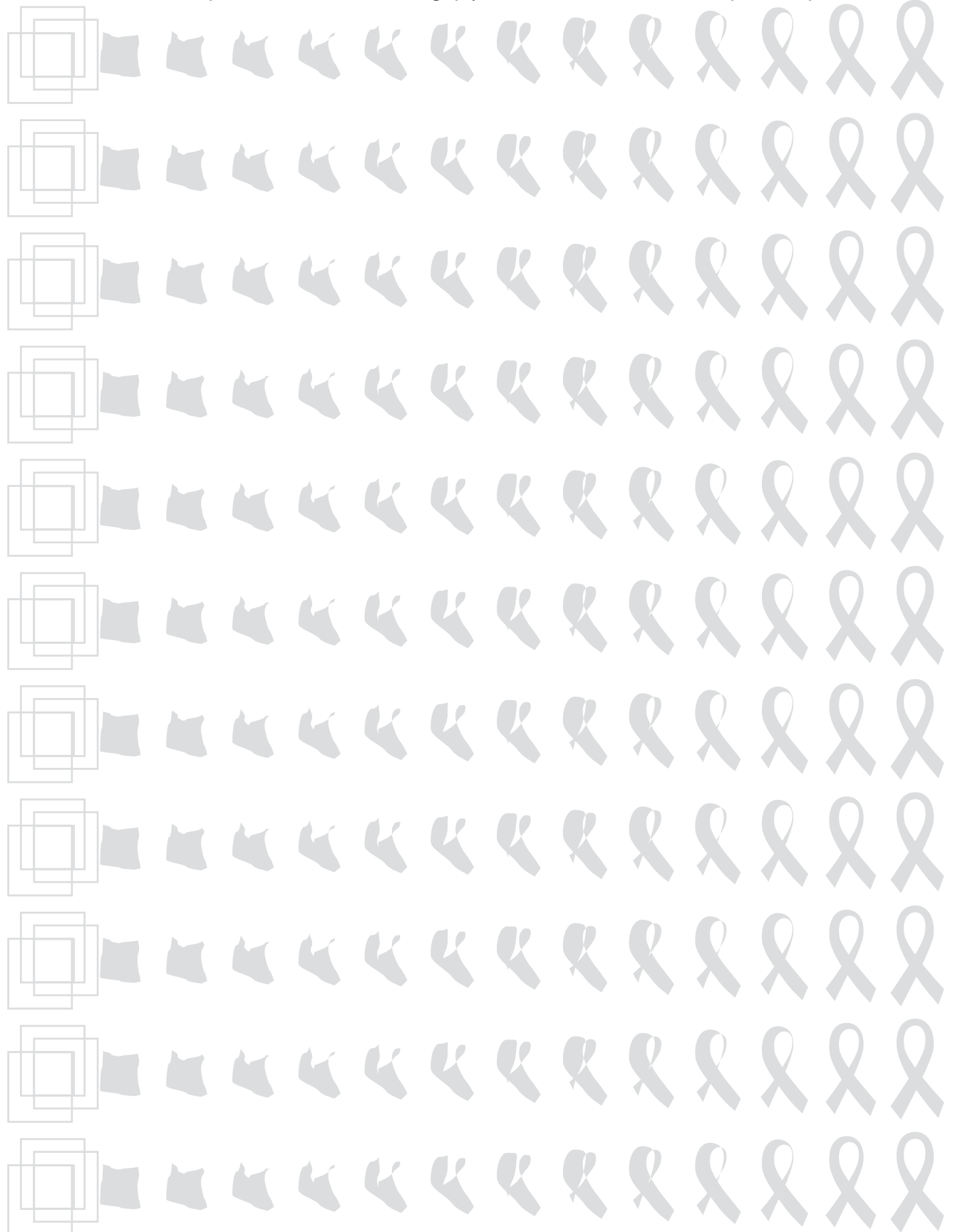




# HIV/AIDS and work: global estimates, impact and response 2004

This document is one of 6 chapters, 6 sets of tables, the bibliography and the technical notes that make up the full report.



