

Rethinking international and domestic financing for HIV in low and middle income countries¹

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Abstract

The scaling up of treatment for HIV across the world has been one of the most significant recent achievements in international health. But the commitment on antiretroviral treatment also creates a financial liability which is large and insufficiently recognized. In this paper, we explore how this financial liability could be met by domestic and international sources. We argue that (1) governments and donors should recognize the magnitude of the problem and develop tools to manage the liability; (2) allocation of aid should be more rational, transparent and sustainable; (3) more fiscal space should be created domestically; (4) borrowing offers some limited potential for prevention interventions characterized by high returns on investment and (5) efficiency gains, while not in themselves likely to bridge the resourcing gap, should be energetically pursued.

Keywords

HIV/AIDS, financing, government expenditures, aid.

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Introduction

Thanks to the global commitment on antiretroviral treatment, HIV has shifted from a medical emergency towards a chronic condition with significant and relatively predictable costs. In a handful of countries, predominantly in sub-Saharan Africa, the costs of treatment and prevention are of macro significance to the economy and are expected to increase in the short run (Atun, Chang, et al. 2016; Collier, Sterck, and Manning 2015; Lule and Haacker 2011), as treatment needs to continue for a lifetime, and about 50% of those living with HIV are not yet in receipt of ART. The UN Political Declaration of 8 June 2016, for example, argues for stepping up spending from \$19 bn in 2015 to \$26 bn in 2020 (UN General Assembly 2016).

Given the sluggish finance environment, the sustainable financing of these liabilities in low and middle income countries is a major issue (Vassall et al. 2013; Katz et al. 2014). The key to controlling and reducing these very large liabilities is to reduce the number of new infections sharply. However, the rate of decline of new infections has been disappointingly slow. According to UNAIDS, declines in new HIV infections among adults have slowed alarmingly in recent years, with the estimated annual number of new infections among adults remaining nearly static at about 1.9 million between 2010 and 2015 (UNAIDS 2016b).

In low and many middle income countries with significant HIV prevalence, finance for HIV is typically shared between domestic tax revenue and the international community. As we show below, while low and lower middle income countries have increased their funding, many are still very dependent on international support; and that support has levelled off and is unhealthily dependent on a few major donors, among which the US is predominant. There is a risk that either side may pull back from financing of treatment in the expectation that the other side will meet this unfunded liability (Collier, Sterck, and Manning 2015). Such expectations may also lead to the systematic underfunding of preventive interventions, particularly if the shares of donors and countries in prevention differ significantly from the shares of future treatment expenditure.

There needs to be new thinking about how to ensure sustained and sustainable funding for HIV into the future (Figure 1). In this article, we assess what options exist for financing ART liabilities in low and middle income countries. We argue that governments and the international community need to better grasp the magnitude of the problem (Section 1). While international aid for HIV is unlikely to increase in the short run, we argue that its allocation could be improved, to better take into account needs, financial capacity and sustainability (Section 2). We then assess options for increasing domestic financial resources, whether through domestic resource mobilisation and innovative financing (Section 3) or borrowing (Section 4). Given the limitations of these options, we argue that improving efficiency has to be a high priority (Section 5).

