Shared Responsibility for Financing the Global HIV Response

December 2013

1 Summary

The purpose of this paper is to describe the global principles that could underlie the definition of "fair share" between high, middle and low-income countries in the financing of the global response to HIV, and to set this in the context of the current financing architecture and the potential for future increases in both financing and the efficiency and effectiveness of service delivery.

Although growth in international funding from OECD countries has slowed considerably since 2007, domestic public investment has continued to rise steadily since 2005. There are however large inequities between the contributions and ability to pay of different countries, both in the OECD high-income countries, and in the low and middle-income countries where the HIV epidemic is concentrated.

The paper presents an economic argument that the response to HIV is a diverse set of activities, some of which may be regarded as public goods justifying a publicly funded response. The remaining components fulfil the definitions, by global consensus, of merit goods, which also justify public intervention in the market, and therefore a public and shared responsibility for a response. The global nature of the epidemic and its consequences also implies a shared responsibility between countries – one that has been implicitly accepted by the global community through international declarations, and the mobilisation of unprecedented levels of international funding.

The paper presents a method for benchmarking the levels of domestic investment using the index of domestic priority (DIPI) developed by UNAIDS. This illustrates the difference in levels of commitment between countries, and suggests possible criteria for budget reallocation within those countries, and international assistance reallocation between countries. These reallocations are however unlikely to close the existing unfunded gaps if current target levels of coverage are to be met.

The paper concludes with a discussion of the potential of future gains in efficiency and effectiveness to close the remaining resource gap. Current trends indicate that such gains can offer more than financing increases, but that these improvements will be progressive and steady, rather than dramatic. The unfunded gap to meeting the 2015 targets will therefore require a short-term increase in the level of international investment.

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2 Introduction

a) Background

The international response to HIV has been unprecedented in the history of public health, both from the high-income OECD countries who currently provide more than $8 billion per annum to finance HIV prevention, AIDS treatment and mitigation in low and middle-income countries, but also from the affected country governments themselves, who collectively provide a similar and steadily growing amount. In that sense, we can see that the responsibility for financing the global response to HIV is, in reality, shared – although a closer look reveals a high degree of inequity between countries in the amounts committed. The financing architecture of HIV is dominated by a small number of countries, either donor countries from the OECD, or those middle-income countries with large epidemics. This is related to three main factors – first, the extreme inequity in the distribution of HIV infection – the countries of southern and eastern Africa have prevalence rates that are beyond anything previously imaginable for an infectious disease; second to the extreme inequity in the distribution of income across countries, and third to the nature of HIV itself.

HIV has many unique features that set it apart from other global public health and development challenges. First, it is a persistent or long-wave event – the average length of time between initial infection and the appearance of debilitating symptoms is as much as 8 years, and with the current generation of anti-retroviral medicines, people living with HIV can expect to live long and productive lives provided they receive on-going treatment. Second, HIV is transmitted primarily through unprotected sex or through the use of infected needles, and in many countries is most prevalent among people who are socially marginalised, such as drug users, sex workers or men who have sex with men who face difficulty in accessing social services. Third, the cost of treatment for AIDS has historically been high – meaning that it is not affordable by poor people, or by the Governments of poor countries – many of which have high rates of prevalence.

In the context of the global economic downturn precipitated by the financial crisis in 2007, there is perceived pressure on international funding for development in general, which has also been felt in the area of HIV. It has in addition led to a closer examination of the pattern of current financing, whether there would be better or fairer ways to share it, and whether there are alternative sources of funding that would work better. This applies in particular to the idea of "fair share" – is there a general underlying principle that could be applied to help decide what would be the "right" distribution of financing responsibility between or within countries? The purpose of this paper is to explore this question.

