that strongly point to its influence on households, the private sector, and national economies. In particular, HIV causes premature morbidity and mortality among people in their most productive ages, and some researchers suggest that economically better off adults—who are likely to be the most productive—may be at greater risk than those less economically well off (1,2). Increased ill health and mortality among productive

*Department of Population and International Health, Harvard School of Public Health, Boston, Massachusetts

[†]Nigerian Institute of Social and Economic Research, Ibadan, Nigeria

[‡]AIDS Prevention Initiative in Nigeria, Ibadan, Nigeria

adults, when combined with the large size of the epidemic, suggest a large negative effect on national economic performance in the context of standard models of economic growth (3).

Bell et al. highlight the fact that high rates of AIDS-related deaths among more educated age groups not only reduce the stock of human capital directly, but do so indirectly as well, because people will have less of an incentive to acquire costly educational capital if they do not expect to live long enough to enjoy substantial gains from acquiring it, and firms will have less of an incentive to train their at-risk workers (4). Future stock of educational capital could also be affected if children whose parents die prematurely due to AIDS face economic bottlenecks in efforts to continue their education. Other researchers have highlighted additional channels—such as a decline in savings of households, firms, and the government that result from increased medical treatment costs associated with HIV/AIDS—that could lead to adverse implications for economic growth (1,5). Savings rates could also decline if people expect to live for fewer years owing to HIV/AIDS and so feel less need for savings to meet their old age consumption needs. Others have contested these findings on the impact of HIV on national economic performance on both theoretical and empirical grounds (6,7).

Notwithstanding the different viewpoints with regard to the adverse *macroeconomic* impacts of AIDS, experts agree on the general direction of the *microeconomic* effects in developing countries, if not the specific circumstances of individual countries. That is, the average household with HIV-positive members, or the individual firm with large numbers of HIV-positive employees, is unlikely to escape the adverse economic impacts of the epidemic in the absence of policy interventions.

With 5% of Nigeria's adult population infected with HIV and prevalence expected to grow further among adults, the potential impact of HIV/AIDS on Nigerian firms is of obvious policy relevance. At this point, we know relatively little about the impact of AIDS on Nigerian firms, or about the strategies they have adopted to ameliorate its impact. The only previous study of Nigerian firms focusing on AIDS that we are aware of is Rosen et al., which examined correlates of firms' behavioral responses in a sample of 232 firms surveyed in 2001 (8). This study highlighted the low level of HIV prevalence among employees, with only 13.6% reporting an AIDS-related death or retirement in the two years preceding the survey, and an even smaller proportion reporting an employee who was HIV positive. Only about a third of the sample companies reported any sort of HIV-prevention activities for their employees, and less than a quarter considered AIDS a threat to their business. Most of the HIV-prevention activities involved educational materials. In general, larger firms, firms that had previously encountered an HIV-positive employee, and firms that had received informational materials from external sources were more likely to have taken even a limited set of actions. In a separate study, Rosen and Simon found evidence of other mechanisms that Nigerian firms adopted to reduce the impacts of HIV: surreptitiously testing employees for HIV and dismissing them if found to be infected, and excluding AIDS-related health conditions from their medical benefits package (9).

While these studies offer valuable contributions, considerable work remains to be done in assessing the impacts of AIDS on Nigeria's private sector, including more detailed analyses of the way firms respond to HIV/AIDS in the workplace and the medical benefits they offer to employees. Moreover,

given the fast-growing nature of the epidemic, up-to-date information on available firm responses is important for devising appropriate policy responses. To this end, this chapter seeks to add to the literature on the impacts of HIV/AIDS on the labor and non-labor costs of Nigerian firms by focusing on two Nigerian states—Oyo and Plateau—both target states of the AIDS Prevention Initiative in Nigeria.

Oyo and Plateau states account for only about 6.3% of the total land area of Nigeria, and a roughly similar share of its estimated total population of 135 million in 2003.¹ The two states have geographic variation—with one located in southwestern Nigeria and the other in central Nigeria—and ethnic variation. The adult HIV prevalence rates in the two states are close to the 5.0% national average: 3.9% for Oyo State and 6.3% for Plateau State—or roughly 82,000 HIV-infected adults in Oyo State and 81,000 in Plateau State.² Thus our analysis can potentially offer insights for Nigeria as a whole as well.

In this chapter we pose three specific questions important for the development of policy. First, what strategies are Nigerian firms adopting to ameliorate the impacts of HIV/AIDS? Second, given these strategies, how large will the impacts of HIV/AIDS on firms be? And finally, what do existing strategies suggest about the likelihood of Nigerian firms participating in long-term efforts to address HIV/AIDS in Nigeria?

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

The direct impacts of HIV on firms can take several different forms. Given that a typical firm's focus is the economic bottom line, in theory at least, it may experience the impacts of AIDS in one, or more, of several ways that affect costs and revenues. Consider labor costs first. There may be increases in per-unit costs of production, owing to reduced per-worker productivity among workers who are unable to work either because they are sick, or because they are caring for friends and family members who have HIV/AIDS (10). Production costs may also increase on account of greater workforce turnover as some of the workers die, and obtaining replacements entails the costs of hiring and training new workers.

