Progress Report

HIV/AIDS Impact Studies II –– Some Progress Evident

Tony Barnett, Professor of Development Studies, School of Development Studies, University of East Anglia, Norwich NR4 7TJ, UK; email: a.barnett@uea.ac.uk

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In contrast to the previous report (Barnett, Whiteside and Desmond, 2000), the last year has seen some major developments. The academic community seems to be taking the issue on board, perhaps as a result of its exposure at the XIIIth International Conference on HIV/AIDS in Durban, South Africa, July 2000. The impetus will increase as a result of the United Nations General Assembly Special Session on HIV/AIDS in June 2001. There is evidence that this is happening – all the UN agencies are rushing around frantically endeavouring to show that they are engaged with the AIDS problem. In many cases the result is rushed and/or recycled documents.

Two major publications dealing with the social and economic impact of HIV/AIDS appeared in the last 12 months. These are:

- The South African Journal of Economics, (volume 65: 8, December 2000),.summarising papers presented at the International AIDS Economics Network (IAEN) Symposium on the Economics of HIV/AIDS in Developing Countries, Durban, South Africa, July 2000;

- A special issue of the Journal of International Development, AIDS and Development in Africa, (volume 13:4, May 2001).

The papers in these two collections are often interlinked and in two cases the same authors (Arndt and Lewis, 2000; 2001; Kumaranayake and Watts, 2000; 2001) appear in the both collections.

The IAEN meeting was important. There were 25 papers and the special edition of the journal presents seven of these. Four look at the macroeconomic impacts of HIV/AIDS, in general and in more detail in three regions – South Africa, Botswana and the Caribbean. Two papers consider the effects on productivity among sugar workers in South Africa and on the sources of financial assistance for HIV/AIDS affected households in Tanzania. The remaining paper examines the changing nature of HIV/AIDS transmission in Latin America, in particular the relation between poverty, nutrition and transmission.

For most developing countries, evidence so far suggests AIDS has insignificant effects on the growth rate of per capita income. There has been no evidence of reverse causality from growth to AIDS, leading observers to believe that a policy of benign neglect might be in order. However, World Bank economist, René Bonnel (2000) suggests that HIV/AIDS must now be seen as a "development crisis". This is because it affects the three main determinants of economic growth: physical, human and social capital and that there are four reasons why HIV/AIDS results in such a crisis. These are:

1. The speed and scale of the epidemic has been much worse than was projected;
2. HIV/AIDS can now be seen to reduce the stock of human and physical capital;

3. AIDS destroys social capital and has severe adverse effects on institutions;
4. Feedback effects amplify the impact of HIV/AIDS on economic growth.

Through a series of regression analyses, Bonnel tests each of these propositions. He concludes that the effect of AIDS on GDP will be severe. Indeed “In the case of a typical Sub-Saharan country with a prevalence rate of 20 per cent, the rate of growth of GDP would be some 2.6 percentage points less each year. At the end of a 20 year period GDP would be 67 per cent less than otherwise.” (Bonnel, 2000, 846). The result is a “vicious downward spiral”. He concludes that reversing the spread of the epidemic and mitigating its impact requires three sets of measures:

1. Sound macroeconomic policies to achieve growth which will enable governments to engage with the epidemic and its impacts;
2. Sound structural reform aimed at addressing some of the factors accounting for the spread of HIV in the first place, in particular social, gender, income and ethnic inequality;
3. Modification of the incentives for people to change their behaviours.

Arndt and Lewis (2000) agree that the situation is dire and that South Africa now stands on the brink of a full-blown AIDS crisis. (Arndt and Lewis, 2000, 856). To clarify the economic implications of this crisis they develop a computable general equilibrium model for South Africa containing fourteen

productive sectors. They run this model over the period 1997-2010 with an AIDS and non-AIDS scenario. Their main conclusions are:

1. that GDP is 17 per cent lower in the AIDS scenario
2. nearly half the deterioration in growth performance is attributable to the shift in government spending towards health expenditure;
3. that the slow nature of impact – gradual and over a long period rather than a “shock” – points to a drag on the rate of accumulation of knowledge (reflected in total factor productivity growth) or in the rate of capital accumulation (through a switch from savings to current expenditure) and that these effects become amplified over time.

The authors note that in contrast to macroeconomic models of impact from a decade ago – particularly Kambou, Devarajan and Over (1992) – their approach takes into account costs beyond the health sector and also contains a time dimension. These additional considerations are of the greatest importance and mark a clearer appreciation of the nature of this impact, and relate directly to the fact that HIV is a lentivirus.

