HIV/AIDS AND ECONOMIC POLICY: THE CASES OF ZAMBIA AND BOTSWANA

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Abstract

The HIV/AIDS pandemic represents perhaps the most significant threat to development globally. Despite having featured as a dominant concern on the international agenda, the epidemic has continued its spread for over a quarter of a century. In sub-Saharan Africa the effects of this have been unprecedented, culminating in an effective paralysis of the developmental process. If social, political or economic conditions are to be improved, an innovation of policy responses is fundamental. The aim of this work is to expose the interrelation of economic factors which HIV/AIDS, demonstrating the extent to which underlying economic conditions are implicated in shaping both susceptibility to infection and vulnerability to impact. Analysed with reference to the neoliberal global political economy, both the degree to which these conditions are under-represented in policy discourses and the cause of this under-representation will be explored. It will be demonstrated that there exists a fundamental misalignment between the exigencies of the epidemic and the policy approaches adopted in response. The cases of Botswana and Zambia in the last analysis will be used to demonstrate both the existence and extent of this misalignment in an empirical setting.
Abbreviations

AIDS       Acquired Immunodeficiency Syndrome
ART         Antiretroviral Therapy
ARV         Antiretrovirals
DFID        Department for International Development
DTP3       Third Dose Diphtheria Toxoid, Tetanus Toxoid and Pertussis
FDI           Foreign Direct Investment
GDP         Gross Domestic Product
HepB3    (Human hepatoma cell line) Whole Cell Lysate
HDI          Human Development Index
HIV          Human Immunodeficiency Virus
LDC          Least Developed Country
MNC        Multi – National Corporation
MTCT        Mother to Child Transmission
PEPFAR    President’s Emergency Plan for AIDS Relief
GFATM    Global Fund to Fight AIDS, Tuberculosis and Malaria
R & D     Research and Development
STI        Sexually Transmitted Infection
SSA        Sub-Saharan Africa
TB          Tuberculosis
TRIPS    Trade-Related Aspects of Intellectual Property Rights
WTO         World Trade Organisation
Introduction

The HIV/AIDS pandemic represents perhaps the most critical obstruction to development globally. Estimates averagely locate the number of infected at 33 million, with high approximations approaching 36 million (UNAIDS, 2008). In the developing world these figures’ impact is not only on conditions of morbidity and mortality but are pan-developmental, undermining attempts to improve a spectrum of social, economic and political indicators. Although its effects compass an international arena, in actuality references to a ‘global pandemic’ describe a totality of multiple and distinct sub-epidemics. Approaching the crisis in its aggregated form obscures fundamental divergences between these regional manifestations. Patterns and rates of transmission vary, as subsequently does prevalence and the characteristics of those infected, affecting viral progression and cumulative impact: biological, social and economic. Consequently, the focus of this work will limit itself to the crisis as it is manifested in sub-Saharan Africa. Of the total number infected, 22 million are located here (UNAIDS, 2008) and although responses to the epidemic have been dominant of the international development agenda, until 2005 the absolute number of infected was in constant growth (UNAIDS, 2008). Although the factors formative of its shape and impact are admittedly both diverse and interrelated, the developmental paralysis that is forming product of the crisis remains poignantly indicative of a failed policy response. If its effects are to be constrained or reversed, there is a manifest need to identify the cause of misalignment between crisis and reaction. In context of an innately complex phenomenon, it is probable that this cause has multiple locations; however, in this case, it is the economic framing of the epidemic that is to be subjected to analysis.

The interplay of economic factors with the contagion’s specific expression in the region must be recognised as paramount. Although attempting to delineate a simple or direct causal relationship between economic policy and the epidemic’s particular manifestation would misdirect the analysis here, it is argued that some facets of the global economic structure, its underlying neoliberal assumptions and its realisation in international policies
may be understood as counter-acting with attempts to stem the crisis. To develop this thesis, proximal through to distal determinants of both the transmission and progression of HIV/AIDS and its effects at national, local and household levels will be identified, in order to expound the involvement of economic factors. In this context, specific international policy approaches may be analysed to expose areas of ‘economic misalignment’. Three key points of reference will be used for this analysis: the way in which the crisis has been characterised within policy debates and how this has impacted on policy responses; the extent to which economic conditions have been recognised as functional in shaping the crisis; and the receptiveness of policy approaches to the economic impacts of HIV/AIDS. The cases of Botswana and Zambia will then be applied both to test the thesis within a specific, empirical setting and as illustration of the broader developmental implications of a failure to ‘realign’ policy responses.

**Proximal-Distal Determinants of the HIV/AIDS Epidemic**

As indicated, locating the cause of international policy misalignments within an economic framing demands an explication of the interaction of economic factors with the progression and impact of the epidemic. To satisfy this demand it is necessary then to identify the principal determinants of transmission and effect. The most proximal determinants of HIV transmission rates are biological; principally nutritional levels and the involvement of other infections (Bentwich et al., 1995; Cunningham-Rundles, 1998; Stillwaggon, 2002). Both macro- and micro-nutrient deficiencies are functional in increasing susceptibility to infection. Inadequate generic nutritional levels and specifically vitamin A deficiency compromises epithelial and mucosal integrity, undermining physical barrier to the entry of pathogens, including HIV (Semba, 1998). The quality of immunity post-entry then depends on both adaptive and non-adaptive responses, both of which are variably affected by malnutrition (Stillwaggon, 2002). Adaptive humoral and cell-mediated immunities and non-specific immune responses are respectively contingent on B-, T- and NK- cell production, which may be inhibited where protein zinc, iron or vitamin A uptake is inefficient (Chandra, 1997; Cunningham Rundles, 1998; Scrimshaw and SanGiovanni, 1997).
The existence of infection has a comparable impact on the quality of immuno-responses. Resisting invasive parasitic disease, such as schistosomiasis or malaria, critically weakens the host’s immunity in an immediate sense. However, Bentwich et al. (1995) note that a high prevalence of such diseases involving recurrent infection, in repetitively provoking immuno-responses may produce chronic immune system exhaustion. In isolation, exposure to such diseases will both increase host susceptibility to the transmission of HIV and, post-entry, enable viral progression. In practice, however, the impact of infection acts in synthesis with nutritional deficiencies. Parasitic disease generically and, in particular, the involvement of intestinal parasites consumes vitamins and limits nutritional uptake. In turn, decreasing nutritional levels within the host may invite further opportunist infection, engaging a destructive cycle (Stillwaggon, 2002). Finally, sexually transmitted diseases (STDs) are also identified as an important biological co-factor in the transmission of HIV. Whilst attempts to quantify the extent to which effective transmittance is increased vary extensively (Guisselquist et al., 2002), the significance of a high prevalence of STDs amongst seropositive persons is consistently manifest. Ulcerative and inflammatory STDs such as chancroid, syphilis, chlamydia and gonorrhea, in fracturing physical barriers to the entry of pathogens act as enablers to infection (Korenkamp et al., 2000). They equally function, however, to enable transmittance in the reverse. That is, the co-existence of HIV with another STD increases the potentiality for its transference to a seronegative partner. The significance of STDs as determinants of transmission, is, however, intimately related to behavioural context.