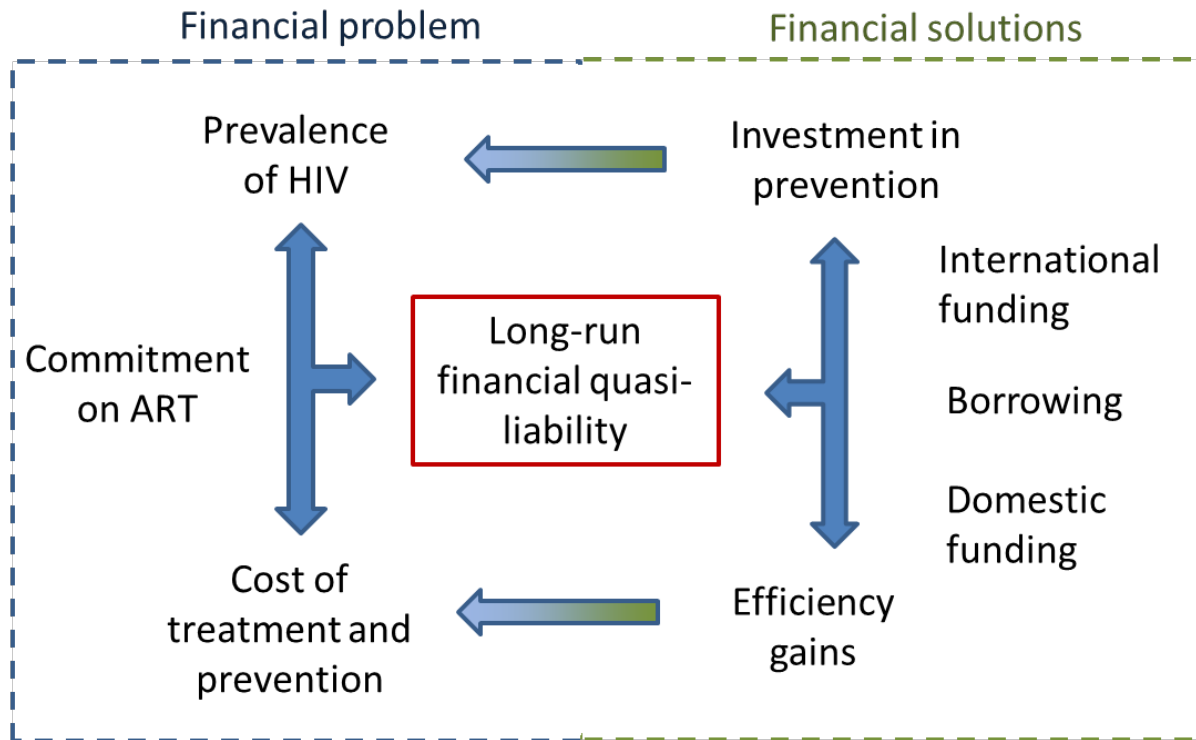


Figure 1 – drivers of the long-run financial quasi-liability and solutions

1. Recognizing the magnitude of liabilities

Unless there are unexpected breakthroughs in scientific research, very large numbers of people will have to stay on ART for the rest of their lives. The costs will rise to the extent that (1) progress is made towards providing treatment to those people living with HIV (around 50%) who are not yet in receipt of ART, (2) some will need access to second-line therapies, and (3) co-morbidities will be an increasing issue for what will be a gradually ageing population of PLHIV (Smit et al. 2015). These long-term costs are relatively predictable, large – and unfunded.

In Figure 2, we provide estimates of the long-run cost of ART. In particular, we estimate the discounted sum of ART cost in % of GDP using data from Stover and colleagues on the yearly cost of ART between 2016-2030 for each country (Stover et al. 2016). We use a linear approximation to estimate the cost between 2031 and 2100. Following the work of Collier and colleagues, we aggregate the yearly costs of ART using a discount rate of 7%, to obtain an estimate of the quasi-liability created by the global commitment on ART (Collier, Sterck, and Manning 2015). The size of this liability in proportion of GDP is represented in Figure 2 (only countries for which the liability is larger than 5% of GDP are represented). For the sake of comparison, we also show the gross debt level of countries in percentage of GNI. We observe that the size of the financial liability created by the commitment on ART is sizeable for a handful of high-prevalence and poor countries. These estimates vary with the discount rate - here 7% - and with the temporal horizon - here 2100. For example, the discounted sum of ART cost for Malawi raises from 52% to 96% if the discount rate considered is 3% instead

of 7% (Figure 3). The discounted sum of ART cost for Malawi drops from 52% to 36% if the temporal horizon is 2030 instead of 2100 (Figure 4).