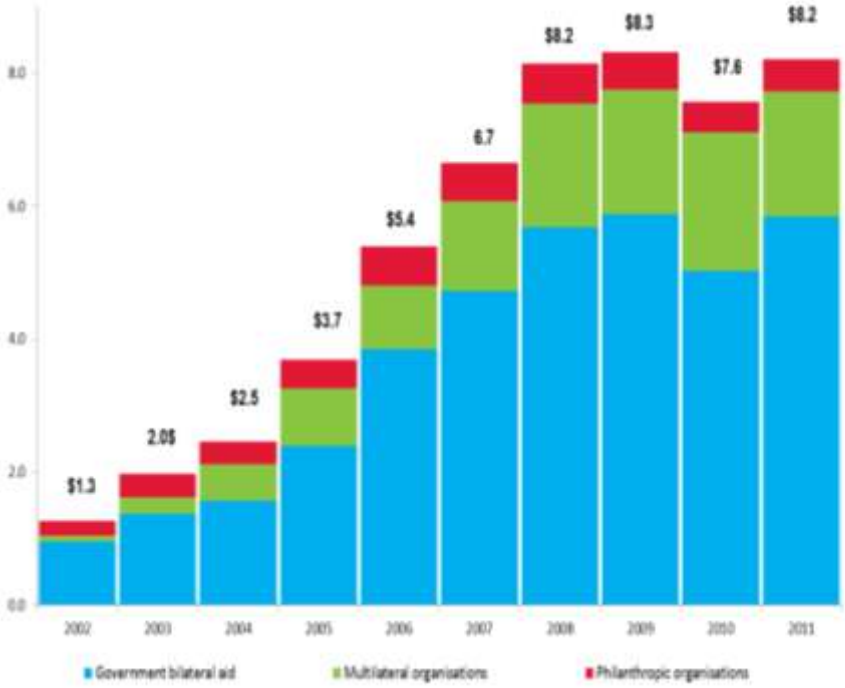
b) Outline

The paper summarises the current trends and patterns of global HIV financing, then explores the economic definitions of public or merit goods as a possible basis for the definition of fair share. The final part of the paper provides an example of a particular benchmark developed by UNAIDS for assessing the levels of contribution and future potential of domestic financing.

3 Trends and patterns in HIV financing

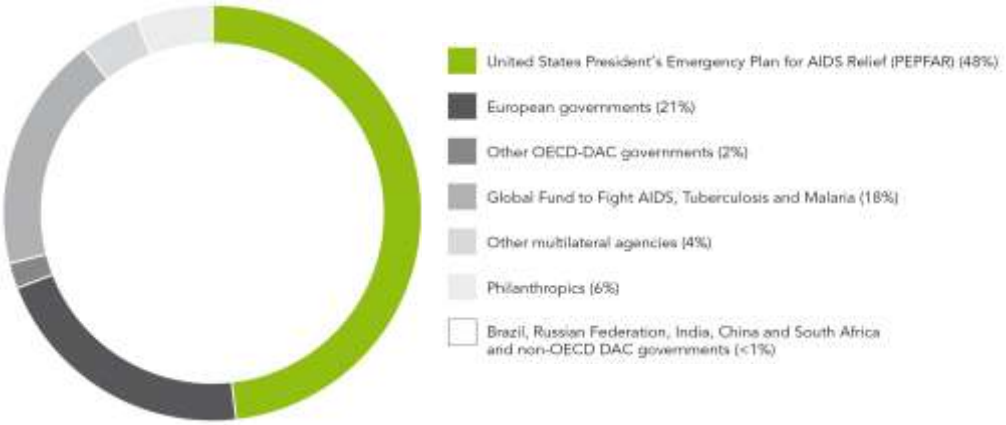
After many years of steady growth, international financing for HIV levelled off between 2008 and 2011, at a little above $ 8 billion per annum, as shown in Figure 1 below. In fact, the recently produced estimate from UNAIDS for 2012 indicates a global total of about $ 8.7 billion (the breakdown was not available for this chart), which has restored an upward trajectory to the global financing picture.