Behavioural factors are consistently framed as the predominating determinants of HIV transmission. In sub-Saharan Africa the majority of infections occur as product of heterosexual relations (UNAIDS, 2008), in context of which sexual practice is logically positioned as catalyst of the spread of HIV/AIDS (DFID, 2001: 6). At its basest level, two interrelated indicators inform the categorisation of a high risk sexual profile: multiple sexual partners and unprotected sex. The link between these and increased vulnerability to transmission is evident and does not demand explanation. Confining categorisation to these two markers is patently overreductionist; multiple behavioural manifestations are
affective of risk profiling (Maman et al., 2000; Campbell, 2003; Gysels et al., 2002). However, it is the inevitable consequence of exacting behavioural determinants from the social, economic and cultural environment in which they are both conceived and negotiated. This point is not trivial and is introduced here to presage the critical significance it will assume in specific international policy contexts (Jones, 2004). However, as in abstraction attempts at a more coherent conceptualisation are sterile, for the purposes of this section it is sufficient to locate the generic role of sexual practice in determining susceptibility to infection.

The most distal determinant of HIV/AIDS is the socio-economic setting in which it develops, both at a macro- and micro-environmental level. The principal focus of determination, as indicated, has been on the more proximal factors. However, regional manifestations of the epidemic are not plausibly explained purely in terms of behavioural or biomedical variables (Gisselquist et al., 2002). They must be recognised as reflective of their broader context. Whiteside (2002: 318) identifies five formative variables within a person’s micro-environment: the level of mobility, degree of urbanisation, access to healthcare, prevalence of violence and gendered rights and status. At the macro-level he underlines conditions of poverty, income distribution, culture, religion and governance (2002: 318). As these factors are interrelating and may imply diverse effects, realising a linear correlation between them and the increased spread of HIV/AIDS is problematic. However, that the relationship between context and impact may be less explicit does not render it less tangible. As suggested, it is in practice within this context that the cause and effect of some more proximal determinants are anyway constructed. Identifying the social, economic and cultural parameters of the crisis is a fundamental prerequisite of an effective policy response (Baylies, 2000; Cheru 2002; Jones, 2004). The focus of this study, as stated, is specifically the economic context (although inclusive of some socio-cultural factors where the two interact). To pre-empt this analysis, it is useful to introduce an analytical distinction between conditions of susceptibility and vulnerability. Both are described by Barnett & Whiteside (1999) as factors constructing a risk environment. However, susceptibility concerns features of the environment, operative at every level from behavioural and infrastructural to socio-economic, that enable viral transmission
In contrast, vulnerability refers to the characteristics of a social or economic unit (person or group) that will increase the impact of infection (2000: 207-8). The susceptibility-vulnerability framing is introduced here as the distinction is fundamental in locating the significance of economic context in both causation and effect and in relating policy responses to the prevention-treatment continuum.

**Involvement of Economic Factors in Susceptibility and Vulnerability**

The interaction of economic factors with biological determinants is relatively direct. Level of economic growth broadly dictates the resources available for consumption. Where calorie intake, and consequently nutritional level, is restricted, low per capita consumption is often implicated. This is manifest in the case of sub-Saharan African LDCs, where 31% of the population is defined as malnourished, and private per capita consumption is limited at 0.78 (UNCTAD, 2008: 47). Within affected persons it is improbable that nutritional uptake is sufficient for the development of effective immuno-responses. As HIV/AIDS reconstitutes patterns of consumption, both diverting and absorbing resources, it is probable that conditions of malnutrition will persist in high prevalence areas, increasing biological susceptibility. The impact of this has been evidenced at an empirical level, where comparative studies have identified faster viral progressions and an increased level of vertical transmission in the instances of non-intervention in poorer economic contexts (Stillwaggon, 2002). Parasitic infection also remains disproportionately high. Malaria is endemic in the region; of 247 million infections globally 86% were located here (WHO, 2008: 9). SSA holds 80% of the global cases of schistosomiasis and reports an annual incidence rate of 300,000 – 500,000 in trypanosomiasis (Stillwaggon, 2002: 7-8). The involvement of economic factors here is bifold. In creating conditions for the spread of parasitic infection, the low levels of sanitation and limited access to clean water characteristic of poor economic settings are both formative (UNCTAD, 2008; WHO, 2008). Equally, low economic growth and the concomitant restrictions on revenue and infrastructural development are functional in inhibiting both treatment and prevention and so extending the impact imposed on hosts’ immunities (Haacker, 2004b). Poor service delivery mechanisms also compound the role
of STDs as enablers to the transmission of HIV. Although treatment is relatively accessible in the developing world, it is estimated that a significant proportion of cases remain undiagnosed (Korenkamp et al., 2000). As the HIV/AIDS crisis progresses it is probable that the health sector’s performance will decline relative to demand (Over, 2004). As limited resources confer a comparative inelasticity of supply, HIV/AIDS related treatment may crowd out other disease (2004: 319-20), possibly realising increased susceptibility at the generic biological level.

The interaction of economic and behavioural factors is generally less explicit. Poor economic condition may represent the stimulus for persons entering certain high risk labour sectors, in particular sex and migrant workers, but in isolation they fail to explicate plausibly the high occurrence of risk behaviour within these sectors. Explanation here demands some exploration of sexual identities. Patterns in sexual behaviour are intimately related both to gendered constructions of identity and broader gender inequalities. Sexuality is not an independent phenomenon. It is developed within a particular social context and in its negotiation is in constant interaction with cultural norms and beliefs; whilst personal perceptions alter these mediations, they are also product of them (MacPhail, 2001). In this way, broader gender inequalities, which are linked insolubly to economic inequity, may be translated into sexual power imbalances (Jewkes et al., 2003). Although cultural variations within SSA are extensive, some generalisations may be derived. Masculine sexuality is normatively rooted in conceptions of dominance, implicitly positioning feminine sexual practice in a submissive function. In relation to HIV, women are also constructed as carriers (Simbayi et al., 2000). Although in SSA female prevalence is higher (UNAIDS, 2008), in practice this may predominantly be product of more effective male-female transmission rates (Gisselquist et al., 2002). This is not reflected in social perception, which in positing women as carriers both confers responsibility to them, and implicitly absolves men (MacPhail, 2001). The categorisation of a person’s sexual health in general is responsive to social perception. This results in a confusion between physical and social markers, whereby definition of a person as ‘unclean’ is in actuality based on social interaction, but assumes a physical connotation (Jewkes et al., 2003; MacPhail, 2001). Although the role of perception may
not directly relate to economic context, it is important to emphasise. It implies that sexual practice may not be rational. Consequently, where construction of vulnerability fails to accurately represent the underlying conditions of risk, increasing knowledge of these conditions may not translate into behavioural change. This has been evidenced where relatively high levels of awareness coexist with high risk behaviour, for example in some migrant populations (Campbell, 2003) and will assume particular resonance in relation to specific international policy contexts.