In a 1997 study of nearly 1,000 firms in sub-Saharan Africa, Biggs and Shah concluded that the impact of HIV on staff turnover was minimal, although this situation would obviously have changed since the time as the epidemic has grown (11). Biggs and Shah found replacing professional staff to be challenging, with firms taking 24 weeks to replace a deceased professional, compared to two to three weeks for less skilled staff. Other, smaller studies in Benin, Kenya, Rwanda, and Zaire have shown how, at certain stages of the epidemic, HIV infections can be disproportionately concentrated among exactly these skilled workers (10). Other sources of potential cost increases include rising payouts by firms for funeral expenses of employees and their family members, expenses incurred in order to provide health care

¹The 1991 census data on population and geographic area for each state were obtained from the Nigerian Population Commission website at www.nigeriabusinessinfo.com/nigeria-population.htm. The projected population for 2003, owing to the lack of a census since 1991, was obtained from the United Nations website at <http://esa.un.org/unpp/p2k0data.asp>.

²HIV prevalence data was obtained from the National Action Committee on AIDS (NACA) website at www.naca.gov.ng. Estimates of adults with HIV in the two states were based on HIV prevalence rates reported by NACA, combined with age-distribution data from the National Population Commission and projected populations in the two states from the United Nations.

for sick employees and their families, and any termination benefit payouts, several instances of which are available in Africa (10,12–15).

In addition, there may be intangible effects on labor costs of production, if HIV/AIDS affects workers' morale adversely. No study has been completed detailing the impact on morale and productivity in a country with a serious and sustained epidemic. One study of entrepreneurs, however, found that HIV/AIDS led to a loss of focus on the business, while the Thai Business Coalition on AIDS highlighted poor morale as one factor facing businesses who fail to deal with AIDS in the workplace (10).

Then, there are non-labor expenses. For instance, costs of borrowing may increase if credit ratings of firms in a country decline owing either to projected adverse impacts of AIDS, or if individual firms that rely heavily on labor are deemed to be at financial risk. HIV/AIDS has been known to enter the calculus of determining a country's sovereign risk rating, and there is no reason why the same should not be true for individual firms (16). We are unaware of any firm-level studies on this subject. Firms that sell insurance, particularly health and life insurance, may incur increased claims payments as well.

On the demand side, firms may face reduced profits owing to declines in demand and prices. For instance, tourist demand for high HIV prevalence countries may decline if the risk of HIV infection figures into tourists' calculations while planning their visits. More generally, some have posited that, because HIV/AIDS affects mostly young adults who are also the major consumers of goods and services, a rising number of deaths and declining incomes owing to AIDS in this group will reduce demand for firms' products. Others have argued that demand may also decline because of deterioration in the *overall macroeconomic environment* due to AIDS (17).

For individual firms, however, these theoretical effects are likely to be small. For one, domestic demand is likely to be dissipated throughout the economy and on importers of products. If the demand is from foreign markets, especially outside of Africa, where HIV prevalence is much smaller, the impacts will be even less marked. Impacts on customer demand are likely to be more transparent if there are dominant firms, or if AIDS channels demands into specific sectors, such as health. In 1998, the JD Group, South Africa's leading furniture retailer, forecast that changes in demography, presumably due to AIDS, would reduce its customer base by 18% by 2015 (10). And AIDS has certainly led to a rising need for firms supplying health care services and drugs, although its translation into effective demand has typically required the mediation of government subsidies, as in Botswana, Nigeria, South Africa, and elsewhere. Consumer demand may also be influenced if HIV/AIDS affects a firm's brand—a term that encapsulates the value, image, and character of a company—although no direct evidence is available on the subject thus far.

Whether these effects turn out to be substantial depends on the magnitude of the HIV epidemic. For an individual firm, moreover, the impacts also depend on whether it can devise effective strategies to avoid the adverse implications of HIV/AIDS on its profits. Individual firms may be able to further reduce these impacts by HIV screening that enables them to reduce the hiring of workers with HIV, or dismissing them, or prematurely retiring workers who turn out to have AIDS, with limited compensation. Alternatively, firms may cap or otherwise eliminate worker benefits, especially relating to medical care. Existing literature does offer some evidence of strategies along these lines being adopted by firms in

Botswana, Nigeria, South Africa, and Zimbabwe (9). In so doing, these firms impose a negative externality on other firms that are looking to employ from the labor force by increasing the pool of HIV-infected people in it. Yet if screening costs are low enough, firms that are reasonably knowledgeable would act in a similar manner. In the short run, the real economic impact would then be distributional, being borne mainly by HIV-affected households or entities that support people with HIV, whether the government, nongovernmental organizations, or the communities in which people with HIV live.

Practices such as screening for HIV before hiring or dismissal on account of HIV status may be ruled out by cultural norms, business practices, and laws that prevent firms from discriminating against workers—or clients, in the case of insurance companies—by HIV status. These prohibitions may also cause firms to make financial contributions to the health care and funeral expenses of workers or their family members. These limits to actions by firms may be more common among firms that belong to the organized—or the formal—sector as well as among public sector firms (10). Although workers may still feel the burden of increased expenses under these circumstances in the form of lowered salaries, the firms will likely share at least part of this burden (18). Screening and subsequent dismissal, even if feasible, may not be cost-beneficial if the epidemic is concentrated among individuals with scarce skill sets who are hard to replace, such as individuals with managerial and high-end technical skills. Under these circumstances, firms may not be able to escape the impacts of AIDS.