Figure 1: Levels of external financing for HIV, 2002-11



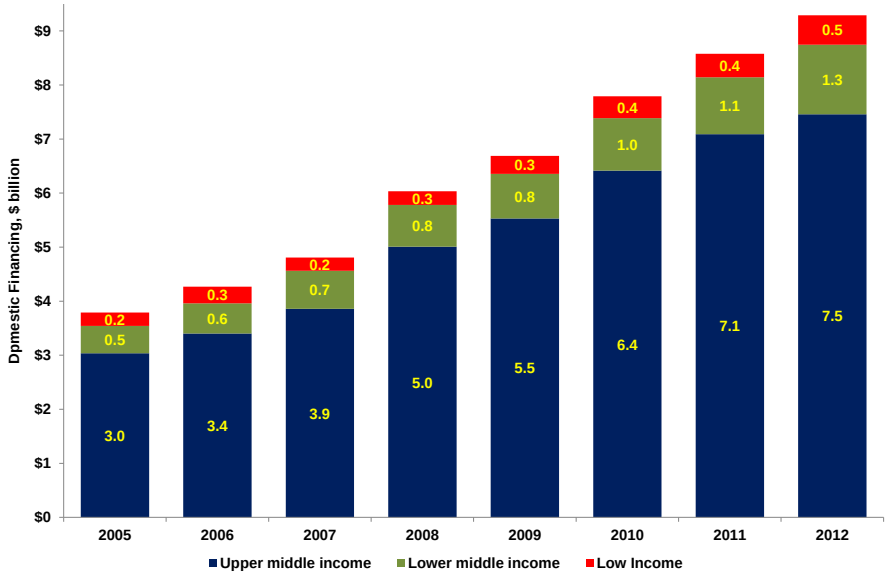
Note that the bulk of this amount is from Government bilateral aid – indeed almost half of the total amount comes from the United States PEPFAR programme, as shown in Figure 2 below:

Figure 2: Sources of International Financing for HIV, 2011



UNAIDS estimates indicate however that domestic financing has continued to grow steadily since 2005, as shown in Figure 3 below. These estimates are based on analysis of partial data coverage, with interpolation and some extrapolation to 2012, but almost certainly give an accurate picture of the global trend (although there needs to be caution in interpreting the estimates for individual countries).

Figure 3: Trend in domestic financing for HIV, 2005-12

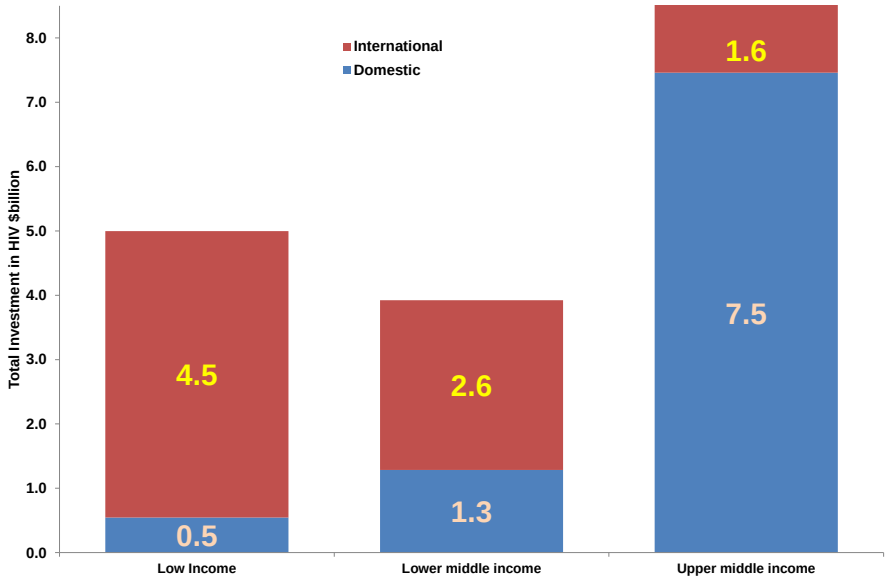


Note however that just over 80% of the global domestic financing is in upper-middle income countries, which can be largely accounted for by three in particular – South Africa (24%), Brazil (11%) and the Russian Federation (10%) – collectively accounting for almost half of the global total of domestic financing. 35 low-income countries account for only 7% of the global total, and 49 lower-middle income countries only 12%.