In terms of the normative dominant – submissive structure of sexuality, economic factors represent a critical function. Although diverse socio-cultural influences must be recognised as formative here, to some extent gendered sexual identities may be conceptualised as an extension, or alternative manifestation, of broader economic inequities. Wojcicki & Malala (2001), for example, note that economic dependency is imitated in sexual relationships. Where sex may be understood as a resource, economic vulnerability weakens its terms of trade. This is evident in the case of sex workers, where terms of transaction demonstrate significant variation, responding appreciably to the economic condition of the worker. Where subsistence depends on a transaction, negotiation is not economically viable and this extends to the use of condoms. In practice, however, the correlation between economic need and sexual behaviour is not linear. Gysels (2002) observes that in the case of sex workers capable economically of negotiating terms of transactions, condoms are used consistently with ‘casual’ clients but infrequently with ‘regular’ ones. This may be explained by perceptions of trust, but it is also a product of the more complex economic interaction with the latter. ‘Regular’ relations are not generally transacted on the basis of isolated payments but involve a broader frame of financial support, including for example rent or allowances. Although the sex worker does not depend on this in a literal sense, it anyway creates the relation under the pattern of a dependency. This extends to broader gender relations. Sex between partners is not explicitly transactional; however, some have argued that gendered economic imbalances have led to a generic commercialisation of sex, where sex and economic dependence are inextricably interlinked and the ability of women to negotiate risk reduction practices is constrained (Tawil et al., 2005)
Counterpose this to the connotations that have been attached socially to HIV/AIDS and the use condoms. In terms of HIV/AIDS, social perception often serves to externalise vulnerability in attaching infection to ‘abnormal’ sexual behaviour (MacPhail, 2001). Equally, although identifying high risk population sectors may be effective in the targeting of resource, socially it can exacerbate processes of disarticulation and exclusion, under a generically negative framing of HIV and seropositive persons. It may also serve to externalise the threat from other sectors (Gysels, 2002). Paradoxically, condoms also often demonstrate a negative health association, with a perception that use is indicative of infection in the user. They are also interlinked with promiscuity and by extension infidelity. (MacPhail, 2001, Jewkes et al., 2003). Where the element of poor economic conditions and concomitant weak positions of negotiation interact with the negative functions of social perception, the opportunity for the promotion of risk reduction practice can be realised as manifestly restricted (Tawil et al., 1995). Passive roles imposed on women in sexual interactions and normative expectations of masculine dominance continue to dictate high risk behaviours (UNAIDS, 2008; 67) As indicated this analysis does not apply universally. However, for the purposes of this section describing the role economic inequality can play in delimiting the potentiality for behavioural change is sufficient to introducing the limitations of biomedical or behavioural policy approaches.

Whilst biological and behavioural factors are functional in shaping increased susceptibility to infection, the broader economic context generally interrelates with conditions of vulnerability. To a significant extent, impacts are internalised at the household level. With progressively high mortality rates labour deficits are an inevitable product of the epidemic, realising a direct loss in income; as the HIV/AIDS demographic is predominantly adult (15-49) the loss here is particularly inflated (Epstein, 2004). High morbidity also dictates declining labour productivity correlative to viral progression, initiating premature income decline. The incidence of income recovery is also low, contrasted to non-terminal epidemics where loss in productivity may be transitory (Whiteside, 2002). Equally, income decline is not only directly manifest by the lower
productivity of infected persons; demands of care also increasingly divert the remaining labour stock to non-productive roles (FAO, 2004; Gulegma, 2000). It is typical that this diversion involves withdrawals from education, which may translate into a permanently lowered economic condition, as educational attainment broadly parallels economic status. This is compounded by high adult mortality, as adults perform an important function in the inter-generational transfer of knowledge (Desmond & Gow, 2002).

Income loss has a pervasive impact at the household level. As disposable income declines, expenditure is constrained. This implies restrictions on productive investments, which both compacts the immediate decline in income and undermines the economic base for income reconstruction (Baylies, 2002; Whiteside, 2002). In the rural context loss of productive investment is particularly destructive. Where sufficient agricultural inputs are not available, physical capital, such as land, may demonstrate substantial deteriorations. This can animate a cycle in which declines in physical capital, independent of labour losses, realise decreasing yields, undermining the rate of return to investment and imposing progressive limitations on the future purchase of inputs (FAO, 2004). Savings are also undercut in decreased income, which has similar implications for reconstruction but also erodes the resource base capable of absorbing future shocks (Whiteside, 2002). As with labour, income is not only reduced but equally diverted, particularly to medical and funeral expenditures. This imposes an altered pattern of consumption; where other health expenditure or nutritional intake is constricted, biological susceptibilities may be amplified (Stillwaggon, 2002). Some analyses actually posit an increase in final household consumption, in context of declining income, however, this has a paradoxically negative connotation. That is, that other assets are being utilised to subsidise expenditure, implying asset reduction. Sale of assets is a commonly applied coping mechanism and limited to non-productive assets is relatively effectual. However, in extension to the sale of productive assets it represents a drain on those instruments which are fundamental to the recreation of economic production (Baylies, 2002; Poku & Whiteside, 2004). Consequently it both compounds income loss and undermines the capacity of households to reconstruct economically. In general, to the
extent that income and productive resources are undercut by the epidemic, it engages households in a cyclical pattern of decline.

The degree to which this cycle is realised, however, is dependent on the initial characteristics of the household. Size, demographic composition, asset base and the intra-household position of the infected persons all serve to shape effect. The loss of the most productive members evidently manifests the most destructive impact. However, loss here is also most typical as HIV/AIDS loosely replicates labour demographics (Epstein, 2004). As the dominant mode of transmission in SSA is heterosexual, the probability of infections clustering is also high, with the result that level of impact is both reproduced and extended (Stillwaggon, 2002; Whiteside, 2002). Equally, under high rates of adult mortality the structure of the household is vulnerable to change, demonstrating higher dependency ratios. Although vertical transmissions and lower life expectancy to some extent mitigate this, under conditions of strained resource even marginal shifts realise substantive impacts. This is exacerbated where household dissolution, consequent of the epidemic, leads to an inter-household transfer of dependents (Greener, 2004). It is observed that female-headed households experience sharper rates of decline and are more susceptible to dissolution. This is intimately related to gendered economic disparities. Gender divisions consistently exclude women from productive enterprise, often restricting them to subsistence labour. Access to markets and generic productive resources, employment opportunities and involvement in production linkages are consequently restricted. This both limits income and in the case of productive decline constricts the capacity for economic reconstruction (Mutangadura, 2000). Legal framings are also determinant here, as weak or non-existent female property rights enable trends in asset seizure (Poku & Whiteside, 2004). The income characteristics of a household are also significant. Wage income may involve private benefits or pensions that mediate against the loss or decline of labour, although generally these do not extend to casual or fixed-term labourers. Equally, if income is tied to productivity substantial losses may still be manifest. In the context of SSA, where the majority are unemployed or are located in the informal sector, the extent to which benefits may externalise household losses may be limited (Haacker, 2004a). In general, the most vulnerable households are the poorest,
where the asset base is least able to absorb the epidemic’s shock, and the resources for economic recovery do not exist.

Impact also depends on broader economic variables, for example, the involvement of social networks. Both formal and informal local networks typically function as a critical source of labour, credit and other capital, as households engage in both economic and social exchange. Where resources are limited or social cohesion is weak, these networks are less able to moderate the effects of the epidemic (Drinkwater, 2005). As they are based on reciprocity, as HIV/AIDS undermines resources at the household level, eventually this will serve to undermine the resource base of the network generically. Equally, the ability of public service mechanisms to externalise costs will decrease as aggregate declines in economic growth rates reduce government revenue for investment (Haacker, 2004b). In context of the stigmatisation of seropositive persons it is probable that these networks are less receptive to the demands of the epidemic, comparative to other economic shocks. In context of all these factors, it is manifest that the interrelation of HIV/AIDS and economic factors at the household level is fundamentally dialectical. Poverty drastically extends the economic impact of the epidemic, whilst the impact itself drastically extends conditions of poverty.