Even if some short-term impacts are unavoidable, firms may adopt longer-term strategies to reduce the impacts of HIV/AIDS. These include shifting to production technologies that are capital intensive, or moving production itself to countries or regions with lower levels of HIV prevalence, although there is little evidence available on this score. Alternatively, firms may sponsor HIV prevention programs for their workers or lobby the government for prevention programs aimed at the general population. Such actions do, to an extent, confer external benefits on competing firms that plan to employ additional workers in future years, and this may result in underinvestment in prevention efforts (18). Thus while prevention programs directed toward the population might be larger-scale if undertaken in coordination with other firms to reduce the disincentives arising from the externalities involved, individual firms would probably prefer to undertake these programs toward their own employees. There is some previous evidence of prevention programs in workplaces in Africa, and Nigeria in particular (8,10). If workers have a high average length of tenure, the HIV-reduction gains resulting from prevention strategies toward its employees can be internal to the firm. The latter is particularly likely when the firms in question are large and therefore have longer decision-making horizons.

None of these methods of coping suffices to address certain long-run consequences of AIDS. If the population-wide HIV/AIDS epidemic continues to progress, there may come a point where *all* firms face a domestic employee population with a high risk of HIV infection, low skills, and generally poor employability. One could argue whether such a point is ever reached; if it is, firms' shorter-run strategies may not help avoid the longer-run consequences of the epidemic. Whether this really matters depends first on the time horizons of the firms themselves; and second on whether other parties—governments, nongovernmental organizations, and the households themselves—take up measures to reduce HIV infection. The appropriate

role of firms in such circumstances becomes thus an issue of policy interest. This discussion is also relevant to the question about how firms can be enrolled in strategies to address the epidemic more generally (10). A number of experts and leaders in the fight against AIDS have argued that firms have a crucial role to play because of the financial resources they command, their attention to efficiency, and their strong record of being able to reach households that are the focus of worldwide efforts against the spread of HIV.

DATA SOURCES

We carried out a survey of enterprises in Oyo and Plateau states. To highlight two different ways in which the epidemic could affect firms, we sampled insurance companies where the impact of HIV/AIDS was most likely to be felt in the form of higher claims payouts. We also sampled a collection of firms not operating in the insurance sector, and here we focused on the potential impacts of HIV/AIDS on costs related to labor inputs.

The sampling of firms outside of the insurance sector was undertaken as follows. Within each state, a sampling frame was constructed and firms were stratified by the number of employees: firms with employee sizes of 10 to 50 people, 51 to 300 people, and more than 300 people were defined as small, medium and large scale, respectively. It was expected that 40 firms would be covered from each state making for a total of 80 firms overall. The share of large, medium, and small firms in the sample was 20%, 40%, and 40%, respectively. All insurance companies in the capital city of each state were surveyed. This ought not to be particularly problematic from the standpoint of the sample being representative, because one ought to expect the regional headquarters to be located in the capital. Information was obtained with the help of a structured questionnaire that was completed with the assistance of trained field workers.

Overall we were able to access 102 enterprises in the organized sector, of which 29 were insurance companies and 73 were involved in activities outside the insurance sector. Of the firms outside the insurance sector, only 70 specified ownership structure, and these were the ones we included in our analysis. Nearly 80% of the reporting firms in the sample belonged to the private sector, as noted in Table 8-1. Our sample of private firms also included a few multinationals—about 5% of the total number of firms in the survey. Not surprisingly, given the potential sensitivity of financial data, not every sampled firm was willing to part with such information, and some refused outright to participate in the

Table 8-1. Sample of Firms by Type of Business, Ownership, and State, 2004

Type of Business	Oyo State		Plateau State	
	Public	Private	Public	Private
<i>Insurance</i>				
• General/Life	2	17	1	7
• Health	0	0	0	2
<i>Other</i>	8	38	5	19
<i>Total</i>	10	55	6	28

Source: Survey undertaken by the Nigerian Institute of Social and Economic Research. In our analysis we considered the 70 non-insurance firms for which information on public and private ownership was available, as well as 29 insurance companies, for a total of 99 firms.

Table 8-2. Enterprises (Excluding Insurance Companies) by Number of Employees, Wage Bill, and Years of Operation

Characteristic	Oyo State		Plateau State	
	Public	Private	Public	Private
Number	8	38	5	19
Employment	1808 (8)	3,377 (38)	2,093 (5)	1,865 (19)
Average annual wage bill (naira millions)	45.6 (4)	10.9 (27)	17.9 (5)	9.7 (11)
Employment	859 (4)	2,446 (27)	2,093 (5)	818 (11)
Mean years of operation	35.14 (7)	20.14 (37)	20.50 (2)	21.69 (16)

Source: Authors' estimates based on survey data provided by the Nigerian Institute of Social and Economic Research
Note: Numbers in parentheses indicate the number of enterprises that provided the relevant information.

study, as reflected in the sample size, which was 10% lower than what we had originally planned. Thus some of the questions in our survey of firms in Oyo and Plateau states are plagued by non-response. In the following discussion, and where necessary, we take note of problems raised by non-response and the potential biases involved.

Table 8-2 provides additional information about the employee base of our sample of non-insurance firms. The data show that an average firm in the sample had operated for at least 20 years, with the average public firm noticeably larger in terms of employees—300 versus 92—and annual wage bill—30.2 million naira versus 10.6 million naira—than the average private firm.