The pattern of financing by national income level is shown in Figure 4 below. As can be seen, about 52% of international financing is directed to low-income countries and

30% to lower-middle income countries. Most of the remaining 18% to upper-middle income countries was in fact disbursed to South Africa, the country with the highest burden of HIV in the world:

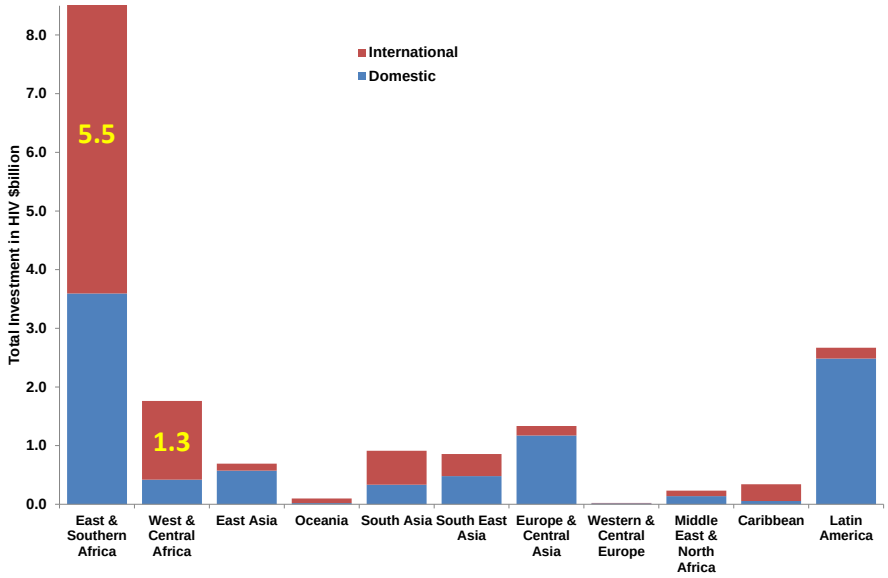
Figure 4: Income distribution of international financing for HIV, 2012



As might be expected, most of the international financing is directed towards the highest-prevalence countries in Africa, as shown in Figure 5 below, which also shows that almost all of the financing in Europe, Central Asia and Latin America is from domestic sources.

Given these global patterns, the question arises as to whether they constitute a "fair share" across countries. The following section explores a possible basis in economic theory for addressing this question.

Figure 5: Regional distribution of international financing for HIV, 2012



4 Who should be responsible for providing a response to HIV?

Much of the debate about shared responsibility for the provision of health services in general, or HIV services in particular, refers ultimately to whether or not health service provision might be regarded as a "public good", or alternatively a "merit good". Both terms are understood in different ways, and often not distinguished from each other. It is worth briefly examining the case for classifying the HIV response in either of these two categories.

a) Public Goods

Public goods are defined by economists in terms of two important attributes:

1. Public goods are "non-rival". This means that they can be shared by additional consumers without reducing the quantity being consumed by existing consumers. The most common examples are laws (and by extension, human rights), or public infrastructure such as street lighting. From an economic point of view, this implies that the marginal cost of producing for an additional consumer is zero, so that any price that is more than zero will have the effect of reducing consumption, and reducing the welfare of consumers. This is often used as an argument that they should be provided for free.
2. Public goods are also "non-excludable". This means that the producer cannot prevent people from consuming them once they have been provided. Therefore, if the producer wishes to charge a price for consumption, consumers have an incentive to "free ride", meaning that they do not have to pay, since they cannot be prevented from consuming for free.

It is important to note that many goods are neither purely rival nor purely excludable. Both attributes may exist to some degree, either strongly or weakly. For example, a public education campaign may be in the form of mass media or posters, which is neither rival nor excludable, or may be targeted to some extent to certain neighbourhoods or populations, thereby becoming partially excludable.

The result of these two attributes in their purest forms is that they will not in general be provided by a free-market economy, since it is not possible for firms to receive payment for them. They can only be provided by means of public sector intervention, either through direct provision, or through subsidies or regulation.

The extent to which there is a normative "responsibility" on the public sector to intervene in the supply of public goods depends on the extent to which the services in question are regarded as important, desirable or essential. This leads to a considerable overlap with another category, termed "merit goods"

b) Merit Goods

Merit goods are goods that would in fact be provided by a free-market system, but not in the quantities that are considered to be sufficient or desirable. It is often argued that this condition applies to education in particular, but also to health care.