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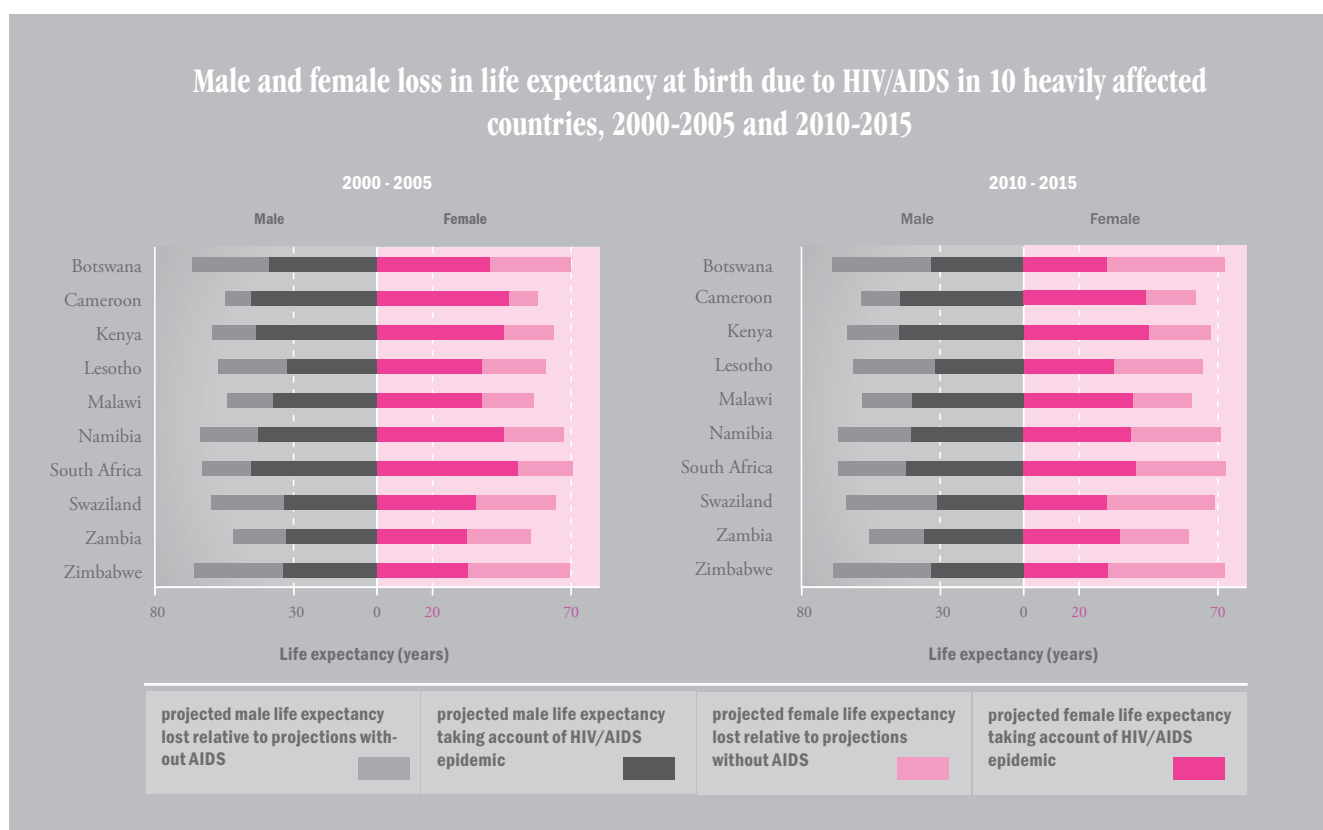
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## Chapter 2. The macroeconomic impact of HIV/AIDS: human capital, labour and production

The main channels through which the HIV epidemic affects social and economic development are through its impact on the labour force and its related effects. The effects flow from the key fact that the epidemic primarily affects the working-age population, where HIV-related illness and deaths are concentrated. Life expectancy is falling in many countries affected by the

not confined to a simple calculus of labour losses (see Figure 2.2), but have much deeper implications for the structure of families, the survival of communities and enterprises, and longer-term issues of sustaining productive capacity. Similarly, the HIV epidemic erodes the savings capacity of households, of formal and informal productive enterprises, and of government, through its effects on income and



**Figure 2.1**

Source: UN, 2003

epidemic, reflecting increasing rates of adult mortality, and accompanying reductions in the workforce. Figure 2.1 shows the losses in life expectancy due to HIV/AIDS for the male and female populations in the ten most affected countries at two periods: 2000-2005 and 2010-2015.