FINDINGS AND DISCUSSION

Impacts on Costs on Labor in Firms outside the Insurance Sector

Health and related benefits offered by firms to their employees can play a critical role in determining the cost of labor inputs due to HIV/AIDS. Thus, we first inquired of our sample of firms about the health-related benefits that they currently offer their employees. The list of benefits included premium contributions by employers toward insurance, free (or subsidized) provision of health services in firm-owned health facilities or facilities contracted by firms, reimbursements for health expenditures incurred by the employees themselves at outside facilities, and any medical allowances that were paid as part of the salary. We also examined whether employees contributed to insurance premiums, and inquired about the proportion of the total number of employees covered by the insurance schemes referred to previously.

Table 8-3 summarizes the results of our analysis. Most of the organized sector firms in our sample provide some form of financial support to the health needs of their employees. All firms in the public sector reported providing some form of support, at least as medical allowance in salary. However 10% of private sector firms (6 of 57) reported carrying *no responsibility* for health care expenditures of their employees.

A second key finding is that the bulk of the health care support provided by firms is channeled through mechanisms other than formal health insurance; that is, through firm-owned or contracted off-site

Characteristic	Oyo State		Plateau State	
	Public	Private	Public	Private
Number of Firms	8	38	5	19
<i>Health Benefits</i>				
Treatment at on-site clinic (Yes)	6	9	2	4
Pay for treatment at off-site facility (Yes)	1	18	2	7
Pay for health insurance (Yes)	0	2	0	1
Reimburse health expenses (Yes)	3	7	0	7
Medical allowance in salary (Yes)	3	11	4	10
No responsibility for health care (Yes)	0	6	0	0
<i>Other Benefits</i>				
Pay for funeral expenses (Yes)	4	12	5	10
Pay for family support (Yes)	1	2	0	0
One-time death benefits (Yes)	4	11	2	4
Disability payments (Yes)	1	6	1	5
<i>Benefits offered if HIV positive (Yes)</i>	<i>6 (7)</i>	<i>21 (30)</i>	<i>4 (5)</i>	<i>12 (16)</i>

Source: Authors' estimates, based on survey data provided by the Nigerian Institute of Social and Economic Research
Note: Numbers in parentheses indicate the numbers of firms offering one or more of the listed health (or non-health) benefits in the corresponding ownership category.

facilities, reimbursements for health expenditures and medical allowances included as part of salary. Less than 5% of all firms (or 3 of 70) firms in the sample reported contributing toward health insurance premiums for their employees, none in the public sector. The available data indicate that private sector firms offer a somewhat wider variety of benefit categories compared to public sector firms, especially health insurance and reimbursements for expenditures incurred by employees at health care facilities.

Table 8-4 presents additional information on expenditures incurred per worker by firms, under the different heads described earlier. Unfortunately, the data are characterized by a high level of non-response. One striking finding is that only 18% of the firms that offered medical benefits reported requiring their employees to make a contribution as well. Where such contributions are made, as indicated in the last row of Table 8-4, they occur primarily in the form of “partial reimbursements” for expenditures incurred by employees on their health care, or in the form of partial coverage for care received at offsite facilities.

Apart from benefits in the form of health expenditures, HIV/AIDS can also impose costs on firms if they end up paying benefits to employees who then die prematurely, disability benefits, funeral expenses, and support to surviving family members. The second panel of Table 8-3 describes benefits offered by firms in this category. Note that public firms are more likely to support funeral expenses—roughly 70%

Table 8-4. Health Expenditures Incurred by Firms

Characteristic	Oyo State		Plateau State	
	Public	Private	Public	Private
Number	8	38	5	19
Insurance Premiums Paid by Employers (naira per worker)	0	1,425 (2)	0	n/a
Total Employees	0	540	0	265
Expenditures on Own Facility (naira per worker)	755 (1)	1,577 (2)	n/a	571 (1)
Total Employees	1260 (6)	1727 (9)	619(2)	1,025 (3)
Retainers/Other Private (naira per worker)	3,300 (1)	1,200 (1)	n/a	1,500 (1)
Total Employees	202 (1)	2,306 (17)	662 (2)	1,585 (8)
Reimbursement (naira per worker)	260 (2)	1,180 (1)	n/a	n/a
Total Employees	1,109 (3)	1,579 (5)	0(0)	1,533 (5)
Medical Allowance (naira per worker)	n/a	3,664 (4)	n/a	3,095 (1)
Total Employees	396 (2)	1,039 (10)	1,117 (2)	674 (8)
Employee (% share)				
• Onsite facility	n/a	0-90 (3)	0 (1)	0 (2)
• Offsite facility	n/a	0-90 (4)	0 (1)	10-60 (2)
• Insurance premiums	n/a	0 (2)	0 (1)	0 (2)
• Reimbursements	50-70 (2)	0-60 (5)	100 (1)	0 (2)

Source: Authors' calculations based on survey data
Note: Numbers in parentheses indicate the number of firms reporting the necessary information.

of public firms, or 9 of 13, reported doing so, compared to about 40% (22 of 57) of private firms. About 46% of the public firms reported offering lump-sum death benefits, compared to 26% of private firms. A roughly similar—though small—proportion of public and private firms provide disability payments.