Merit goods are generally under-provided in a free market because of two main attributes:

1. Merit goods usually confer long-term benefits to the consumer. However, at the time of consumption, the full benefit to the person consuming the good is not always fully recognised – often because these benefits lie in the future, and therefore cannot be regarded as certain. From an economic standpoint, there is a failure of information with regard to expected benefits, so that there would be an expectation that they will be under-consumed.
2. Merit goods usually generate significant benefits to others, or to society as a whole – not only to the person consuming them. For example, both health and education lead to benefits to the immediate families of the people receiving the services, and to improved productivity and economic benefits in the future – these accrue to the whole of society. In economic terms, merit goods generate "positive externalities". This also leads to under-consumption, to the extent that consumption is motivated by purely private benefits to the individual consumer.

Note that normative considerations are central to the definition of merit goods – they are under-provided in relation to a public perception of what is desirable or essential. Many governments intervene in the market for merit goods on the basis of this social consensus, either by taking measures to increase their supply, or to increase the demand for them.

The common measures to increase supply might be:

- Provide a direct subsidy to producers – this encourages more production without discouraging consumption through a rise in price
- Provide indirect subsidies to producers – for example by providing free training, or providing some of the inputs for free (such as anti-retroviral drugs)
- Direct public provision or goods or services, through state or public enterprises. This is often the case for example with education
- Provide incentives to providers to produce more, for example through conditional grants, or performance-based payments

Common measures to increase demand might be:

- Intervene directly in the price to consumers, either by direct provision that is free at the point of delivery, or by a subsidised price that requires some degree of co-payment. This clearly applies to many of the commodities used for treatment and prevention of HIV, which are too expensive to be affordable to poor people in countries affected by HIV
- Provide direct subsidies in the form of vouchers or cash transfers with some degree of targeting
- Provide public education or public campaigns to encourage people to consume more of the merit good. This applies for example to prevention campaigns and youth programmes.

c) Is the HIV Response a Public Good or a Merit Good?

The key point is that the response to HIV involves a diverse set of activities that are delivered in diverse circumstances. It is not in general possible to classify the entirety of the HIV response as being a purely public good – indeed, some components of the response, such as ART, are clearly private goods that are both rival and excludable that would be and are provided by a free market. The following table gives an illustration of how one might classify the principal components of the response, based upon their degree of rivalry and their degree of excludability:

Table 1: A possible classification of the HIV response as a public good

	Non-excludable	Weakly Excludable	Strongly Excludable
Non-rival	**Purely Public Goods** • mass media • public campaigns • political advocacy • legal reform • human rights	**Public Enterprise Goods** • research and innovation • economic benefits of treatment and prevention	
Weakly Rival		• Community mobilisation • synergies with development sectors	**Club Goods** • vulnerable population outreach • youth programmes
Strongly Rival	**Common Pool Goods**		**Purely Private Goods** • commodities – ART drugs, condoms, vaccines • services – PMTCT, circumcision, VCT

Opinions may differ about whether the various components are correctly classified in this table, but the central point is that many of them can be thought of from an economic viewpoint as primarily public goods, while others are primarily private goods. There is no pure definition that covers all of the response.

However, it is clear that the components that satisfy the attributes of private goods also satisfy the attributes of merit goods – in that they generate significant externalities in the form of economic benefits to individuals and society as a whole, and would be under-consumed in a purely private market. This applies to many of the core treatment and prevention programmes of the HIV response.

The key implication from an economic standpoint is that there is a clear justification for public-sector intervention in the response to HIV. This implies in turn that the responsibility for the response is a public one – in other words it is shared across the whole of society within affected countries.

A second question arises as to whether responsibility is also shared between countries – can the response to HIV also be classified as a "global public good", or a "global merit good"? It is instructive to look at the work of the International Task Force on Global Public Goods.

d) The International Task Force on Global Public Goods

The International Task Force on Global Public Goods arose from discussions at the 2002 Monterrey International Conference on Financing for Development, and the 2002 Johannesburg World Summit on Sustainable Development. It began its work in 2003, sponsored initially by France and Sweden, and later in various ways by Germany, the UK, Norway and Austria and a number of national and international organisations.

The Task Force set itself the objective to provide a concrete definition to the idea of a global public good, to identify which goods and services were included within that definition, and how they might best be financed and implemented.