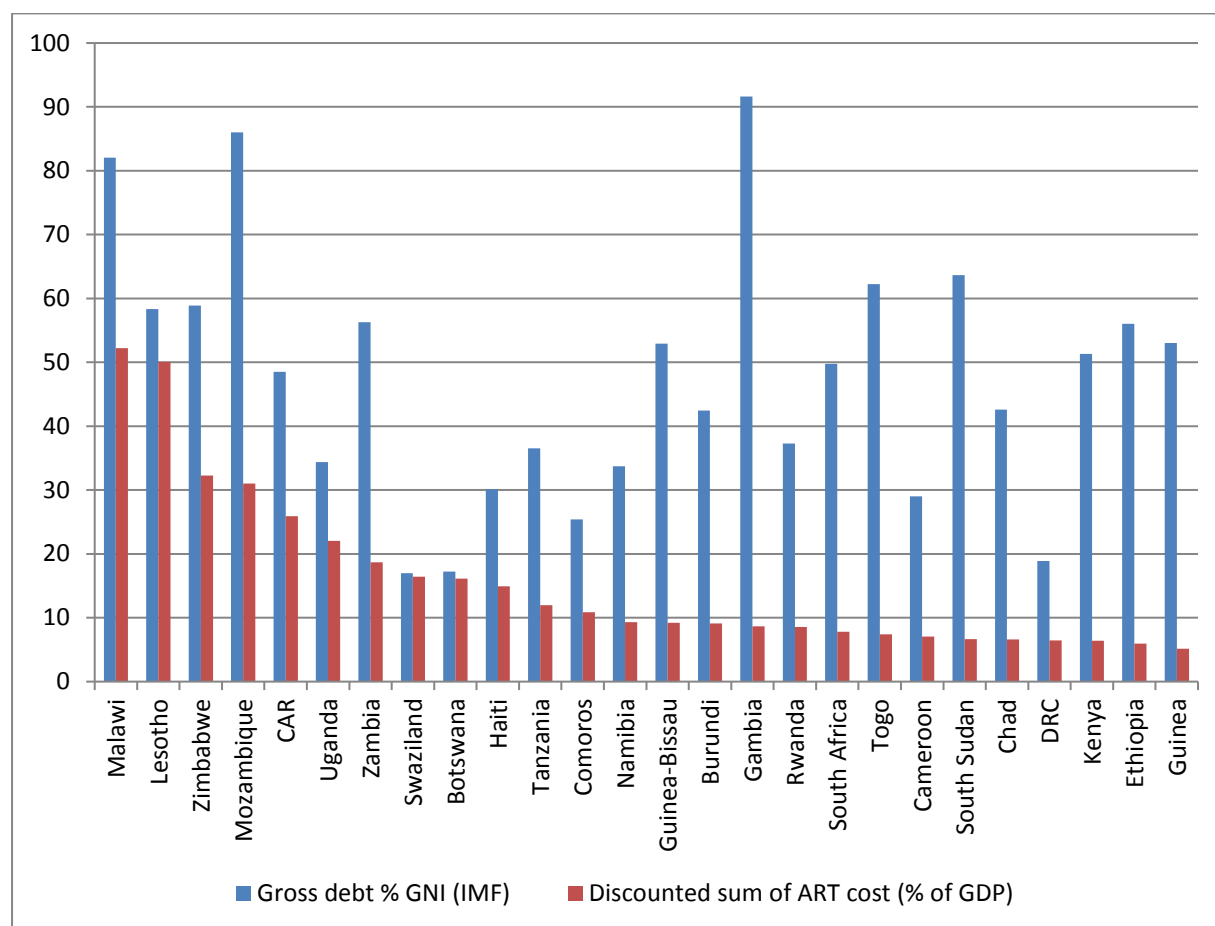


Figure 2 – The magnitude of the financial quasi-liability compared to governments’ debt

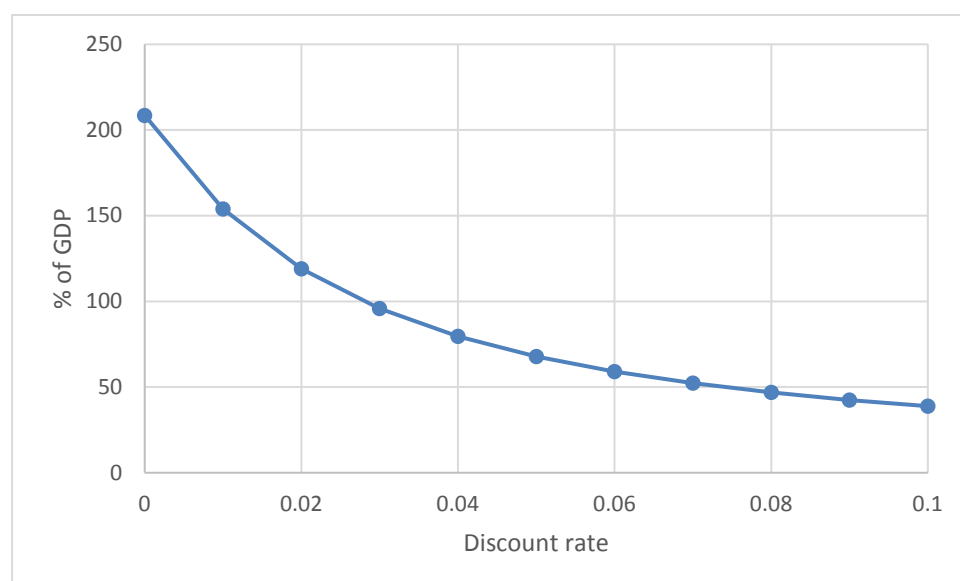


Figure 3 - Discounted sum of ART cost for Malawi, as a function of the discount rate