The previous discussion highlights the following: while not universal, the practice of paying for a substantial variety of health- and non-health benefits for employees of Nigerian firms means that in the absence of mechanisms that exclude HIV-positive personnel from receiving such benefits, the HIV/AIDS epidemic could impose a substantial addition to the labor costs on firms.

Strategies to Avoid the Impact of HIV Through Labor Costs

We inquired first whether the firms in our sample excluded HIV-positive individuals from receiving health benefits. We found that this was generally *not* the case, at least not overtly—more than 70% (43

Characteristic	Oyo State		Plateau State	
	Public	Private	Public	Private
Number of firms	8	38	5	19
Companies offering health insurance to employees	0	2	0	1
Number of employees covered, 2002	0	540	0	265
Companies covering antiretroviral therapy	0	1	0	1

Source: Authors' calculations, based on survey data

of 58) of all firms currently offering some health (or non-health) benefits described in Table 8-3 would not deny their HIV-positive employees access to benefits available to their HIV-negative employees. The proportion of public sector firms that would continue to offer benefits to their HIV-positive employees was close to 80%, whereas the corresponding proportion for private enterprises was about 70%.

In the absence of risk or experience rating—or if risk rating occurs with some lag—employers may hope to temporarily pass on some of the health care costs associated with AIDS to insurance companies, especially if health insurance covers ARV therapy, as was the case with our sample of firms. Unfortunately, few companies offer formal health insurance to their employees. Only 3 of 70 firms did so, together employing about 9% of the total workforce in the sample of firms considered (Table 8-5). More crucially, it appears reasonable to presume that on the supply side, insurance companies will make up for any extra health care expenditures incurred by employees by charging higher premiums rather than just passively incurring higher claim payments.

Second, firms could avoid these costs by discriminating against individuals with HIV/AIDS—whether in hiring decisions or in termination decisions as suggested by Rosen and Simon (9). Table 8-6 describes firms' responses in Oyo and Plateau States to different questions about the role of health and HIV/AIDS in influencing firms' decisions to hire individuals. Our survey data suggest that about 35 firms (50% of the full sample) have some health-related criterion for hiring individuals, with a greater percentage of public sector firms requiring the meeting of some health standards. Roughly 13% (9 of 70) firms report having separate policies for hiring people with HIV. This number may be biased downward if firms that use a health criterion for hiring also require a medical examination with an HIV test, even when the HIV exam is ostensibly irrelevant to the hiring decision. In our sample, at least two such firms existed, and the actual number may be greater. If there are a significant number of such firms, the proportion of firms for whom HIV status influences hiring will obviously be much greater than revealed by our survey responses.

Firms can also try to avoid the economic burden of HIV/AIDS by prematurely terminating employees with HIV/AIDS. In our sample, 42 firms (or about 60% of the total) reported having policies addressing situations when an employee is unable to work on grounds of poor health; and some 29 firms specifically reported having termination policies linked to health. Termination on grounds solely of HIV status (a discriminatory policy) appears to be quite limited: only 6 (or about 10%) of private sector firms reported having

Characteristic	Oyo State		Plateau State	
	Public	Private	Public	Private
Number of firms	8	38	5	19
Health-related criteria for hiring (if yes)	5	19	3	8
Hiring affected by HIV status (if yes)	1	4	1	3
Policy if employee cannot work due to ill health (if yes)	4	27	3	8
Any health-related criteria for termination (if yes)	4	16	1	8
Termination affected by HIV status (if yes)	0	5	0	1
Laid-off if someone unable to work (if yes)	1	12	0	5

Source: Authors' calculations, based on survey data

Note: Data refer to the number of firms responding in the affirmative to the question.

termination policies associated with HIV status. Nevertheless, if inability to work is grounds for termination firms may still be able to shed medical and other costs arising from employees with full-blown AIDS. Our survey data reveal that this practice is likely to be more common among private firms, some 17 of whom (or 30% of the total in our sample) reported having a policy of termination if a person were permanently unable to work, in contrast to only one public sector firm that reported having such a policy.

Third, Nigerian firms can potentially avoid adverse economic implications due to AIDS through the adoption of HIV prevention strategies that, by their nature, yield longer-term rewards. Table 8-7 summarizes these findings. Our data reveal that 50% (35 of 70) of the firms in our sample had at least one program with a strong prevention focus—condom distribution, testing and treatment for sexually transmitted infections, voluntary testing, counseling, or information, education and communication initiatives—in place, and several had more than one. It is worth noting that this is a higher proportion of firms than Rosen et al. reported in their study of Nigerian firms in 2003 (8). With the caveat that the samples of the studies may not be directly comparable (one was a national sample, whereas ours focuses on two states), we believe this to be evidence that Nigerian firms may be increasingly waking up to the epidemic and taking steps to address it, at least within their workforce. As in the Rosen et al. study, educational programs were the most common mode of intervention funded by firms in our sample (8). However, nearly 20% (14 of 70) of our sample of firms was involved in more substantive strategies such as condom distribution programs, which is double the proportion reported by Rosen et al. (Table 8-3) (8). Condom distribution programs appeared to be more popular in public sector companies, which is in line with our argument in the introduction, suggesting that larger firms are more likely than smaller ones to find prevention programs beneficial.

Implications for Nigerian Firms outside the Insurance Sector

What does the above discussion imply in terms of the financial impacts of HIV/AIDS on Nigerian firms? In principle, we should expect these costs to be small thus far, both because the Nigerian AIDS epidemic

is not as far advanced, say, as the epidemic in Botswana and South Africa, and also because of the ways in which at least some of the firms could potentially avoid the epidemic's impacts.