Individuals with important economic and social roles (both men and women) are prevented from providing their full contribution to development. The effects are, of course,

on levels of expenditure. Over time, reduced rates of savings lead to diminished investment, slower growth of aggregate output, constraints on employment, and the likelihood of impoverishment.

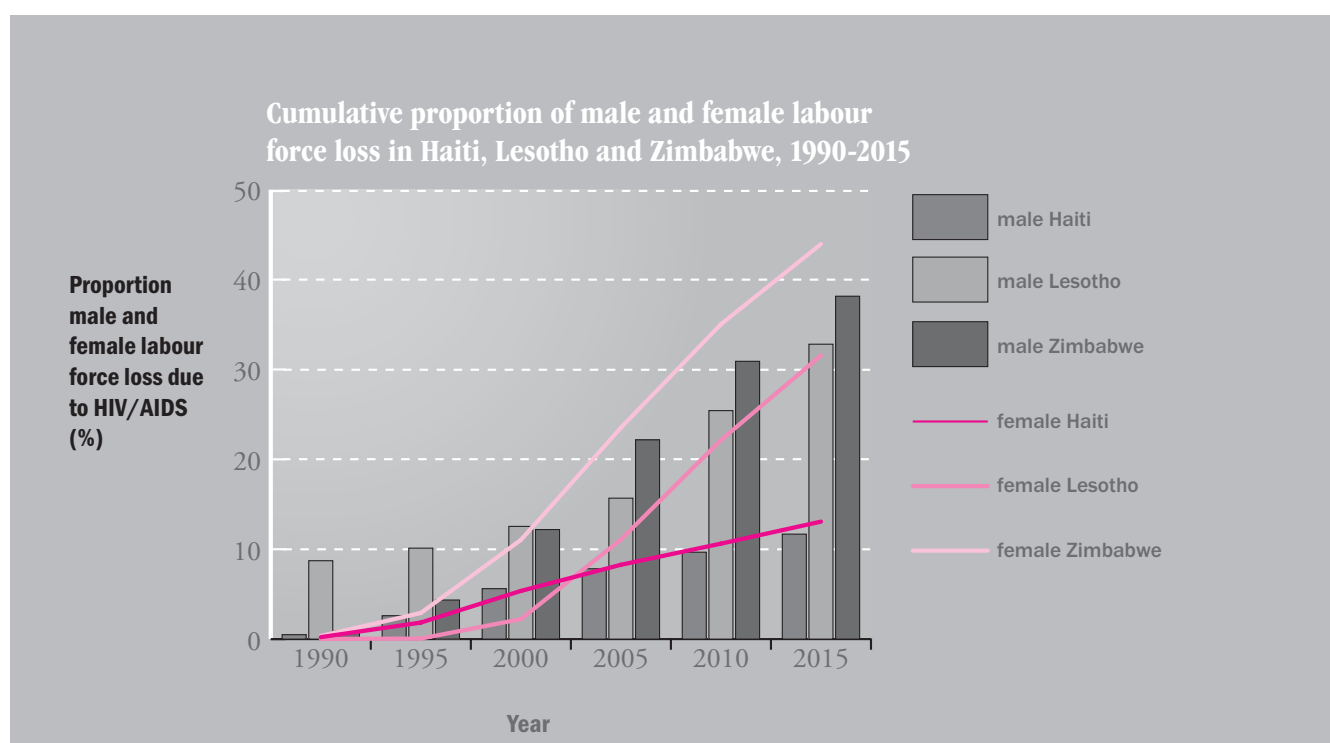
Loss of income, impoverishment of households and failures of informal economy enterprises increase poverty, slow the growth of employment, and threaten sustainable development. In this context, we look at the evidence of microeconomic stress, assess when

the system-wide collective effect was felt, and estimate the size of the impact of HIV/AIDS since the early 1990s.

The epidemic imposes heavy constraints on families. If the household member who is ill with AIDS is the breadwinner, she/he can no longer steadily work and contribute to household income. At the same time that the income of persons with symptomatic AIDS is reduced due to loss of job or livelihood, the AIDS-related medical care costs and other expenses increase. The resulting hardship in households is countered as much as possible by the remaining working-age adults, older persons and children. Other household members enter the labour force, engage in subsistence farming, or provide daily care for dependants and the home. Sometimes, the family sells its assets to cover urgent expenses, and distress sales are often at a loss. Despite these efforts, there are residual shortcomings and shortfalls. There is a noticeable aggregate

- or the inevitable action - to withdraw children from school so that they may enter the labour market. The switch from school to job compromises their future. It also reduces the potential human capital available to the economy as a whole.