The definition published in 2005 involved three main criteria that would need to be met if a public good is to be considered as being global:

1. It is broadly conceived as important to the international community
2. It cannot or will not be adequately addressed by individual countries acting alone
3. It is defined through a broad international consensus or legitimate decision process

A fourth consideration was the observation that the different global public goods were synergistic – meaning that providing one of them would make it easier to provide others.

Note that none of the criteria follows the usual economic terminology for the definition of public goods. In fact, all three of them are more reminiscent of the definition of a merit good. The argument is that there is an international consensus that certain goods are desirable or essential, and that they will be under-provided or under-consumed because of lack of resources in the countries that need them most.

The third of the criteria is particularly relevant to the arguments put forward in this paper – it is an explicit statement that global public goods should entail a shared international responsibility for their provision.

e) Is the HIV Response a Global Public Good?

This paper has argued above that the response to HIV cannot be regarded as a purely public good, but that the parts of it that constitute private goods satisfy the criteria applying to merit goods, and justify public intervention as well. This idea is inherent in the definitions given by the International Task Force which clearly blur many of the traditional economic considerations. The distinction between public and merit goods is therefore not central to the decision to intervene.

The question of whether HIV constitutes a "global merit good" perhaps depends on the degree to which the positive externalities that result from public intervention are likely to spill across borders – is the eradication or control of the HIV epidemic a benefit to all of humanity, rather than only to the most affected countries? This issue is not prominently debated, but its resolution is implicit in the actions of the international community – perhaps constituting a "revealed preference" in economic terms.

To date, the international community has clearly treated the HIV response as a merit good, regarded as sufficiently important to commit levels of international resource that are unprecedented in the area of public health. The broad consensus has been reflected in several UN declarations, from the UN General Assembly declaration in 2001 to the 2011 Political Declaration on AIDS. Both of these reflected an international perception that the HIV response was important, and both constitute an internationally accepted decision process as defined by the third criterion of the International Task Force.

In this respect, it would seem that quite apart from purely economic definitions, shared responsibility is already a long-standing and accepted principle within the international community, not only with regard to the HIV response, but also to many other international development priorities. While there is no sign that this perception is weakening, there is clearly a concern that the available resources cannot adequately address all of these priorities at once, and that the balance between them is no longer optimal. Perhaps the most pertinent question is not ***whether*** responsibility should be shared, but rather ***how*** can it best be shared to maximise its effectiveness? This question is explored in the following sections.

f) How should responsibility be shared?

With regard to the second criterion of the Task Force, it is also clear (and implicit in the international agreements) that many countries do not have the resources to address HIV adequately, given the extreme imbalance in the distribution of the virus across countries, the imbalance in income levels across countries, and the high cost of intervention.

Public intervention in the HIV response may come in the form of domestic investment, drawn from public (tax-based) or private funding within the most-affected countries themselves, or international investment, drawn from the high-income countries worldwide. The core question is whether it is possible to define the "right" mix of domestic and international investment in any particular country. In other words, is there an acceptable "benchmark" or "metric" for the amount that countries might be able to invest in the future from their own resources, and that could be used as a basis for defining the responsibility of the international community to provide additional assistance?

It is clear that such a benchmark would be expected to relate to the income level of affected countries, to their capacity to provide and sustain the necessary services, and to the magnitude of the HIV epidemic that they are experiencing. Possible criteria are explored in the following section.

5 Towards defining the scope for domestic financing

a) What are the drivers of domestic public financing for HIV?

There are a number of criteria that would be expected to be related to the level of investment that a government would be able to make for HIV. These would include:

- The level of national income, measured by gross domestic product (GDP) or gross national income (GNI). This is a first approximation of the total level of resources available within a country
- The degree to which the Government is able to raise revenue from the economy through taxes, levies, domestic borrowing or other means. This might be measured by the total Government revenue, or more usually by the Government recurrent expenditure budget (which is usually larger as a result of deficit borrowing)
- The proportion of the Government budget devoted towards debt servicing – where this is large, it can significantly reduce the available recurrent budget
- The pre-existing pattern of disbursement to the different sectors. For example, if historical allocations to health have been low, then health infrastructure is likely to be poor, and this will reduce the short-run capacity to absorb rapid increases and convert them into service delivery. This would be

expected to be relevant to the HIV allocation, which is typically mostly in the health sector.