Only 10 of 70 Nigerian firms in our sample reported an AIDS death among employees in the five years preceding the survey, or about 14%, a proportion that is similar to that reported in Rosen et al. (8). Thus, it is not surprising to find from Table 8-8 that only about 11% of the firms in our sample, or 8 of 70 that responded (all but one in Oyo State), reported that their profits or operations had been affected by HIV/AIDS. Among the five firms whose representatives provided a guess as to the number of HIV-positive employees, the estimated HIV prevalence rate was 1.3%, with AIDS prevalence possibly much lower. Firms reporting the death of an employee because of AIDS also reported being able to replace that employee, and data the firms provided to us reveal that the proportion of employees showing up for work appears to be high, ranging from 90 to 100%.

These findings suggest that it is still early in the AIDS epidemic for any negative financial effects to show up among Nigerian firms. Moreover, strategies adopted by some of these firms to lower their financial liability from workers with HIV/AIDS are likely to have further reduced these already small impacts. For some other firms, if they continue to support employee benefits at their current levels, a significant HIV epidemic among employees could severely affect their economic viability, especially if they are committed to these benefits for legal and/or cultural reasons. Public sector firms may be especially vulnerable on this account.

This does not mean, however, that longer-term effects can be wished away if the epidemic were to greatly expand in magnitude, even with the strategies described earlier. The survey data (not reported in Table 8-8) also reveal that employee departures linked to AIDS have the potential of increasing attrition rates in a non-trivial way: In firms reporting an AIDS case, attrition rates were 50% to 100% higher than other firms. Some 10 firms (14% of the total) also reported an increase in the proportion of workers reporting sick and the number of deaths among employees in the five years preceding the survey. Whether HIV caused these higher attrition and worker absenteeism rates can only be settled by obtain-

Characteristic	Oyo State		Plateau State	
	Public	Private	Public	Private
Number of firms	8	38	5	19
Condom distribution	3	9	1	1
STI diagnosis and treatment	2	6	0	2
Voluntary testing	1	9	0	2
Counseling	1	11	1	3
IEC programs	4	10	2	7
At least one of the above programs	5	19	3	8

Source: Authors' calculations based on survey data.
Abbreviations: STI: sexually transmitted infection; IEC: information, education, and communication

Characteristic	Oyo State		Plateau State	
	Public	Private	Public	Private
Number of firms	8	38	5	19
HIV affected profits?	1	6	0	1
Estimated HIV positive as percentage of employees	3.0 (1)	1.3 (3)	0	0.5 (1)
Employees with HIV/AIDS during past five years	1	4	1	4
Able to replace employees who have died from AIDS?	1	4	1	4
Percentage of workers showing up for work on average	90% (8)	95% (25)	98.5% (2)	100% (13)
Increasing share of employees leaving for sickness/death?	2	0	0	2
Increasing share reporting sick or funerals during the past five years?	0	4	2	4
Average number of weeks for training new employees	5.5 (4)	10.0 (26)	3.0 (4)	5.3 (10)
HIV as future problem for profits?	1	21	0	2

Source: Authors' calculations using survey data.
Note: Numbers in parentheses indicate firms that reported the information.

ing more information about the HIV status of workers and longitudinal data, which we do not have at present. But if these reported trends are, in fact, attributable to HIV, then higher rates of HIV prevalence in Nigeria in the future — by fueling similar increases in attrition rates and absenteeism across all firms — could mean serious delays in filling vacant positions.

The firms we surveyed are clearly worried about the future impact of HIV/AIDS on their economic bottom line. As the last row in Table 8-8 suggests, three times as many firms report being concerned about the impacts on future profits as the number of firms reporting a current impact of HIV/AIDS on profits (24 versus 8). Keeping in mind the differences in the samples between our sample and that used by Rosen et al., it would appear that a slightly greater proportion of Nigerian firms (24 of 70, or 34%) are worried about the economic impacts of HIV than was the case only a few years ago (24%) (8).

Impacts on Non-Labor Costs: The Insurance Sector

Apart from impacts on the costs of labor, HIV/AIDS could also influence non-labor costs of firms. In the introduction we discussed the potential impacts on credit rating and consequently the borrowing costs of firms. There is little evidence of such impacts in Nigeria thus far, and one might imagine that poor infrastructure, political instability, and the generally weak rule of law to be a much greater influence on risk rating of firms in Nigeria than HIV/AIDS. Instead, we focused on a category of non-labor costs that more directly reflect HIV/AIDS — claim payouts by health and life insurance companies. These are like-

Table 8-9. Insurance Companies Offerings of Health Insurance Policies, 2004

Business	Oyo State	Plateau State
Individual health policies	19	9
Private employer group policies	19	7
Public employer group policies	13	6
Other	3	1

ly to be important for firms that offer health and life insurance since an advanced HIV/AIDS epidemic could increase claims payments significantly.

To assess the current and potential future impact of HIV/AIDS on Nigerian insurance companies, we carried out a survey of 29 Nigerian insurance companies, only 3 of which were in the public sector. Most of these companies offer health insurance products: 28 had individual health insurance clients, 26 had group policies with private employers, and 19 had group policies with public sector employers.