The impact of the HIV/AIDS epidemic on a firm is similar to that on a household—increasing expenditures, declining productivity and diminishing revenues. The presence of HIV/AIDS affects expenditures by increasing costs for health care, insurance, death benefits (including burial fees), and for the training and recruitment of replacement labour. Productivity gradually declines because of increasing absenteeism and mortality. This decline in worker productivity as symptomatic AIDS progresses was documented over a period of three years in a tea estate in Eastern Kenya, and was noted to be especially severe in the last year before death. Increasing absenteeism is also due to an increasing need



**Figure 2.2**

Source: Same source as for Main table 4 (see Technical notes) with breakdown by sex added

reduction in production and in income, and a discernible aggregate fall in consumption.

Efforts to compensate for the loss in income have a number of labour market consequences. Other adults, often unskilled, may enter the labour force for the first time, older persons may return to work, and young household members may enter the labour force prematurely. One coping strategy that is particularly damaging involves the decision

for time off to meet related obligations, such as care-giving, attending funerals or for newly recruited staff to receive training. A study of firms in Botswana and Kenya revealed that absenteeism accounted for more than 50% of overall increased labour costs due to HIV/AIDS. Finally, productivity is dampened by the loss of technical and experienced workers when staff turnover demands that less skilled workers be taken on.

## Studies on the macroeconomic impact of HIV/AIDS

Study	Countries and period covered	Period of HIV/AIDS data	Growth of GDP	Growth of GDP per capita
Over (1992)	30 African countries (1990-2025)	Early 1990s		Reduced by 0.15% (0.6% in the 10 most affected countries)
Bloom and Mahal (1995)	51 countries (1980-1992)	Early 1990s	Insignificant effect	
Bonnel (2000)	50 countries (1990-1997)	Mid 1990s		Reduced by 0.7% a year
Dixon et al. (2001)	41 countries (1960-1998)	Late 1990s	Reduced by 2-4% in relation to prevalence of HIV	
Coulibaly (2004)	41 countries (1992-2002) 33 African countries (1992-2002)	Early 2000s	Reduced annually by 0.9% on average Reduced annually by 1.1% on average	Reduced annually by 0.6% on average Reduced annually by 0.7% on average

**Table 2.1**

Source: Adapted from UN, 2003

The aggregate toll of illness and deaths of labour force participants on society and on the economy is already highly visible, as illustrated by the economic effects shown in Main table 2. Estimates and projections of the labour force losses due to illness and deaths are shown in Main tables 3A, 3B and 3C, and in Main table 4. The consequences for the private and public sectors, and for the informal economy are reviewed in Chapter 3.

HIV/AIDS affects businesses of all sizes. It can have an especially significant impact, however, on informal and small and medium-sized business enterprises, depending on the HIV prevalence level and the level of skills needed for the production process. For all businesses, if the most productive workers in the labour force are those who are better educated and are therefore more difficult to replace, the impact on firms can be severe. When high-level managers are HIV-positive, the strategic management of the business may eventually be affected. If key management is lost to AIDS, the competitiveness of the firm will diminish in the marketplace, which can lead to the failure of the business. In the case of small businesses, because they are often dependent on a few skilled workers and owner management, the loss of specific skills and expertise can lead to the collapse of the business.

Productivity losses and reduced production lead to a decline in profitability. In such circumstances, resorting to downsizing with consequent job losses may be compounded by falling or shifting patterns of consumption. One deleterious result is reduced tax revenues and reduced investment capital. At some point, these conditions act as powerful disincentives for foreign investment and, over the long term, developmental gains will slow, stagnate and regress. The damage in terms of impoverishment of the stock of human capital can, in turn, become a major source of economic inertia, when human

resources needed to support and manage farms, businesses, public services and the government are greatly reduced.