Although the epidemic’s internalisation within households has predominantly realised its effects at the microeconomic level, the aggregate effect of these has impacted significantly on macroeconomic variables. As stated, HIV/AIDS affects high levels of adult mortality; cumulatively this involves a declining labour growth rate (Epstein, 2004). Some models argue that this decline may generate increases in per capita income, by raising the capital-labour ratio. However, such analyses rely on the exclusion of factors other than growth rate, such as labour and total factor productivity, which in practice manifest a direct impact on capital accumulation and investment (Haacker, 2002). The relation of HIV/AIDS with labour productivity is bifold. In replication of its effects at the microeconomic level, associated increases in morbidity tend to a deterioration in the productivity of infected persons (Fox, 2004). Compounding this, increased mortality implies high labour turnovers which are disruptive of productive processes. In particular,
new labourers may demonstrate comparably low levels of productivity in the initial, transitional period (Connelly & Rosen, 2004). Both raise unit cost of production, with the rise more pronounced in industries expending fixed-rate salaries (Haacker, 2004a: 51). High labour turnover also, however, confers increased cost due to outlays in replacement and training. Haacker (2004a: 57) approximates that for an industry with a constant labour force of 100, an increase in mortality from 0.25% - 1% would incur a 6.6% raise in turnover related expenditure. With crude adult death rates (as measured by deaths per 1000 adults) progressing by factors as high 37.2, the implicit increase in unit cost of production is substantial (Epstein, 2004: 39).

Implicitly, this introduces the issue of human capital, which serves as an important determinant of productive efficiency and of economic development generically (Haacker, 2004a). Increased mortality has a direct impact in exhausting human capital. This represents both an immediate depletion of the human capital stock and an erosion of the base of potential capital formation, to the extent that mortality affects persons assuming industry-specific or broader educative roles. In lowering life expectancy, it also undercuts the projected rate of return to investment in human capital, which acts as a tacit disincentive to human capital accumulation (2004a: 76). Including the declines in education concomitant of household coping mechanisms, this can produce a comparatively unproductive labour sector with significant inter-generational implications (FAO, 2004). Birdsall & Harmoudi (2004: 158) for example, refer to a threshold value of human capital, below which manifest increases in economic output, and consequently broader economic development, cannot be realised. In practice, the economic impact is cyclical. As higher morbidity and mortality rates embed deep insecurities within the investment climate, foreign and domestic investors reallocate internationally, extending loss in both human and physical capital and reanimating trends in declining productivity and productive inefficiency (Haacker, 2004a). In this sense analyses that posit an increasing capital-labour ratio, in excluding variables in investment behaviour, often understate the macroeconomic impacts of the crisis.
It is also important to note that some of the monetary strains evidenced at the household level are replicated at the industrial level. This in particular refers to medical-related expenditures. The formal sector often develops systems of benefits or pension schemes for its permanent labour base. In context of high mortality, and morbidity and related absenteeism, the strain on these resources consequent of HIV/AIDS is substantial. Although it serves to mediate the impact of the crisis at the microeconomic level, this involves higher unit costs of production and consequently lower rates of return to capital, implying significantly reduced productive efficiency at the macroeconomic level (Haacker, 2004a: 53-6). This may serve to disincentivise investment in the domestic economy. It may also, however, alter the composition of the labour sector, as casual or fixed-term labourers become more attractive (Epstein, 2004). Alternatively, wage differentials may be adjusted to absorb the cost of HIV/AIDS related outlays, undercutting per capita income. Both negatively react back on the micro-economic climate (Whiteside, 2002). Although productivity losses and associated costs may be in part offset by intra-industry HIV/AIDS treatment and prevention schemes, these are only practicable if the initial capital and infrastructure exists, which is uncommon in the developing world (Haacker, 2004a: 56).

The product of these cumulative impacts is evident in certain macroeconomic variables. It is estimated that in SSA states experiencing 20%+ prevalence rates, reductions in labour efficiency and total factor productivity account for a 1 - 1.5 percentage point decline in net GDP (Haacker, 2004a: 71) In both the diversion and absorption of resources, HIV/AIDS has also impacted negatively on domestic savings. For example, using an open economy model, Haacker (2004a: 72) approximates that a 10% prevalence would result in a 0.3 percentage point drop in aggregate savings rates. In terms of macroeconomic stability, the epidemic, in undermining economic outlooks and so deterring investment, has affected generic reductions in capital accounts, in many states compounding existing balance of payments deficits (2004a: 78). Lack of investment and slowed GDP growth also function to reduce the domestic tax bases, undercutting government revenue. In context of increased strains on public infrastructure and service delivery mechanisms this may equally foster conditions of macroeconomic instability in
exacerbating budget deficits (Haacker, 2004b: 241). To the extent that the increased cost of unit production and lower productivity are transferred to the labour force, levels of personal income tax inevitably decrease. To the extent that these costs are internalised by the industry, corporate income tax revenue realises a comparable decline (2004b: 240-1). The epidemic demands a dramatic extension in the import of medical resources, which may crowd out other imports, as the former involve reduced or neutral tariff rates this implies an additional drain on revenue through loss of import duty (2004b: 241). In a broader sense, deteriorations in economic activity consequent of HIV/AIDS confer aggregate reductions in the revenue derivative of generic trade taxations (2004b: 240-2).

Reductions in government resources must be contextualised within increased public service demands. Most relevant to this discussion is the impact of the macroeconomic environment on the health sector. AIDS impacts on the health sector in increasing demand and decreasing supply (measured in constant quantity and quality). In absolute terms, the epidemic creates a new and extensive pool of infected persons, however, as AIDS related deaths involve increased levels of care, comparative to other disease, the demand on the health sector is disproportionate to the number of infected (Over, 2004). In addition to this demand, HIV/AIDS increases generic vulnerabilities in medical procedures; consequently the cost of maintaining basic levels of safety is substantially extended. In Uganda for example, blood transfusions have realised an additional $1.2 million per annum in outlays related to HIV/AIDS (2004: 315). In terms of human capital, high AIDS morality rates also imply significant losses; it is estimated that a 5% prevalence rate will impose a 0.5- 1% annual reduction in existing medical personnel (2004: 316). Occupational risk may also demand some incentivising financial compensation, if the human capital supply to the sector is to be maintained. Recognising these factors, and including assumptions of a shift in supply and demand consequent of the crisis, Over (2004: 318) approximates that a 50% subsidy of HIV/AIDS related treatments demands a 47% increase in annual health expenditure in SSA. Although limited statistics convolute attempts to assess quantitative changes in healthcare delivery, it is manifest that with substantial restrictions on government revenue and characteristically weak infrastructure, these demands have not been met (2004: 313-9).
Although external finance may to some extent have mitigated consequent declines in service delivery, this issue is discussed in a later context.

The interrelation of HIV/AIDS and poverty has been established at the microeconomic level. However, a reintroduction of the issue here provides a useful illustration of its effects in aggregate. Adopting life expectancy as an indicator of welfare Crafts & Haacker (2004) project, consistently negative trends across affected countries, with national welfare decline as high as 89.5% in Botswana and 75.5% in South Africa by 2010 (2004: 193). Consequent of high adult mortality, patterns of dependency observed within households are also replicated at the national level. Although correlative increases in child mortality and declining life expectancy limit the impact on dependency ratios, noted increases remain. For example, in Botswana, Zambia and Uganda, total dependency ratios (as measured by the number of dependents per 100 adults) were predicted to reach 62.0, 104.2 and 87.7 respectively in 2010, as opposed to 54.6, 101.2 and 83.1 in absence of AIDS scenarios (Epstein, 2004: 33). If this is reframed in terms of income dependency ratios, the welfare implications become increasingly apparent. In Botswana, the average increase in ratio is approximated at 1.0 (5.4 – 6.4), denoting that each income will effectively assume a new dependent. In the lowest income quartile, however, the extension in ratio is 16 – 24 implying 8 new dependents (Greener, 2004: 176-7). The effects of these trends, both in embedding conditions of poverty and in exacerbating existing inequities are encapsulated in extreme disparities between absence of AIDS-projected and actualised HDIs within the region, 0.77 – 0.57 in the case of Botswana (Haacker, 2004a: 88). The aggregate impacts of HIV/AIDS are manifestly critical. However, it should also be emphasised that operations at the micro- and macro-economic level are in practice dialectical, with changes in economic climate shaping behaviour and the cumulative effects of this behaviour reacting back on the broader environment. The cycle that this implies may in fact be more damaging than either factor assessed in isolation.
The International Economic Context