The primary mechanism used by Nigerian insurance companies to avoid the adverse impacts of HIV/AIDS is the practice of excluding individuals who are HIV positive from obtaining a policy. Twenty of the 29 companies in our sample practiced exclusion restrictions of this type. Most of the companies test individuals for HIV before selling them insurance policies. However, these companies do not exclude HIV-positive individuals who are already policyholders from obtaining benefits. This could leave them potentially financially vulnerable in the short-run to group insurance policyholders who turn out to be HIV positive. On the other hand, if group policyholders are also tested for HIV prior to their being accepted for insurance, or if insurance premiums are risk- and experience-rated, insurance companies can address their financial risk by simply raising premiums for companies with a high number of HIV-positive personnel. Unfortunately, we know too little about the principles underlying the sale of group-insurance policies in Nigeria to say more on the subject.

One way to assess the impact of HIV/AIDS on Nigerian insurance companies is to estimate its impact on insurance company claim payments directly. This is easier said than done; only five companies agreed to share their financial data with us. With these limitations in mind, the data reveal quite substantial surpluses of premiums over claims—about 50%. This finding supports on the surface, at least, the contention that AIDS has not imposed losses on insurance companies. This is not to say that AIDS expenditures are negligible. One of the few insurance companies that supplied us with estimates of claims data associated with AIDS determined that nearly 20% of the overall claims it paid were HIV/AIDS related. The company was also concerned about the future implications of AIDS: it projected that if the share of policyholders with AIDS exceeds a mere one-quarter of a percent among all policyholders, it will not be able to break even.

That said, it is difficult to imagine a situation in which insurance companies bear the brunt of a future HIV/AIDS epidemic on a sustained basis, given the arsenal of strategies at their disposal, such as

risk/experience rating in premium setting and exclusion restrictions. More than likely firms outside the insurance sector will feel the impacts, as will households affected by AIDS.

CONCLUSION

Our findings suggest that the AIDS epidemic in Nigeria is not yet advanced enough to have adversely affected the financial state of Nigerian firms, whether in the insurance sector or outside it. With the scale of the epidemic still relatively small, even firms that are pre-committed to providing medical and other employee benefits to their workers regardless of their HIV status may not yet be adversely affected.

Our findings also suggest that strategies adopted by some Nigerian firms to avoid the burden of HIV/AIDS include the testing of applicants and the termination of employees found to be HIV positive. This is unsurprising if somewhat unpalatable behavior, and one that would be expected of optimizing firms (18). However, it does have a distributional impact, shifting the financial burden of HIV/AIDS to households, the government, and nongovernmental entities that support people living with HIV/AIDS; this trend has been experienced in some other African countries as well (9).

If the scale of the AIDS epidemic were to increase dramatically, the distributional impact will be increasingly felt in rising poverty rates among households and fiscal burdens. Moreover, there may be issues about the long-run well-being of firms, especially if the epidemic were to greatly enlarge in Nigeria, so that the pool of workers the firms can draw on may lack adequate levels of education and health. Indeed, this last concern is reflected in the firms' own assessments and their increasing role in HIV-prevention activities directed to their workers.

These issues raise an obvious question: What is the optimal strategy toward involving firms to act in ways that are socially desirable? As noted in the introduction, relying upon individual firms to behave in a socially desirable manner appears difficult, given the external benefits such action confers on other firms. At best the firms are likely to undertake HIV prevention activities among their employees, and this emerges from the Nigerian data as well.

Three types of policy steps have been suggested in the economic literature as a means of encouraging firms to undertake greater HIV prevention activities (10,18). First, there are government subsidies that could be provided to private firms to promote prevention activities and reduce discriminatory behavior. Firms could be offered tax deductions for expenditures incurred on HIV-prevention programs, or for instituting workplace programs that enhance the rights of people with HIV. A more sophisticated strategy could take the form of subsidizing insurance premiums, contingent on the introduction of prevention programs by firms. Because only a small percentage of firms in Nigeria purchase private insurance, the focus would have to be on contributions to social insurance programs. Another possibility would be to offer prioritized access to government ARV programs for firms that follow best practices with regard to prevention and anti-discrimination programs in the workplace. Insurance premiums contingent on prevention programs or better access to ARV programs financed by the government would reduce firms' financial risk exposure from engaging employees with HIV and reduce the incentives for

HIV-related discrimination by employers. Penalties and taxes on firms that neither impose anti-discriminatory norms in the workplace nor promote preventive interventions are another possibility, but we believe that their implementation might be more difficult because of heavier informational requirements on the government, which presumably would have to furnish proof of non-compliance.

Second, the government could itself finance *and* provide prevention services, the typical manner in which HIV prevention programs directed at the general population are currently undertaken. But because employees are concentrated in one place and serve as a captive audience, preventive interventions undertaken at the workplace are particularly cost-effective in reaching an important segment of the adult population. In the Nigerian context, one possibility is for the government, funding agencies, and civil society organizations involved in HIV/AIDS work to supply free condoms and to produce and conduct information, education, and communication campaigns in Nigerian workplaces. Some of this is already occurring, although its scale could be expanded. Such a strategy may be invaluable for firms outside the corporate sector that are unlikely to gain much from increased tax deductions, if they do not pay taxes or already have a low tax burden. In this manner, at least part of the cost of these programs—but not production losses due to employee attendance at education programs—could be borne by groups other than firms. These measures may still require considerable buy-in from firms, especially those that intend to discriminate against employees and potential hires with HIV, and thereby shift the cost to another firm or the individuals themselves.