It is a mistake to believe that labour is in unlimited supply in developing countries, or that it can be replaced without cost. There is evidence that even so-called unskilled labour has built up a capital of location- and task-specific skills that are very hard to replace. This is most obvious in the case of agricultural skills, but it is also true of other economic activities where appearances inaccurately suggest that skills can be easily replicated and replaced. Clearly, family-based producers face critical constraints in replacing labour lost to HIV/AIDS, with very important consequences: the transfer of skills and knowledge to children is jeopardized, and the gendered nature of many activities in agriculture and in household production makes labour replacement more difficult. Accordingly, the impact of HIV/AIDS is pervasive and complex in informal enterprises, not least because of the consequences of illness and deaths on the sustainability of enterprises that are highly dependent on internal generation of flows of savings for their survival. Even more important, based on what limited evidence is available, are the losses of experience and management/technical skills, of entrepreneurship and of leadership, which are so essential to survival. These and other consequences of HIV/AIDS in the informal economy are further discussed in Chapters 3 and 4.

The overall, macroeconomic impact of HIV/AIDS on national economies has been researched since the epidemic began. Economists and planners have sought to understand how the pandemic has affected, or would affect, macroeconomic aggregates. Most often, they have focused on the impact of HIV/AIDS on economic growth, and some of these studies have revealed that the epidemic

has little or no significant effect on economic growth as measured by the effects on GDP. In such studies, the decline in population growth due to the effects of HIV/AIDS has been found to counterbalance the decrease in GDP growth that leads to a net marginal impact on per capita income. Authors of these findings point out that the impact may be small if the labour supply available can adequately replace workers leaving the labour market because of HIV/AIDS, and if employee benefits are negligible.

Later macroeconomic studies, however, have in general concluded that HIV/AIDS does lead to reduced economic performance in countries with severe epidemics. These estimates of the economic impact of HIV/AIDS indicate that the pandemic would reduce the average annual GDP growth rate by 0.5–4% per annum in the most affected countries of the African region.

A summary of the main international studies on the macroeconomic impact of HIV/AIDS appears in Table 2.1. All compared the rate of GDP growth and of GDP per capita in the presence and in the absence of the epidemic. The studies differ in terms of assumptions, samples of countries, periods covered, and methodological approaches. Nevertheless, the progression in the findings of the studies conducted from 1992 to 2001 is such that the more recent the study, the stronger the observed impact of HIV/AIDS. This is likely to indicate that the macroeconomic impact has become increasingly measurable as a larger proportion of households, workers and employers are affected by the epidemic. As the transmission of HIV continues, it is becoming more and more evident that the long-term macroeconomic effects of the epidemic as measured by the impact on GDP have been increasingly destructive of growth and development.

Whether they show a measurable impact or not, however, it is important to note the shortcomings of all these types of studies with respect to the broad range of effects of HIV/AIDS on the labour force and on employment. For example, they generally ignore the significant costs involved in replacing workers, even those who are unskilled. Most also ignore the cumulative impact of HIV/AIDS on networks, organizations and institutions, which weakens the transfer of information, expertise, of institutional memory and of the 'rules of the game'. When these factors are taken into account, not only are the losses of economic growth due to HIV/AIDS seen

to be more substantial, but the fact that the unmeasurable effects are likely to cumulate over time in a non-linear fashion can be better appreciated. Moreover, it is important to emphasize that the longer the epidemic continues unaddressed, the harder countries will find it to repair the damage, as well as to halt and reverse the decline, whether the range of effects is fully gauged or not.

Thus the effects of the epidemic are deeper and more serious than conventional estimates of the impact on GDP can convey, significant though these estimates are for countries more seriously affected by the epidemic. Over time, the epidemic cumulatively reduces the human and organizational resources of countries in ways that diminish the capacity to sustain productive activities. This is the main threat to sustainable socio-economic development.

Bearing in mind these limitations, the ILO deemed it useful to estimate the measurable impact with the most recent data available. Accordingly, estimates of the impact of HIV/AIDS on growth were developed for 45 of the 50 countries covered in this report. The ILO study found that, between 1992 and 2002, HIV/AIDS reduced the rate of GDP growth by 0.9% a year, on average, in the 41 countries where the economic impact of HIV/AIDS was measurable. These findings suggest that, during that period, the 41 countries would have grown by, on average, 0.9% more per year than in the absence of HIV/AIDS (see Main table 2). This loss of income growth may appear relatively small, but its cumulative effect over 15 years, for example, would reduce economic growth by about 14% compared to the level it would have been in the absence of the epidemic. A crude estimate of the financial cost indicates a loss of more than US\$17 billion per year for the 41 countries as a whole. Similarly, it is estimated that a potential loss of US\$270 billion could be incurred by 2020 by these same countries, if the shortfall in their growth rate continues at about 0.9% a year on average.