That economic factors are critically interlinked with the spread and impact of HIV/AIDS is evident. However, analysing the extent to which this interaction is manifest within international policy discourses requires that the construction of these discourses be contextualised. It is not the intent here to develop a coherent evaluation of the global economic system, but the broader eco-political setting must be recognised in its interrelation both with conditions contributing to the crisis and subsequent policy responses. The economic position that has dominated globalising trends is dependent on certain neoliberal assumptions, critically, positioning the market as the mechanism of optimal allocative efficiency; the systemic derivative of which is free market trade. Constructed in this way, interventionism is posited as fundamentally distortive of market operations (Chang & Grabel, 2004). The basic premise of this argument lies in the theory of comparative advantage. The theory suggests that unrestricted trade and the associated competitive exposure will direct countries to specialise in industries in which they hold the comparative advantage. Those possessing the labour factor advantage would, for example, engage in labour-intensive industries as the unit cost of production would be substantively lower, comparative to countries experiencing labour deficits. In contrast, protected terms of trade permit the development of industries incongruous with comparative factor advantages, implying sub-optimal productivity levels and elevating the prices of goods traded internationally (Saad-Filho & Johnston, 2005). The basic intent of a free market system is evident: a symbiotic relation where maximum productivity stimulates export growth and optimal efficiency reduces import costs (Cypher and Dietz, 2004).

Although the extent to which this theoretical model has been realised in the global market is subject to debate (Perraton, 2001), its significance here lies in the policy directions that are product of its underlying assumptions. Free market trade inexorably demands trade liberalisations; central to this is the issue of taxation. Taxes within the neoliberal model occur as distortions creating market barriers, the resultant policy prescription is tax reduction and exemptions (Chang & Grabel, 2004). Generically, taxation represents a
significant component of government resources; although in SSA this component may be lesser, the implied reduction in revenue remains notable. It should also be emphasised that these reductions often serve to exacerbate existing budget deficits and occur concomitantly with reductions in personal and corporate income tax subsequent of HIV/AIDS related declines in productivity and output (Haacker, 2004b: 241). Where neoliberalism advances expenditure cuts as a panacea for macroeconomic instability and HIV/AIDS absorbs increasing public resources the implications of this for health infrastructures and service delivery mechanisms are evident (Addison et al., 2000). In a broader context the delinking of economic reform from social policy has been noted (Mittelman, 2008: 1646); however, in relation to the impact of HIV/AIDS it assumes a particular cogency. This is especially significant when the extent of the loss is not replicated in the gain.

As stated, the neoliberal model promotes export-led growth. However, it is arguable that this type of growth has failed to cultivate the conditions for either equitable development or poverty reduction. The SSA least developed countries (LDCs) are an evident case in point. Growth rate of real GDP reached 8.9% in 2007, averaging 6.6% in 2000-2007 (UNCTAD, 2008: 2). In contrast to an average rate of 3.4% in 1990-2000 and comparative to a growth target fixed at 7%, in economic measures this signifies a significant progression (2008: 2). In terms of poverty, however, this progression is not duplicated. As defined by persons existing on less than $1 per day, poverty decreased only marginally proportional to population 2000-2005. In absolute terms the figure rose from 192 to 205.6 million (2008: 54). In reference to the insoluble interrelation of poverty and HIV/AIDS the import of this does not demand explication. Although describing a direct causal link between pattern of growth and incidence of poverty, particularly in context of the epidemic, would be overreductionist, some interaction between the two is evident. In developing countries, typically demonstrating primary commodity dependence, export-led growth normatively fosters development within concentrated enclaves, such as extraction or processing zones, which express weak links with the domestic economy generically (2008: V). Although measures of income distribution are variable, it appears that in the majority of LDCs this has aggravated
conditions of inequality (2008: VI). The inability of SSA to convert isolated pockets of
growth into expansive economic development may be the composite of several dynamics,
for example, specific labour factor endowments (Soderbaum & Teal, 2000), the existing
structure of industry (Buck et al., 2000) or the potentiality for structural diversification
(UNCTAD, 2008: IV); all of which interrelate with the economic effects of the crisis.

Identifying which dynamic may be most affective is not relevant here. Neoliberal
assumptions, in conceptualising a self-regulatory market, have implicitly posited the
private sector as the stimulus for development of the productive base. In practice the
private sector has not been particularly formative in the expansion of any dynamic
serving domestic markets (UNCTAD, 2008: II). FDI, which may be functional in
facilitating sectoral development and export upgrading, has remained concentrated in
developed countries (Morrisey & Filatotchev, 2000:3; Perraton, 2001: 675). MNCs,
which could have performed a comparable function through technological transfer, have
principally realised technological rents in their domestic economies. In both cases,
investment has explicitly responded to ‘donor’ interest, consequently even where outlay
has been directed to human capital or infrastructure, it has been non-transposable into
broader structural upgrading or diversification (Morrisey and Filatotchev, 2000).
Equally, it has been noted that strong production linkages with the international economy
have not materialised in the developing world. Kaplinsky (2000) notes that position
within production chains is contingent on the relative distribution of economic power,
which in turn relates to asset or resource control. Rates of return to investment typically
increase with the chain, concentrating in design and marketing. Developing industries, in
contrast, remain concentrated in processing and production. In the absence of sufficient
investment in and development of productive capacities this was perhaps inevitable
(Morrisey & Filatotchev, 2000). It is arguable therefore that liberalisation has
prematurely exposed nascent industries, which may possess the comparative but not the
competitive advantage (Kaplinsky, 2000). In actuality, UNCTAD (2008: III) suggests
that approximately half of SSA LDCs have experienced a process of deindustrialisation,
as measured by the share of manufactures in GDP. Juxtapose this to the national context
described earlier, where the epidemic is both exhausting existing capital and
disincentivising new investment, the limitations of a ‘private-centric’ approach to realising inclusive growth are manifest.

The final aspect of the international context relevant to this piece is the vulnerabilities implicit in liberalisation. As markets open, they are increasingly subject to global economic fluctuations. As most of SSA is primary commodity dependent, growth performance is intimately linked to global commodity prices and the region may be particularly susceptible to variations. Liberalisation has also realised a significant increase in the level of imports, which in some countries has exacerbated trade imbalances. Subsumed within this is a disproportionate share in food imports. In 2005 – 2006 the food import bill reached $14.6 billion, an increase of $6.1 billion relative to 2000 – 2002 (UNCTAD, 2008: III). As a result, minor price fluctuations can imply significant aggregate costs, which may then be transferred to households at the micro-economic level. Financial liberalisation, with concomitant increases in capital transfers and the extension of external influences over exchange rates, implies a reduced governmental capacity to control monetary aggregates (Perraton, 2001: 679). Domestic markets are consequently subject of greater exposure to changes in global market sentiment, which is particularly significant relative to the impact of HIV/AIDS on investment behaviour. In general, it is common for conditions of instability to follow periods of liberalisation, the impact of this, however, in a region attempting to mediate the shock of an epidemic is particularly critical. Although it is not useful to draw a direct link between HIV/AIDS and the international economic system, the policy prescriptions consequent of the neoliberal conceptualisation of the market and private sector may be recognised as counteracting with attempts at the national level to mitigate the crisis. Establishing the centrality of the neoliberal agenda to the global political economy is also essential to contextualising policy discourses.
Policy Discourses