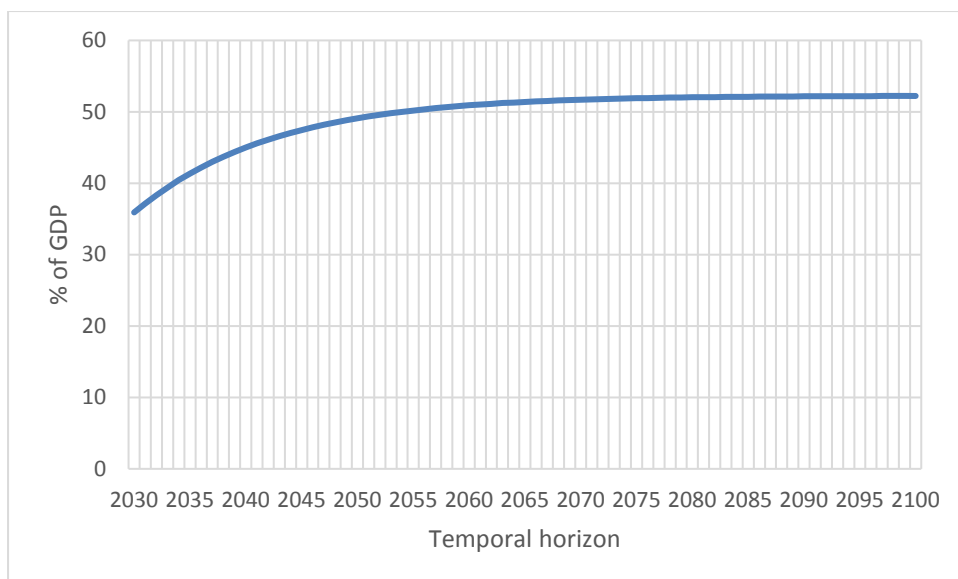


Figure 4 - Discounted sum of ART cost for Malawi, as a function of the temporal horizon

The international community has for the most part concentrated on the funding needed in the short term – for example in successive replenishments of the Global Fund – to achieve particular outcomes, rather than on the implications of the stock of unfunded liabilities in the longer term. Good information on the latter has indeed only recently become available. We argue that both HIV-affected countries and donors need to appreciate better the long-term nature of the problem of financing ART and testing, and to make choices that take fiscal consequences more fully into account. It is important that the finance ministries of countries where this stock of unfunded liabilities is large appreciate its scale, and the need to support a much faster reduction in incidence – including by action outside the responsibility of the Ministry of Health. The evidence is however that HIV incidence is rising in many regions and that even in Africa, the decline in incidence was only 4% between 2010 and 2015 in Eastern and Southern Africa, and still less in Western and Central Africa (UNAIDS 2016c). Any sustainable strategy must give enough weight to locally-relevant prevention measures. For example, in Eastern and Southern Africa, three quarters of all new HIV infections among adolescents aged 10–19 years are among adolescent girls. UNAIDS rightly argue that ‘Reaching adolescent girls and young women, especially in sub-Saharan Africa, will be a key factor in ending the AIDS epidemic’ (UNAIDS 2016c). In many countries, the epidemic is concentrated in particular ‘key populations’ who are often stigmatized and who therefore find it hard to access either preventive or treatment interventions. Only effective cross-government policies and strategies can reduce incidence in these circumstances.

A starting point should therefore be to improve the information on the scale of unfunded liabilities at country level to both countries and to donors. For the countries, this can most appropriately be done by the International Monetary Fund during its regular Article IV discussions with the countries concerned. The IMF’s Action Plan for Strengthening Surveillance (December 2014) states that “Article IV reports should identify those structural issues that are critical to a country’s macroeconomic developments and risks, and analyze their implications for the economy. Where these structural issues fall within the Fund’s core

expertise, Article IV reports should also offer policy advice. Where the Fund does not have in-house expertise, the Fund will need a two-pronged approach: (i) collaborating with other expert agencies in some areas, and (ii) selectively expanding staff's ability to offer policy advice in areas where there is demand from a critical mass of the membership." We would argue that unfunded liabilities for ART are indeed critical structural issues for some countries, predominantly in Africa.

For the international community, the IMF, perhaps working with the World Bank, and drawing on epidemiological data from UNAIDS and others, should conduct assessments by country of the unfunded liabilities for ART on a regular basis, at least where the size of the liability is macro-significant. A report of this kind, which could usefully be linked to the replenishment cycle of the Global Fund, would be a valuable way of ensuring that such liabilities were taken into account in calculating not just support for ART but also other forms of macroeconomic transfer. It could underscore the need for a gradual shift in the balance of funding towards local funding but also discourage precipitate reductions in support by donors.