African countries were the hardest hit, given that their average HIV prevalence rate was higher, at 7.9% (see Main table 2). The rate of income growth in this region was reduced by 1.1% per year, on average, over 1992–2002; economic growth in these African countries would have been greater by 1.1% each year, on average, had HIV/AIDS not been a factor. If the HIV/AIDS epidemic were to persist at the same prevalence and under the same conditions, the collective economy of the

33 African countries would grow 18% less by 2020 than if HIV prevalence had not reached its current level. This represents a gap of about US\$144 billion for Africa alone, which is likely to be a minimum estimate, if one considers the additional, unmeasured, effects that relate to cumulative losses of human and organizational capacity.

Latin America and the Caribbean also experienced a loss in economic growth, albeit less than in Africa. According to the ILO model, income would have grown by 0.5% more per year had there been no HIV/AIDS epidemic. The shortfall in growth is equivalent to almost US\$400,000,000 per year in total production.

Whereas some regions showed an economic impact, the economies of large Asian countries (China, India), of Brazil and of the

due to HIV/AIDS (the epidemic both increases deaths and reduces the numbers of potential parents) tends to offset the decline in economic growth. But there is no comfort to be derived from this observation: what changes in per capita income cannot show is that, when both productive output and the productive labour force decline, there are irrevocable losses to the economy, even if per capita income remains unchanged.

Bearing this in mind, the findings are still worth noting. The ILO model showed that, whereas HIV/AIDS lowered the rate of growth of GDP per capita by 0.6% per year, on average, in the 41 countries over the period 1992–2002 (equivalent to a shortfall of US\$15), it reduced per capita GDP by 0.7% in the African countries, which is equivalent to US\$11 per person per year. As the average per capita GDP growth for the