International policy approaches to HIV/AIDS in the 1990s were predominantly preventative and as a consequence of this, biomedical and behavioural. There is a persuasive logic to preventative policies: attempting to reduce the impacts of the epidemic is of limited value if high rates of transmission are continually reproducing them. However, the utility of such an approach is dependent on the decline in level of infection it can realise. The most common preventative policy measures enacted have related to syndromic management and behavioural change interventions. Syndromic management involves dispensing increased treatment for STIs, but basing this provision on algorithms, which use symptomatic indicators to direct treatment as opposed to clinical diagnoses. Behavioural change interventions in contrast use a variety of instruments, for example participatory workshops and educative media propagation, to reconstruct behavioural patterns with increased usage of condoms, fewer sexual interactions, later sexual debuts or a combination thereof (Sumartojo, 2000; Parkhurst & Lush, 2004). HIV/AIDS preventative policies have produced inconsistent and insubstantial results (UNAIDS, 2008). This to a significant extent is product of the varying political and infrastructural contexts into which they are introduced. For behavioural interventions to be effective it is critical that they are sensitive to diversities within a population and that they alter their approaches responsively. As previously indicated behaviour is negotiated within a broader social context, however, within this the degree to which behaviour is individuated or reflects general norms and attitudes varies significantly, demanding diverse treatments (Jewkes et al., 2003; MacPhail, 2001). The extent to which a government enables inclusive and participatory interventions is fundamental in forming effective behavioural approaches, as demonstrated in the Ugandan case. In syndromic approaches, a country’s infrastructural characteristics perform a similar function, as implementation is complex and demands a degree of efficiency in the health sector and associated service delivery mechanisms (Parkhurst & Lush, 2004). Although the political and infrastructural characteristics of SSA states demonstrate significant diversity, health infrastructures are often weak and under-resourced, political instability is comparatively pervasive and bureaucracy is generically
under-developed and inefficient. Equally, in relation to its social construction, HIV/AIDS remains for governments an uncomfortable arena in which to act (Jones, 2004). As intervention performances have been fixed to these politico-infrastructural capacities, their failures are in part explained.

Even assuming optimal performance, however, preventative approaches may have been insufficient to embed broader behavioural change. In the context described earlier, economic factors can be seen to represent a structural barrier to individual prevention behaviour. Economic barriers are not inevitable, in the inverse economic factors are equally capable of acting as structural facilitators (Tawil et al., 1995; Sumartojo, 2000). However, in the context of SSA the conditions for this have not materialised and to the extent that interventions continue to delink behaviour from structural context, it is probable that the economic environment will remain obstructive (MacPhail, 2001; Gysels, 2002; Whiteside, 2002). Admittedly, recontextualising behavioural interventions is a convoluted process. Attempting to measure empirically the involvement of economic factors is inherently problematic and in the absence of explicit quantification of the cause and effect of economic conditions relative to HIV/AIDS, it was perhaps inevitable that they remain marginalised in policy discourses (Baylies, 2000). Perhaps more significantly, the exhaustive effects of economic condition on HIV/AIDS do not easily translate into policy. Recognising that structure has been formative of the crisis and conceptualising approaches that both extend to the structural dimension and remain in the ambit of financially and logistically practicable responses is innately problematised (Sumartojo, 2000). However, this does not negate the need to address economic determinants. Equally important in explicating the failure of the ‘preventative paradigm’ is the neoliberal optic through which they were conceptualised. The impetus for prevention was intimately related to concerns with cost-effectiveness, and implicitly with limiting the demand on government expenditures (Hardon, 2005). Consequently, preventative measures were limited to development appropriate to the confines of existing infrastructures, as opposed to developing infrastructure to meet the demands of prevention. The implication of the exclusion of infrastructural progression on the efficacy of preventative measures was evident in their manifest failures to realise substantial
declines in transmission (Green, 2003; Hardon, 2005). Although the reference here is specifically to health infrastructure, as described earlier the inability of the public health serves to internalise the costs of the epidemic increasingly transfers the burden of adjustment to the household level, which only serves to reproduce and extend existing conditions of poverty. This also needs to be contextualised within the broader economic liberalisations that were occurring concomitantly and the resultant reduction in revenue and externally imposed delimiting of expenditure.

Interrelated with the promotion of a ‘cost-effective’ preventative approach is the issue of ARVs, which were initially rejected as an impracticable form of intervention, based both on cost and the perceived incapacity of recipient health sectors to effectively deliver them (Jones, 2004). Despite the manifest gains in reducing the epidemic’s impact that are implicit in the use of ART, until 2000 it was effectively excluded from the international agenda (Hardon, 2005). More significantly, Northern governments, in particular the US, acted to prevent the production of generic forms of patented ARVs that could have been distributed at a fractional cost (Jones, 2004). Although under the terms of the WTO’s TRIPs agreement production of these generic drugs was legitimate, the implicit threat of trade sanctions effectively precluded their use in most of the developing world (Thomas, 2002; Baylies, 2000). The nominal reason for the North’s reaction was that generics undermined the incentives for R&D, which in the long-term could impact on SSA in as much as lesser innovation produced less efficient drugs, both in response to HIV and to other infections endemic in the region. In practice it is improbable that this impact would have been realised, as R&D is principally responsive to stakeholder interests, which anyway perceive minimal value in investment in the global South (Jones, 2004; Westerhaus & Castro, 2008).

Preventative policies remain an integral component of the international HIV/AIDS approach. However, since 2000 a Declaration on TRIPS and Public Health has both been signed and extended to confirm the provision for countries to grant ‘compulsory licences’ to industries for the manufacture of drugs for domestic consumption and, where domestic pharmaceutical industries do not exist, to import generic forms of patented ARVs. The
The annual cost of ART has subsequently declined from $10,000 - $25,000 to approximately $150 (Over, 2004: 311) and policies are consistently underlining the need for increased delivery (DFID, 2008: 5; UNAIDS, 2008). The delay in this process, however, has significant implications for the analysis here. In part, it represents the neoliberal conceptions that continue to frame policy debates. However, as the role of ARVs, both in raising mortality and extending health, may represent a critical function in reducing economic loss (in particular losses associated to labour deficits and declining productivity), it would also imply that the economic impacts of the crisis were drastically underestimated. The preventative approach was generically based in a conceptual framing that posited the spread of HIV/AIDS as the product of individual risk behaviours (DFID, 2001). In constructing the crisis in this way it effectively excluded the imperative to assess broader economic condition, analysis of which could have realised the need for treatment at an earlier stage of the epidemic’s progression.