2. Rationalizing donor finance

This section identifies three problems affecting donor finance for HIV and explores possible solutions: (a) international aid for HIV is stagnating, (b) international aid flows are misallocated and (c) international aid is heavily dependent on one donor.

Donor grant finance for HIV, has gradually declined as a proportion of total resources for HIV in low- and middle-income countries, and has levelled off in absolute terms since the banking crisis of 2008/09 (Kates, Wexler, and Lief 2014; Dieleman et al. 2016). In 2015 domestic resources constituted 57% of the total (UNAIDS 2016a). The prospects of renewed increases in donor grant finance appear limited. Current OECD projections (OECD 2016) suggest that total official development assistance from major donors will remain essentially static over the period to 2019, and within development assistance for health there is likely to be increasing international attention on Universal Health Coverage. Against this background, it is encouraging that the latest (September 2016) replenishment of the Global Fund virtually reached its target of US\$13 billion. However, this total is only modestly higher than the previous (2013) replenishment.

Aid for HIV is not only levelling off but is also misallocated. Allocating aid involves a trade-off "between rewarding good performance and addressing the greatest need" (Bourguignon and Sundberg 2007). If donors reward good performance, aid allocation should be positively correlated with good governance. On the contrary, aid allocation should be positively correlated with HIV prevalence and negatively correlated with national income if allocation is based on needs. Recent work from Sterck (2016) show that a large share of cross-country variation in aid for HIV is unexplained by HIV prevalence, national income per capita and governance quality. More worryingly, at similar level of national income per capita and governance quality, countries with higher HIV prevalence receive less aid per people living with HIV (PLHIV). This research also identifies a hump-shaped relationship between aid per PLHIV and national income per capita, implying that on average lower middle-income

countries receive more funding per PLHIV than very poor ones. This calls more transparency and better coordination in funding allocation.

The logical response should in part be an orderly move – linked to increases in domestic financing - of international aid for HIV from low prevalence countries and middle-income countries towards low-income countries and high prevalence countries. The New Financing Model of the Global Fund is in principle a considerable improvement on its previous proposal-based model, which led to major swings in financing at country level. However, the aim should be more rational allocation across the international system as a whole. Bilateral donors have allocation criteria that are often unclear and are typically hard to influence. A reallocation could therefore most readily be achieved by the Global Fund for AIDS, TB and Malaria playing a more explicit ‘balancing’ role in the system. While the Fund does make some qualitative judgments based on its knowledge of other international resources going to implementing countries, a more explicit analysis would reduce the risk of ‘HIV orphans’ among low income and high prevalence countries.

In most low-income and some lower-middle income countries the costs are being met to a large extent (sometimes predominantly) by bilateral and multilateral donors. Typically, donor finance is provided through relatively short-term commitments (notably the three-yearly replenishments of the Global Fund for AIDS, TB and Malaria). Dependent countries are therefore exposed to very significant risks should donors cut their support. This risk is exacerbated by the fact that one Government, the US, is by far the largest source of finance in total amount (almost two-thirds of donor government contributions), mainly through the President’s Emergency Fund for AIDS Relief (PEPFAR). Indeed just two donors (US and UK) provided almost 80% of international funding in 2015 (Kates, Wexler, and Lief 2014). This is a further reason for ensuring a sustainable fiscal framework as a basis for prioritization of expenditures.

It is not easy to identify ‘commitment technologies’ that could be used to mitigate the risk of a sudden cut in donor support. For example, PEPFAR receives its appropriations from the US Congress on an annual basis. Few donors operate even framework budgets for more than 3-4 years. The Global Fund is replenished for a period of three years. To extend this would probably be difficult to achieve, and would still leave a ‘cliff-edge’ at the end of the period. It might be worth experimenting with a ‘rolling replenishment’ under which donors would agree every three years on a level of replenishment that would in principle be supported for a period of five years, subject to any changes agreed at the next three-yearly replenishment negotiation, thus reducing the ‘cliff-edge’ problem.