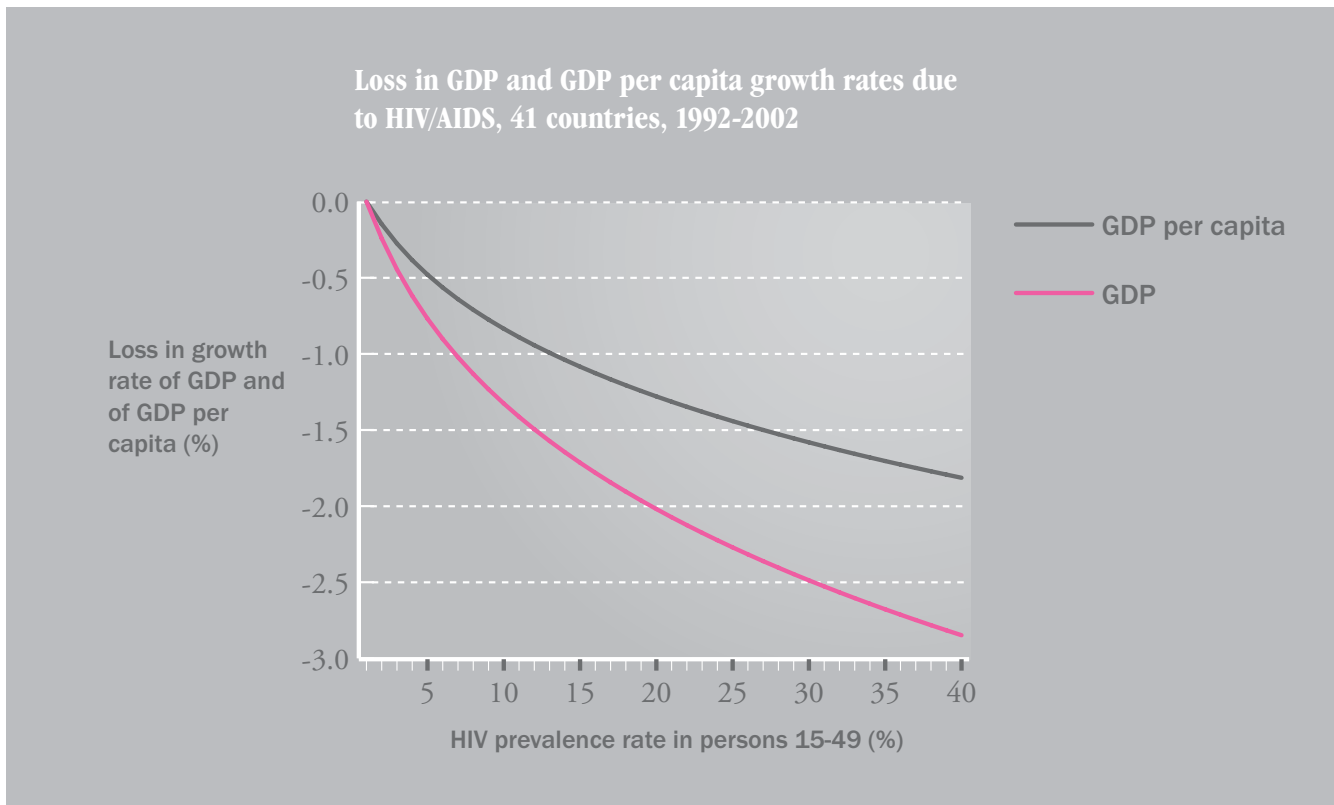


Figure 2.3

Source: Main table 2

USA did not show effects of the epidemic. Their large populations and vast economies, in tandem with relatively low recorded HIV prevalence levels, largely explain the difficulty of measuring the impact, or the finding that the measured impact was very small.

The impact of HIV/AIDS on GDP is less in per capita terms, accounting for two-thirds (0.6%) of GDP growth loss in the case of the 41 remaining countries. This is because the decrease in population growth

African countries was 0.7% over the period, the results of the research suggest that the economies of these countries lost half of their potential growth during that period because of HIV/AIDS: in the absence of the epidemic, with all other conditions assumed to be equal, the GDP per capita of these countries would have grown twice as fast, at 1.4% per year. The loss in overall growth in Latin America and the Caribbean in per capita terms was lower, at 0.3% per year (equivalent to US\$10 per capita annually), and represents a

substantially smaller proportion of the growth in per capita income than was achieved by this region over the same period.

It is important to remember also that, as an aggregate measure, per capita income does not capture the welfare of the population. It takes into account all surviving persons, including those who are already living with HIV/AIDS. In addition, it does not reveal information on how income is distributed in a population. For example, the death of people on lower incomes will increase the overall per capita GDP without there being any improvement in the well-being of the population. Despite these shortcomings, a high level of HIV prevalence is still generally associated with a higher reduction in growth of per capita income, other things being equal. Figure 2.3 illustrates this relationship and the losses to the growth rate of GDP and GDP per capita as a consequence of HIV/AIDS. The relationship between HIV/AIDS and growth suggests that the estimated impact for countries with HIV prevalence of 20% is a reduction in output of 2%, and a decrease in per capita income of roughly 1.3%.

*HIV/AIDS destroys human capital built up over years and weakens the capacity of workers to produce goods and services for the economy.*

The ILO research clearly suggests that the macroeconomic impact of the HIV/AIDS epidemic cannot be ignored. HIV/AIDS destroys human capital built up over years and weakens the capacity of workers to produce goods and services for the economy. This loss of skilled labour, together with the increase in care and treatment costs, tends to depress production, hamper savings and impede investment in the long run. Of particular concern is the fact that such effects would have a substantial negative impact at the microeconomic level in specific industrial and occupational sectors. In the informal sector, working people affected by HIV/AIDS suffer extraordinarily from the epidemic because they have no social protection for themselves or their families, and enterprises suffer because they are so labour-intensive. This means that the worsening socio-economic burden likely to accompany the increase in HIV/AIDS mortality and morbidity will most adversely impinge on the countries already most affected by HIV, causing further and deepening deterioration, most particularly in Africa.

The overall findings point to negative effects on economic growth and sustainable development that follow from the impact of HIV/AIDS on the labour force—a critical factor for the economy. In turn, slowed economic growth has serious implications for both job creation and employment, and for government budgets. Job creation and employment depend on both domestic and foreign investment and, whereas foreign investment may be discouraged by sluggish growth, substantial domestic investment that could come from savings is being diverted by the costs of HIV/AIDS to households and small businesses, and, more generally, throughout the informal economy. Countries where HIV/AIDS has had the most severe impact on economic performance are facing extreme pressure on budgets which affects the capacity of countries to address all areas of social and economic policy, especially in matters of employment, education and health.

HIV/AIDS erodes the capacity for economic growth and development through low savings rates and investment, slow employment growth and pressures on government revenues. These combine to constrain efforts to prevent worsening poverty, and they may seriously compromise the achievement of sustainable socio-economic development in the hardest-hit countries.