Recent approaches have reacted to the manifest need for a broader policy response. Policies are developed to (nominally) balance prevention, treatment and mitigation, incorporating measures to improve diagnosis, increase the provision of ARVs and provide necessary supportive social services; reinforce preventative strategies both behavioural and, particularly in context of MTCT, biomedical; and expand funding for infrastructure. These are also developed in relation to attempts to stimulate domestic political commitment and improve the quality and consistency of multi-lateral dialogues (IMF, 2007; DFID, 2008; UNAIDS, 2008; World Bank, 2008). The progression in approach that this represents should not be understated. It is estimated that in combination the GFATM, PEPFAR and other major significant bilateral funds have increased global financing of HIV/AIDS programmes by 2000% since 2001 (World Bank, 2008: 21). Although it is difficult to assess the exact extent to which commitment has translated to disbursement, the increase remains significant. Equally, the inclusion of measures to support infrastructure and increase access to ARVs implies a more sustainable approach to mitigating the impact of the crisis.
Despite this, it is the argument here that these approaches remain inadequately reflective of the role of economic climate in shaping the epidemic or responsive to its economic impacts. To illustrate this, an analysis of DFID’s policy responses will used. Although the HIV strategy is described as ‘integrated’, in practice this is principally referent to the integration of resources directed to HIV/AIDS in domestic health sectors with development of health infrastructures generically (DFID, 2008: 14). In actuality, whilst other analyses of the epidemic include considerations of the contribution of economic structures to susceptibility (UNAIDS, 2008), no explicit reference is made to these in isolation in DFID’s strategy. It is stated ‘that medical approaches towards preventing and treating the virus will never be fully effective unless the social and behavioural actions that drive the epidemic are addressed’ (2008: 25). However, when this is translated into policy, the prescription involves only a limited address to the socio-economic framing that underlies these ‘behavioural actions’. That is, in the allocation of resources to social protection programmes. Economic structures are to some, indirect extent included in the strategy, within the context of responding to broader gender inequalities in their relation to the epidemic. It states:

…socio-economic factors put women and girls at higher risk of the infection. In many developing countries, pervasive gender inequalities disadvantage women and girls—especially those living in poverty—in multiple ways. For example, cultural norms and lack of economic empowerment mean that women often struggle to negotiate their rights to safe sex and some are led into sex work.

(DFID, 2008: 24)

Although addressing economic factors in relation to gendered imbalances is consistent with the analysis here, in its response to behaviour generically DFID fails to translate this acknowledgement into an effective policy response. Instead it returns to superficial prescriptions of increased provision of contraception and expanded sexual-health education. Although these measures are important, as has been demonstrated, in context of certain social constructions of sexuality and normative sexual interactions, augmented in gendered economic inequities, these measures can expect only limited success.
Equally, whilst the degree of economic impact consequent of HIV/AIDS is referred to in the strategy (2008: 6), possible approaches to its mitigation, in a direct sense, are not articulated. As has been indicated, extending policy to structural dimensions whilst remaining in the ambit of financially and logistically practicability is innately complex. However, it remains an issue that demands representation in policy responses such as this. This is not to suggest that, comparatively, this approach does not represent a progression. Its extension of resource distribution to infrastructural development- £6 million in a 7-year term- and the broader provision of ARVs are both particularly significant (2008: 5). However, in context of the previous analysis, it cannot be argued from this that the extent to which economic factors interrelate with the crisis in practice is replicated in policy. In comparison to broader international policy discourses, this strategy is fairly typically. Although the interrelation of economic condition and the spread of HIV/AIDS is generally recognized in particular in relation to gendered inequalities (PEPFAR, 2007: 9), gendered problems of the disease are generally addressed in behavioural framings. Although to an increasing extent the need to redress legal and institutional inequities is also being considered, economic approaches remain limited, primarily to non-specific references to the relevance of micro-credit and other micro-financing initiatives (UNAIDS, 2008: 27). In terms of economic impact the pattern is comparable. Although an awareness of the effects of the epidemic at both the micro- and macro-economic level is high, in none of the policies analysed here is funding allocated to this area specifically (World Bank, 2008: 21-2 DFID, 2008: 5; PEPFAR, 2006: 4-7). It may be argued that response to these impacts is subsumed within broader poverty-reduction initiatives, however, both the scope of the crisis and its specific nature demand a level of funding and a mode of approach that may not be satisfied in more generic poverty-reduction measures. Equally, to the extent that international discourses lack focus on the crisis’s economic effect, sensitivity in the economic reforms attached to poverty-reduction financing to the interaction of economic factors with HIV/AIDS, in both cause and effect, may be blunted. To consider this the cases of Zambia and Botswana will now be utilised.
HIV/AIDS: The Case of Zambia

In Zambia HIV prevalence is estimated at 15.2%, registering amongst the highest in the region and comparing to an average prevalence of 7% (UNCTAD, 2008: 147). Although based on some democratic indicators the political system in Zambia has been criticised, the government has been receptive to international HIV/AIDS interventions, engaging in multi-lateral policy discourses and developing responsive evaluative frameworks (Burnell, 2001; Bartlett, 2001; UNGASS, 2008a). In some indicators health infrastructure also appears relatively developed, as compared to the SSA region in aggregate. Although per capita expenditure on health is only $20, immunization coverage for third dose of diphtheria toxoid, tetanus toxoid and pertussis vaccine is 80% and for measles is 84%, compared to an average of 66% in the region generically. Equally, the density of health workers in Zambia, as measured per 1000 persons, is 3.789, compared to a regional average of 2.626 (WHO, 2006a: 6). However, indicators of health describe a different condition. Infant mortality rate, as measured per 1000 births, is 182 compared to the SSA average of 167. Life expectancy is also significantly lower, at 40 years as compared to an average age of 48 (WHO, 2006a: 1). However, this may reflect the higher prevalence of endemic diseases, including HIV, rather than a weak health sector, although to some extent the two are inter-related. For example, although incidences of TB in Zambia are almost double regional averages, rates of detection and treatment are also substantially higher (WHO, 2006a: 5). Although the health demands of HIV/AIDS are distinctive from those of other epidemics, the relative efficiency in the immunization against, diagnosis and treatment of other disease is a positive reflection on institutional and infrastructural capacity.

Consequently, it may reasonably be assumed that the basic political and infrastructural conditions exist for the implementation of HIV/AIDS prevention strategies, although the latter admittedly requires substantial development. In terms of treatment, approaches have been comprehensive. In 2005 the government committed to fully subsidised, universal access to ART. The absolute number of those accessing treatment subsequently increased from 13, 636 to 149, 199 (UNGASS, 2008a: ix). Although this satisfies less
than a third of aggregate demand, it represents a dramatic progression in response (WHO, 2005a). The government is also continuing preventative behavioural change approaches, extending access to sexual healthcare and education and promoting condom usage (UNGASS, 2008a). However, the capacity of the government to maintain this progress may be limited in the absence of extended external inflows. Estimates locate the cost of expanding access to 70,000 persons at approximately $160 million (WHO, 2005a: 2) and although aid commitments to Zambia are high, this does not always realize in reimbursements (Ellyne, 2002). Equally, expanded treatment has not yet been adequately reflected in improved health infrastructure. It is noted that human capital in the sector remains low, and that the system is continuing to experience increased strains associated with the epidemic, although rapid expansions in ART would suggest that the sector is to some degree coping with adjustment (UNGASS, 2008a).

The epidemic in Zambia has realised trends on both the macro- and micro-economic level comparable to those already described. In aggregate it is estimated that the crisis has imposed 1.5% reduction in GDP growth, where growth was averagely limited to 3% in 2000 – 2006, the proportional impact of this is critical (UNCTAD, 2008: 159). Loss of labour, declining productivity and increased unit costs of production have all been formative of this. Trends in reduced investment and lower domestic savings rates have also been animated by the general economic slowdown, contributing to significant losses in government revenue (UNGASS, 2008a; Ellyne, 2002: 14). This has inevitably occurred in conditions of increased demand, with health expenditure projected to rise by 2.2 – 2.6% of GDP by 2012 (Ellyne, 2002: 15). Notably, the dependency ratio has also increased, reaching 0.9:1, amongst the highest levels globally (UNGASS, 2008a: vii). Behavioural indicators are also significant. Although prevalence rates demonstrated a marginal decline from 15.5% in 2000 to 15% in 2005, this figure was increased to 15.2% in 2007 (UNGASS, 2008a: 214). Condom use remains low, estimated amongst females (15-24) at only 33%, although the rate is higher amongst men at approximately 42% and both represent a progression from former levels (WHO, 2006a: 4). In contrast, the percentage of adults reporting multiple sexual partners has increased, with age of sexual
debut is in decline (UNGASS, 2008a: iii). The implications of this will be explored in comparison with the Botswana.