Beyond these general accounts, several attempts have been made at specific description and analysis of impact in particular countries or sectors. Thus Greener et al 2000 look at the situation in Botswana, a country which although it currently has Africa’s worst AIDS epidemic is among the wealthiest on the

continent. On the basis of a simulation exercise using data collected in a previous study of household income, this team concludes that:

1. The epidemic will remain a serious factor in the Botswana economy for at least the next twenty years;
2. Botswana is very vulnerable to the income effects of HIV/IADS – about 25 per cent of households will lose income through AIDS impact in the next ten years;
3. AIDS will dramatically increase the number of destitute households;
4. The epidemic will be responsible for an 8-10 per cent decrease in per capita income over the next ten years;
5. Income inequality will remain more or less constant;
6. Poverty alleviation achievements from the last decade will be negated;
7. Households in poverty will increase by 6-8 per cent in the next ten years;
8. Poor households will become more vulnerable to the effects of poverty. They do not say this but the increasingly evident link between poverty and susceptibility to infection (see Stillwagon, 2000 below) may mean that as poverty feeds back into the equation, so the level of the epidemic will increase over and above their assumptions;
9. The poor will become poorer – their incomes falling by 10-15 per cent in the next ten yeas.

Nicholls et al 2000 publish what is probably the first study of AIDS impact in the Caribbean. They use a range of macroeconomic indicators to assess impact using a variant of the Cuddington and Hancock model (Cuddington,1993; Cuddington et al, 1994). In contrast to many other studies, they try to model the rate of epidemic spread using a network modelling framework, thus taking into account regional social and cultural particularities. Their conclusion is consonant with other findings – for example those in South Africa and Botswana – namely that a rising HIV/AIDS epidemic will lead to negative growth, a fall in the level of GDP and substantial decline in the level of domestic savings.

Eileen Stillwaggon (Stillwaggon, 2000) examines the relation between societal susceptibility to an HIV epidemic rather than vulnerability to epidemic impacts (for this distinction see Barnett and Whiteside, 1999). The result is a most interesting comparative study of Africa and Latin America. Her main contribution is to draw attention to the link between malnutrition, parasitosis and individual and group susceptibility to infections in general and to HIV in particular. The converse of this – the effects of AIDS on nutrition - is touched on by Haddad and Gillespie (Haddad and Gillespie, 2001, 495). Stillwaggon completes a multivariate ordinary least square regression analysis of a number of economic variables onto reported numbers of AIDS cases in Latin American and Caribbean countries. She concludes that there is a strong relationship between poverty and epidemic spread and that the chain of causation between poverty and infection passes in part through the nutritional link and non-HIV related immunosupression (Stillwaggon, 2000, 1006).

Two micro level studies complement the macro orientation of the preceding papers. They are: a study of the economic impact of HIV on male sugar workers in South Africa (Morris, Burdge and Cheevers, 2000) and one of household and community adjustment in Kagera, Tanzania (Lundberg and Over, 2000).

Morris and co-authors used data from clinic, hospital, insurance and employment records in a Kwa-Zulu Natal sugar mill. Information was also collected from a seroprevalence survey of 302 members of the total workforce of 372 people present on one day in 1999. These data were fed into a model projecting seroprevalence in the workforce over six years. The impact of AIDS from the employer's perspective was measured by reference to absenteeism, productivity losses, lost wages, replacement workers, retirement and medical costs. Most infected workers (93.6 per cent) were in the lowest two payroll bands. The main conclusions of the study were:

1. Five per cent of the workforce could be expected to die over an eight year period, and these people would be predominantly among the unskilled and semi-skilled bands;
2. 5.7 per cent of the workforce could be expected to take ill health retirement over the same period;
3. Costs to this industry in this setting arising from AIDS will increase by as much as ten times over the next six years assuming that no treatment will be available which might be expected to decrease

disease progression – an important qualifier in the light of debates about the pricing of anti-retroviral drugs;

Lundberg, Over and Mujinja revisit data collected in the panel survey of households carried out in Kagera, Tanzania between 1990 and 1994. The focus is on the role of inter-household transfers in the community. Their main conclusions are:

1. Wealthier households rely more on private transfers whereas poorer households rely on credit;
2. Richer households trust each other to repay loans. This means that there is a stratum of better off people who help each other and that poorer households are excluded from this network;
3. These kinds of arrangement point to the importance of "social capital" for mitigating the household impact of AIDS deaths and illness.

The authors conclude that this points to the importance of micro-credit as a component of any impact mitigation response. This seems more fashionable than feasible given that badly affected households are likely to be among the most risk averse and hardly prime candidates for micro-credit!