A third possibility, suggested by Bloom and Sevilla in line with the famous “Coase solution” in economics, is that private entities be assigned *property rights* to HIV prevalence and discrimination, in that they somehow become responsible for its reduction (18). They do not suggest a practical mechanism by which this “internalization” of the externality can be done. However, we can imagine settings whereby policy interventions and programs are promoted not by individual firms but by a collectivity of firms such as Nigerian business associations, both in the corporate sector and in the informal sector, perhaps with some nudging by the government. The obvious advantage of business association involvement is that individual firm interests’ would be expressed in the context of the collective interests of associations that may otherwise impose external costs on each other, thereby addressing at least part of the externality.

These possibilities still do not address costs imposed on households by collections of firms, which may choose to collectively discriminate against people with HIV and share related information about current and past employees. This possibility suggests a need for a broader and more active dialogue between business leaders, civil society organizations, and the Nigerian government whereby prevention, care, and elimination of discrimination become part of the national and corporate ethic. Firms do care about brand names and goodwill, and explicit support from civil society (including religious organizations) for firms and business associations undertaking HIV-intervention work could be an important way to enhance their goals in this respect. HIV-related activities of members of the Global Business Council on HIV/AIDS, which includes some of the largest firms in the world, offer a useful model in this regard (10).

ACKNOWLEDGMENTS

We are grateful to a number of individuals and institutions for their encouragement, comments, and material help in undertaking this work. We are especially thankful to Professors Phyllis Kanki and Michael Reich, Dr. Soji Adeyi, and Dr. Wole Odutolu at the AIDS Prevention Initiative in Nigeria. At the Nigerian Institute of Social and Economic Research (NISER) we greatly benefited from the guidance and advice of Dr. D. O. Ajakaiye, Dr. A. Sunmola, Ms. Nancy Nelson-Twakor, Mr. L. N. Chete, and Mr. A. O. Ajala. Dr. A. O. Okesola (Oyo State AIDS Control Programme) and Mr. Bala Mitok Runtong (Plateau State AIDS Control Programme) provided us with access to data on expenditures on HIV/AIDS. Seminar participants at Harvard and NISER provided several useful comments that benefited this study.

REFERENCES

- Over M. *The Macroeconomic Impact of AIDS in Sub-Saharan Africa*. Technical Working Paper No. 3. Washington, DC: World Bank, Africa Technical Department, 1992.
- Yamano T, Jayne TS. Measuring the impacts of working-age adult mortality on small-scale farm households in Kenya. *World Dev*, 2004;32:91–119.
- Bloom D, Canning D, Sevilla J. The effect of health on growth: a production function approach. *World Dev*, 2004;32:1–13.
- Bell C, Devarajan S, Gersbach H. *The Long Run Economic Costs of AIDS: Theory and an Application to South Africa*. Washington, DC: World Bank, 2003.
- Cuddington J. Modeling the macroeconomic effects of AIDS, with an application to Tanzania. *World Bank Econ Rev*, 1993;7:403–417.
- Bloom D, Mahal A. Does the AIDS epidemic threaten economic growth? *J Econom*, 1997;77:105–124.
- Young A. The gift of the dying: the tragedy of AIDS and the welfare of future African generations. *Q J Econ*, 2005;120:423–466.
- Rosen S, Macleod W, Vincent J, Thea D, Simon J. *Why Do Nigerian Manufacturing Firms Take Action on AIDS?* Discussion Paper No. 3. Boston: Center for International Health and Development, Boston University School of Public Health, 2003.
- Rosen S, Simon J. Shifting the burden: the private sector’s response to the AIDS epidemic in Africa. *Bull World Health Organ*, 2003;81:131–137.
- Bloom D, Mahal A, River Path Associates. HIV/AIDS and the private sector: a literature review. Draft paper. Boston, Massachusetts: Harvard School of Public Health, 2002.
- Biggs T, Shah M. *The Impact of the AIDS Epidemic on African Firms*. RPED Discussion Paper No. 72. Washington, DC: World Bank, Africa Region, 1997.
- Bollinger L, Stover J. *The Economic Impact of AIDS in Zambia*. Washington, DC: Futures Group International, 1999.
- Bollinger L, Stover J, Nalo D. *The Economic Impact of AIDS in Kenya*. Washington, DC: Futures Group International, 1999.
- Bollinger L, Stover J, Riwa P. *The Economic Impact of AIDS in Tanzania*. Washington, DC: Futures Group International, 1999.
- Whiteside A, Sunter C. *AIDS: The Challenge for South Africa*. Cape Town, South Africa: Human & Rousseau Tafelberg, 2000.
- Moody’s Investors Service. *South Africa*. New York: Moody’s Investors Service, Global Credit Research, 2000.
- McPherson M, Hoover D, Snodgrass D. The impact on economic growth of Africa of rising costs and labor productivity losses associated with HIV/AIDS. Discussion Paper No. 79. Cambridge, Massachusetts: Harvard Institute for International Development, 2000.
- Bloom D, Sevilla J. People and profits: on the incentives of business to get involved in the fight against AIDS. Draft paper. Boston, Massachusetts: Harvard School of Public Health, 2003.