Given these observations, and given the importance of investing in prevention now for reducing incidence and thereby reducing future liabilities, one possible option would be to explore a new funding stream on the lines of the Innovative Finance Facility for Immunisation (IFFIm), which has since 2006 enabled GAVI to advance expenditure for immunisation by floating bonds issued by the World Bank and guaranteed by long-term commitments by donors. There is in principle a good argument for advancing expenditure on HIV prevention where this would reduce future treatment liabilities more than proportionately (see section 4.3). While some donors are more cautious about such

commitments given concerns over quasi-commitments of the public sector, following the banking crisis, France, the Netherlands and Australia all made new pledges to IFFIm during GAVI's 2015 Replenishment. An IFFIm-type arrangement, tightly-targeted at interventions capable of accelerating the reduction of incidence and meeting the rate of return test set out in the next section, might be worth adding to the funding options of the Global Fund (with the bonds probably being issued by the World Bank, as for GAVI), so long as long-term donor contributions were substantially additional (as seems to be the case for GAVI). We would expect the amount raised in this way to be relatively modest, but stress that by its exclusive focus on reducing incidence in a financially-sustainable way, it could help the greater focus needed on this aspect of the response.

3. Increasing domestic financing

Over the past few years, we have seen a welcome increase in the share of financing by many developing countries as incomes and revenue capacity have grown. Both PEPFAR and the Global Fund are encouraging greater domestic contributions through co-financing requirements (Vassall et al. 2013). These increases in financing need to be sustained through higher revenue mobilization and a stronger focus on health financing generally including HIV.

Recent research however shows that more could be done. A first group of researchers explored how much fiscal space could be created domestically to finance HIV programmes. Resch and colleagues (Resch, Ryckman, and Hecht 2015) and Remme and colleagues (Remme et al. 2016) use a series of normative criteria - e.g. target for fiscal effort, Abuja target for health prioritization, target of HIV prioritization - to determine how much fiscal space countries could be expected to create, with the idea that liberated funds could be allocated to the HIV response. Resch's team concluded that domestic spending on AIDS in their sample of 12 countries could be increased from US\$2.1 billion to \$5.1 billion annually (+143%). The potential increase in domestic funding is large in 10 out of 12 countries, but negative for two upper-middle income countries, Botswana and Namibia.² Remme's team find that public spending in the 14 most HIV-affected countries could increase from US\$3.04 to US\$10.84 billion per year (+256%). The potential increase in public spending is large for all countries analysed.³ They also use regression analysis to "explore which financing options are most likely to translate into real increases in public HIV resources based on past behaviours". Options that are examined include economic growth, increased government revenue generation, reprioritisation of health and HIV, borrowing, risk-pooling mechanisms, earmarked health tax, and technical efficiency. Potential fiscal space is about 50% lower with this alternative method. Using quartile regression and a larger sample (90 low and middle income countries), Sterck (2016) estimates that US\$2.94 billion of fiscal space could be

² Low-income countries: Ethiopia +87%, Kenya +425%, Mozambique +708%, Rwanda +90%, Tanzania +2225%, Uganda +121%, Lower-middle-income countries: Côte d'Ivoire +700%, Nigeria +258%, Zambia +403%, Upper-middle-income countries: Botswana -19%, Namibia -19%, South Africa +147%

³ Low-income countries: Ethiopia +632%, Malawi +2217%, Mozambique +1079%, Uganda +435%, Tanzania +3380%, Zimbabwe +48%, Lower-middle-income countries: Kenya +366%, Lesotho +101%, Nigeria +1254%, Swaziland +255%, Zambia +1232%, Upper-middle-income countries: Botswana +463%, +Namibia +100%, South Africa +143%.

created (+74%) if every country were aligned with the 75th percentile regression line. Potential fiscal space gains are mostly located in middle income countries such as South Africa and Nigeria.

A second group of researchers recently assessed the scale of innovative finance for HIV (Atun, Silva, et al. 2016). They found that "A limited number of innovative financing instruments contributed a very modest share of funding toward domestic HIV/AIDS programs." The main options pursued so far have been the hypothecation of tax revenues and various initiatives linked to the cancellation (for other reasons) of debt. They argue that there is however scope for making greater use of innovations tried in other areas, such as diaspora bonds, social impact bonds, accessing Sovereign Wealth Funds, and making use of risk guarantees. All these options involve accessing finance on a loan rather than on a grant basis, thus permitting the bringing forward of expenditure in exchange for accepting a longer-term liability. We consider the issues raised by such instruments in the next section.

4. A case for loan finance?

We have argued that international financing is unlikely to grow in the short run. While there is scope for an increase in domestic financing, this would take time to materialize. Given the urgency to invest in prevention to keep ART liabilities at sustainable levels, we consider whether there are circumstances where it would make sense for countries to tap into forms of loan finance, whether through diaspora or social impact bonds, borrowing from Multilateral Development Banks, bilateral donors or the market.