The special issue of the Journal of International Development is devoted to AIDS – its title is: AIDS and Development in Africa. But not all of the papers are about HIV/AIDS impact. Only those dealing with impact are considered

here although several of the other papers are of considerable interest. Attention is drawn in particular to the paper by Gregson, Waddell and Chandiwana (2001). This provides an important metanalysis of the relation between rates of seroprevalence and education in Africa. They conclude that efforts to sustain and increase education levels and to reduce HIV infection should be mutually reinforcing if education is not, paradoxically, to increase the rate of epidemic propagation.

In their introductory essay, Dixon, McDonald and Roberts (2001a: 382). say that AIDS "is of fundamental importance to African economies as it is at the heart of determining the standard of living for their entire populations, not just those afflicted by HIV/AIDS, a crucial determinant of the ability of countries to support HIV/AIDS victims." In surveying the contents of the volume, the authors note that "Economic models may be useful in assessing the impact of the AIDS epidemic, but they cannot, by themselves point to the policies that will minimize the reductions in economic growth and standards of living." (Dixon, McDonald and Roberts, 2001a, 385). Indeed, as we shall see below, it has to be asked how far conventional neo-classical techniques are really able to capture impact at all.

In their own paper (Dixon, McDonald and Roberts, 2001b, 411-426), the authors look at the relationship between seroprevalence and growth in GDP per capita in two broad groups of countries, Southern and Eastern Africa (an area with markedly high reported rates of seroprevalence) and a category they label "Rest of Africa" (areas which include North Africa and which have

lower reported seroprevalence – and the word “reported” is important here as in some cases, for example Nigeria, the epidemic statistics have been very poor indeed). They suggest that reductions in life expectancy in Africa are now so great as to suggest that the epidemic is now entering a stage where loss of life is already adversely affecting “social and economic interactions”. They conclude this on the basis of an augmented Solow model in which growth in income per head is partially determined by health capital – the latter in turn is of course determined by the epidemic. They note that growth models typically aggregate and homogenise “labour” – and this is exactly the problem. Different types of labour have different susceptibility to infection and illness and death will impact upon different types of vulnerability depending on sector. In particular, these models leave out the important “socially reproductive” sectors that fall outside of the neo-classical definition of what is to be considered as “economic” activity. This means that their view that “the countries of the Southern and Eastern Africa sample, where HIV and malaria are health problems on a scale that even the Rest of Africa countries regards as catastrophic, the economies appear unable to maintain ‘normal’ economic relationships.” (Dixon, McDonald and Roberts, 2001b, 423), may seem too optimistic!

Arndt and Lewis’s paper (Arndt and Lewis, 2001, 427-449) is closely related to the one already discussed. Here they move from the gross macroeconomic effects of the epidemic to consideration of its implications for sectors and for unemployment in South Africa. They conclude that:

- Labour demand will be depressed by decline in the overall growth rate
- There will be reduction in investment which will particularly depress demand for skilled and semi-skilled labour
- AIDS related illness will further reduce output by skilled and semi-skilled workers.

Overall, the authors conclude that given the poor job creation record of the South African economy over the past thirty years, the effects of HIV/AIDS on growth will be profound – and, as the editors of the volume note, this conclusion is derived from growth models which more typically report smaller effects on growth (Dixon, McDonald and Roberts, 2001a, 385).

Haddad and Gillespie (2001, 487-511) review the literature on the impact of HIV/AIDS on agriculture, food security, nutrition and the environment. They note that little information is available and that there is too much in the way of recycled anecdote. They make important observations about nutrition which link to some of those made by Stillwaggon (2000) and this is an important area for further research both in terms of the contribution of poor nutrition to susceptibility and as an outcome and symptom of vulnerability. They also emphasise that responses to impact in the food security and agriculture area will be context specific: thus generalisations may be attractive but misleading.

Garnett, Grassley and Gregson (2001) review the ways in which HIV/AIDS contributes to a “development disaster”. They look at its effects on population

in particular and argue that “An increased political commitment and allocation of resources to HIV prevention programmes is a priority. However, strategies to cope with the impact of AIDS in other sectors are also important if the development impact of AIDS is to be mitigated.” (Garnett, Grassley and Gregson, 2001, 405). And that is also a suitable conclusion for this review – some progress has been made in the last year but social scientists need now to face the demand for good, useful and theoretically eclectic and synthesising research on the impact of HIV/AID. Furthermore, they need to be looking to the future of the epidemic – beyond Africa.

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