**HIV/AIDS: The Case of Botswana**

HIV prevalence in Botswana is amongst the highest both regionally and globally, estimated at 23.9%, (UNAIDS, 2008: 214). As a middle-income country, maintaining high levels of GDP growth, its resource base is also, however, manifestly more extensive. Although the density of health workers per 1000 persons at 3.965 is only marginally greater than that of Zambia (WHO, 2006b: 6), per capita expenditure on health is exceptionally high for the region at $171 (WHO, 2005a: 1). It is also notable that the percentage of health workers represented by physicians, nurses and midwives is 76.8%, as compared to a regional average of 60.4% (WHO, 2006b: 6). Again, utilizing indicators of immunization, diagnosis and treatment in other disease as broad reflection of institutional capacity Botswana’s health infrastructure appears comparatively developed. Rates of diagnosis and treatment of TB are 67% and 77% as compared respectively to 48% and 72% regionally. Immunization rates for measles, DTP3 and HepB3 are 90%, 97% and 79% respectively as opposed to 66%, 66% and 35% regionally. Health indicators, however, are poor (2006b: 5). Both life expectancy and health expectancy at birth are significantly lower than regional averages, at 40 and 35.5 as compared to 48 and 41 years (WHO, 2006b: 1). Equally, the cause specific mortality rate for HIV/AIDS is in excess of six times that of that of SSA generically. However, as in the case of Zambia, it is predominantly the spread of HIV/AIDS that has undermined national health indicators. For example, in the absence of AIDS it is estimated that life expectancy in Botswana would have been between 60 and 65 years (Epstein, 2004: 36). In terms of morality rates, AIDS accounts for more than 2/3 (Crafts & Haacker, 2004: 189). In general, Botswana boasts a comparatively strong health system with wide coverage (WHO, 2005b: 2)

The political context is also conducive to intervention. Interaction with multilateral actors has been positive and levels of political commitment to the programme are exceptionally high, assuming responsibility for a multilateral co-ordination of approach and adopting a
vision of eliminating new infection by 2016 (UNGASS, 2008b; WHO, 2005: 2). The current approach is also relatively expansive, addressing issues both of treatment and prevention. Botswana introduced ARVs into the health sector in 2002, expanding provision in 2004-5; ART is now fully subsidised. It is also supported by a programme of universal voluntary testing and counselling, inclusive of anti-stigmatisation practices, demand for which has increased significantly since its inception (UNGASS, 2008b). It has similarly attempted to strengthen the institutional setting, most notably investing in human capital within the health sector (WHO, 2005b: 2). These measures have occurred concomitantly with attempts at reducing risk behaviour, as in Zambia this has focused on a broader educational programme and efforts in condom promotion. In particular, treatment initiatives have realised substantial gains with ART provision satisfying 85% of demand (WHO, 2006b: 5). However, excluding this, support of post-test seropositive persons remains relatively limited. It is also noted that human resources within the health sector are insufficient and investment in this area demands a significant expansion (WHO, 2005b, UNGASS, 2008b).

In terms of economic impact, Botswana’s experience has been relatively consistent with the broader analysis in this work. Average growth of GDP has been reduced by 1.5 – 2.0% per annum and this is projected to continue until 2021. In total the impact of this implies that the economy will be only 2/3 its size in comparison to scenarios excluding the epidemic, realising substantial reductions in government revenue. (ECONSULT, 2006: 112). As the reduction in economic growth exceeds the reduction in population growth, this has also produced a decline of 0.5 – 1% in the predicted GDP per capita growth rate, representing a 10-15% decline in average real income by 2021 (2006: 113). As income has decreased, income dependency ratios have also expanded, reaching 74 dependents per 100 persons at working age, as opposed to 66.7 projected in the absence of AIDS (Haacker, 2004: 33). Equally, whilst government revenue has contracted, the estimated cost of HIV/AIDS on the public sector, if demand is met, is 8% of government expenditure and 3% of GDP (2006: 113). In terms of mitigating the spread, indicators are more positive. It appears that the epidemic has stabilised and may be entering a period of decline: prevalence in 2007 as stated was 23.9%, however, this compares to 24.9% and
25.9% in 2005 and 2003 respectively (UNAIDS, 2008: 214). Whilst rate of condom use is high amongst persons aged 15-24, averaging 81.5% in high risk encounters (WHO, 2006b: 4), as understanding of methods of HIV transmission and prevention is low at 36.5%, this may still imply significant vulnerabilities where misconceptions of risk occur (WHO, 2005b: 1). Equally, that condom use is lowest amongst females at 75% where understanding is higher at 40% (2005b: 1), may be indicative that vulnerabilities resultant of gendered inequities are not been addressed.

**Comparison and Conclusion**

In terms of stabilising the epidemic it is evident that the preventative- treatment approach has been relatively successful in both cases. However, it is equally apparent that preventative measures have not been sufficient in altering behavioural risk patterns. Whilst condom use has increased, in both cases to a large extent these increases are limited to high risk sexual interactions (UNGASS 2008a; UNGASS 2008b). Manifestly, gains in these sectors are of significant utility in reducing the spread of the infection. However, as previously indicated, it is paradoxically often in high risk environments that the potentiality for negotiation is greatest. In casual relations or isolated sexual transactions, for example, both social and economic constraints are least prescriptive of unprotected sex. Consequently, it is arguable that beyond these immediate gains, lowering transmission cannot be secured by current preventative approaches. In relations where formal or informal economic dependency exists, it has been demonstrated that increasing either condom provision or awareness may not translate into altered patterns of sexual behaviour. Unless the underlying economic inequities that sustain these patterns are addressed, it is argued here that further progression in limiting the spread of HIV/AIDS is not possible. There is no evidence at the international level, however, that these issues are productively being internalised.

In terms of the economic effects of the epidemic, it is patent that current approaches are failing. Botswana’s HDI has fallen from 0.77 in a no-AIDS projected scenario to 0.57 (Haacker, 2004a: 88) and income per capita in the poorest quartile has decreased from 43
– 36 pula per month (Greener, 2004: 177). In Zambia, welfare losses subsequent of high mortality are estimated at 68.8% (Haacker, 2004a: 89). The extensive micro- and macro-economic declines consequent of HIV/AIDS have already been described. Developing policy capable of responding to these impacts is inherently complex. It may be argued that a practicable approach, satisfying both financial and logistical constraints is not possible. Whilst this argument is credible, it should not be used as justification of a retreat to fatalism. It is evident that broader poverty reduction initiatives have not been capable of responding to the economic demands of the crisis and it is therefore exigent that the issue be relocated to the international HIV/AIDS discourse. More specifically, that it is embedded not only in analyses of the condition of the epidemic but also in discussion of responses to it. In context of this work it can be argued that this may serve a double purpose. It may both underline the need to direct increasing resource to combating the crisis and, in sensitising the international arena, may aid arguments for the refocusing of neoliberal reform in the developing world, to the extent that this currently reinforces the epidemic’s economic effect. Inevitably, the impact of economic factors on both cause and effect of HIV/AIDS interacts intimately with other socio-cultural and political conditions. However, that economic factors are fundamentally determinant is evident. Unless these factors are expansively and structurally addressed, an environment of poverty and inequality will continue to reproduce the biomedical, behavioural and distal agents that extend both the spread and impact of the epidemic.
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