Since borrowing involves a financial liability, Ministries of Finance normally sanction it for investment rather than to support current expenditure. Borrowing would therefore most naturally be used to support interventions that would, with a high degree of probability, produce a more than compensating saving in future treatment costs. Expanding the coverage of ART to the population at large would not meet this test in the circumstances of most HIV-affected countries (Collier, Sterck, and Manning 2015). Such expansion should therefore normally be financed by grants or conceivably by loans on near-grant terms.

An important question is how to judge the present value of future treatment costs. In most cases Finance Ministries should rationally discount these costs at a rate reflecting the country's own marginal costs of capital. To justify loan finance, considerations of financial management require cost/benefit calculations based on a rate that reflects the cost of capital – for African countries typically between 7 and 10% (while it is commonplace for analyses of the cost/benefit of health interventions to be discounted at much lower rates, such as 3%). To meet such a hurdle rate for additional expenditure will require very effective prevention interventions.

There are two cases, however, where a lower rate would be justified:

1. If the borrowing country valued the externalities of societal gain sufficiently to accept borrowing that would not be fully compensated by reduced future treatment costs.

This is the basis, for example, of most borrowing from Multilateral Development Banks for social sector programmes. Since most countries face limits to borrowing (and virtually no country has unlimited access to concessional borrowing), each borrowing has an opportunity cost in terms of some other investment foregone. In practice, countries are likely to prefer to borrow for investments with an assured financial and economic return. In the specific case of HIV, they may hope that the donor community will in the end meet a substantial share of the costs of ART, and they may thus be less willing to incur a borrowing obligation. This demonstrates the potential for moral hazard if the country and the international community do not share the costs of both prevention and of treatment of new cases in similar proportions (Collier, Sterck, and Manning 2015).

2. If funding at a lower rate than the marginal cost of capital is available for HIV but not available for other purposes.

In such a case, since this finance has no opportunity cost in terms of other borrowing foregone, the discount rate to apply would be the cost of the funds in question.

As an example, the Bill and Melinda Gates Foundation has established a 'Lives and Livelihoods Fund' with the Islamic Development Bank, under which the Bank will invest \$2bn of its own resources into the 'lives and livelihoods' sectors (health, education and agriculture) and the Foundation with other grant donors provide a grant of \$500 m to soften the loan terms. Such an approach eliminates the trade-off with, say, investing in economic sectors, and could have the effect of broadening the interest of some countries in borrowing for HIV purposes. However, the key to it is the willingness of the loan provider to set aside part of its own lending capacity for social purposes.

This analysis suggests that the scope for borrowing will in practice be quite limited, though not negligible.

Cases where borrowing through one route or another might be attractive could include, for example:

- a) **For countries graduating from international donor grant finance and not facing a strong borrowing constraint.** For such countries borrowing – whether from Multilateral Development Banks or from other sources – might have a low opportunity cost, and could make sense in order to smooth the transition to full domestic budget finance, with a focus on communities where transmission is high and where consequently reductions in incidence are likely to meet the financing test set out above. The scope for such action would be increased if some subsidy is available (for example from donor agencies as part of the graduation process).
- b) **For similar countries, or other countries able to contemplate only limited borrowing, accessing loan funds not available for other purposes.** For example, it would be sensible to access social impact bonds for innovative programmes to test approaches likely to pass the financing test set out above, or for scaling up proven interventions, if this would not crowd out other borrowing. As suggested above, the country could rationally assess the viability of the intervention using the cost of the

funding package as the discount rate. South Africa is embarking on such a programme supported by a social impact bond in respect of female sex workers.

- c) **For poorer countries for similar purposes**, but only where the loan terms are highly concessional, and do not crowd out borrowing opportunities for interventions with a higher economic return.

In all these cases, a relatively modest amount of grant funding (or some form of guarantee) from an official agency (e.g. a bilateral or the Global Fund) or a philanthropic source in association with interventions largely financed by loans (e.g. from Multilateral Development Banks) or bonds, could encourage the finance ministries of the countries concerned to access loan funds. This concessionality could, for example, be linked to results achieved by the intervention. As noted above, however, such an approach may be easier for finance ministries to accept if the loan element does not have an opportunity cost.

It is noteworthy that soft funds of the Multilateral Development Banks, such as the World Bank's IDA, are now having some success in tapping concessional loans from donors in addition to grants. If, but only if, there was a significant demand from low and middle income countries for concessional loan finance for HIV-related interventions, a similar option could be explored for future replenishments of the Global Fund.

Further work is needed to explore the likely demand for loan financing and for identifying interventions likely to pass the rate of return and loan preference tests.

5. Efficiency gains

Given the limitations of these different options, it is obvious that all forms of funding for HIV needs to be used as efficiently as possible. While it is beyond the scope of this paper to assess all options for efficiency gains, we conclude by listing here what we believe are the most promising opportunities.

First, the Global Fund has persuaded many recipients to accept pooled procurement for drugs, leading to a 25% fall in ART costs. It has also set up a new site wambo.org to benchmark prices and procure medical supplies efficiently. These initiatives show scope for more efficient procurement – and very probably also more efficient distribution.

Second, savings could also be achieved as improved drugs permit less frequent clinic visits, while CD4 assessments as a basis for the decision to start treatment could be generally dropped, with further potential savings.

Thirdly, earmarked international funding for HIV has encouraged the creation of unnecessary parallel structures. Particularly at community level, countries should make every effort, with donor support where available, to provide each patient with the health services they need in one place, and to pool supporting services wherever possible. The encouragement of universal access under the Sustainable Development Goals should facilitate moves in this direction, as should the evolution of the Global Fund's policies for support of health systems.

Finally, as pointed out above, there are substantial variations in the risk of HIV infection between communities in most countries. Too often, however, resources are not concentrated on the groups where transmission is highest. Social and political obstacles to dealing effectively with high-risk behaviours and marginalized groups must be addressed. Removing these obstacles requires a strong political leadership, which would change public attitudes, uphold human rights, address criminalisation, stigma, and discrimination, and reinforce the engagement and leadership of people living with HIV (Piot et al. 2015). The savings from a more focused spatio-temporal approach to interventions has been shown to improve effectiveness considerably (Anderson et al. 2014; McGillen et al. 2016). These and other avenues need to be pursued more energetically.

Conclusion

Our survey does not suggest easy options for growing and predictable finance for HIV. Instead, our analysis suggests a more ordered approach on the following lines:

- Provision by key institutions such as the IMF, World Bank and UNAIDS of fuller information to countries and donors on the burden of treatment costs in individual countries, particularly where these are macro-significant, with a view to encouraging a more evidence-based approach by all parties, including ministries of finance;
- Improving the allocation of international funding to better reflect relative poverty and prevalence, including through a stronger effort by the Global Fund to take account of funding from other sources;
- Managing in a planned way the phasing out of donor support as affected countries become richer, in cooperation with the countries concerned, and with a focus on sustaining support to key populations.
- Moving to reduce the ‘cliff-edge’ implicit in the current replenishment system for the Global Fund, and examining the case for accessing donor funds for a new financing stream specifically for effective measures of prevention, analogous to the International Financing Facility for Immunisation;
- Continued efforts to increase domestic financing within rising health budgets;
- Paying more attention to the overall fiscal framework in prioritizing interventions, thus encouraging greater investment in activities likely to reduce incidence more sharply;
- Considering the scope for facilitating borrowing for such activities;
- Promoting greater efficiency in the use of resources for HIV (including through smarter procurement, reduced clinic visits, more sharing of facilities and greater focus on key populations).

Our paper calls for further research and for renewed policy action in three areas. First, work is needed to understand and relieve the barriers hindering a better allocation of aid for HIV. Linked to this is the need for better understanding of the circumstances that might encourage both the demand for and the supply of loan finance (whether from market, official or philanthropic sources) for interventions that would extinguish sufficient future treatment liabilities to make borrowing a rational option.

Second, work is needed to develop a sustainable framework for a greater integration of the health sector aspects of HIV into a UHC perspective (including new health insurance options) without harming the sustainability of international donor support and hampering the great successes of the response against HIV. Research and policy dialogue should determine where funding for HIV should fit within this broader aim of ensuring healthy lives for all. There is a need to build on the encouraging degree of consensus about the need to integrate HIV interventions much more closely with other health system interventions. The fact that there is now a large, growing, and gradually ageing population receiving ART and exposed to co-morbidities is an additional driver of a more integrated approach requiring effective health systems that respond to the needs of individuals (Smit et al. 2015). At the same time there are specificities in the response to HIV that will in our view continue to justify strong and focussed national programmes explicitly addressing HIV.

Finally, work is needed to support a renewed and sharp reduction in new infections, which is in the end the key sustainable solution in the absence of a breakthrough on vaccination or cure. The scaling up of ART, despite the large reduction in transmission of HIV that it produces, is not producing anything like the decline in incidence that most lower income countries with medium or high prevalence need. Higher priority is needed for actions that will address this, both through scaling up biomedical and behavioural approaches to prevention known to be effective and through a more focussed effort to work with key populations and HIV hot-spots, to change realities that still cause high levels of transmission.

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