A recent publication by Galárraga et al.[1] modelled per-capita domestic HIV contributions as a function of per-capita income, relative size of the health sector, and per-capita foreign debt service, and used the predicted values to represent a benchmark against which to identify imbalances between countries. The authors concluded that global domestic financing could increase substantially if countries who were below their expected level increased in order to match it.

In this paper, we propose a prior method as developed by UNAIDS that reaches a similar conclusion based on an index intended to represent a benchmark against which to make normative projections. The method differs from that of Galárraga et al. in three important respects:

1. Total Government revenue was used in preference to GDP, as a more precise representation of the resource actually available to Government in the short run. This implies an acceptance of the current degree of economic taxation within the countries concerned, and assumes that this will not change significantly within the period of projection (usually up to the year 2020).
2. The relative size of the health sector was not considered. The essential purpose of the index proposed by UNAIDS was normative, intended to establish a benchmark for total investment in HIV that does not depend on the existing priority accorded to the health sector. It is intended that the index will capture the fact that countries with low health investment will show up as having low HIV investment as well. If the index controls for the relative size of the health sector, this will not happen – it would capture instead the degree to which HIV is prioritised within the health budget. However, where the UNAIDS index is used for the purpose of making future projections, it is important to assume relatively gradual changes from year to year, to account for the effect of health service capacity.
3. The foreign debt servicing was also not considered. This may be a potentially useful extension of the method, perhaps as a direct correction to the government expenditure budget, to give a more accurate picture of the available resources.

b) Measuring domestic priority

The Domestic Investment Priority Index (DIPI) developed by UNAIDS is based on two main assumptions:

1. A country's ability to pay for HIV from domestic public sources is dependent on the overall size of the government expenditure budget, which is a proxy for the available resources

[1] Galárraga O, Wirtz VJ, Santa-Ana-Tellez Y, Korenromp EL (2013) Financing HIV Programming: How Much Should Low- And Middle-Income Countries and their Donors Pay? PLoS ONE 8(7): e67565. doi:10.1371/journal.pone.0067565

2. A country's need to pay for HIV from domestic public sources is related to the number of people living with HIV, which is a proxy for the HIV-related disease burden

These are both expressed more clearly in per-capita terms. A country's ability-to-pay for each person living with HIV is likely to be related to the total government budget per capita (i.e. for each person living in the country). The ratio between the two suggests an index:

The DIPI index expresses the ratio:

$$DIPI = \frac{Domestic\ expenditure\ per\ PLHIV}{Government\ budget\ per\ capita}$$

Both the numerator and denominator of this expression are larger in a country with higher available income. If all of the relationships implied by the ratios (the DIPI is a ratio of ratios) are linear proportions, then the value of the DIPI would be expected to be stable with relation to changes in income (ability to pay) or disease burden (need to pay). Under these assumptions, the value of the DIPI index should not differ between small and large countries, between poor and rich countries, or between low and high-prevalence countries. The differences in DIPI values would therefore have a normative interpretation – expressing the "level of effort" or priority accorded to HIV in a country.

Countries with a higher DIPI value are investing a greater proportion of their ability to pay on each PLHIV – therefore giving HIV more priority, as suggested by the name of the index. The actual amounts invested per PLHIV will of course be lower in lower-income countries.

There is a very wide variation of DIPI values between countries, although it is important to remember that the data quality is not always sufficient to support close interpretation of the results for individual countries. This is because expenditure data are drawn from a variety of sources – usually from National AIDS Spending Assessments (NASAs), or from annual or biannual reports intended to track progress towards the 2015 targets of the UN General Assembly Special Session on AIDS (held in 2001). It is important to note that:

- Not all countries report every year – there are significant gaps in the time series for most countries, and recent years are usually not well represented
- A few countries have never reported at all
- Categories of reporting are not always consistent between countries – for example, external funds are sometimes counted as domestic (especially where there is pooled funding from external donors)
- For this reason, the data presented below have been subject to an analysis designed to provide the most rational possible interpolations in order to

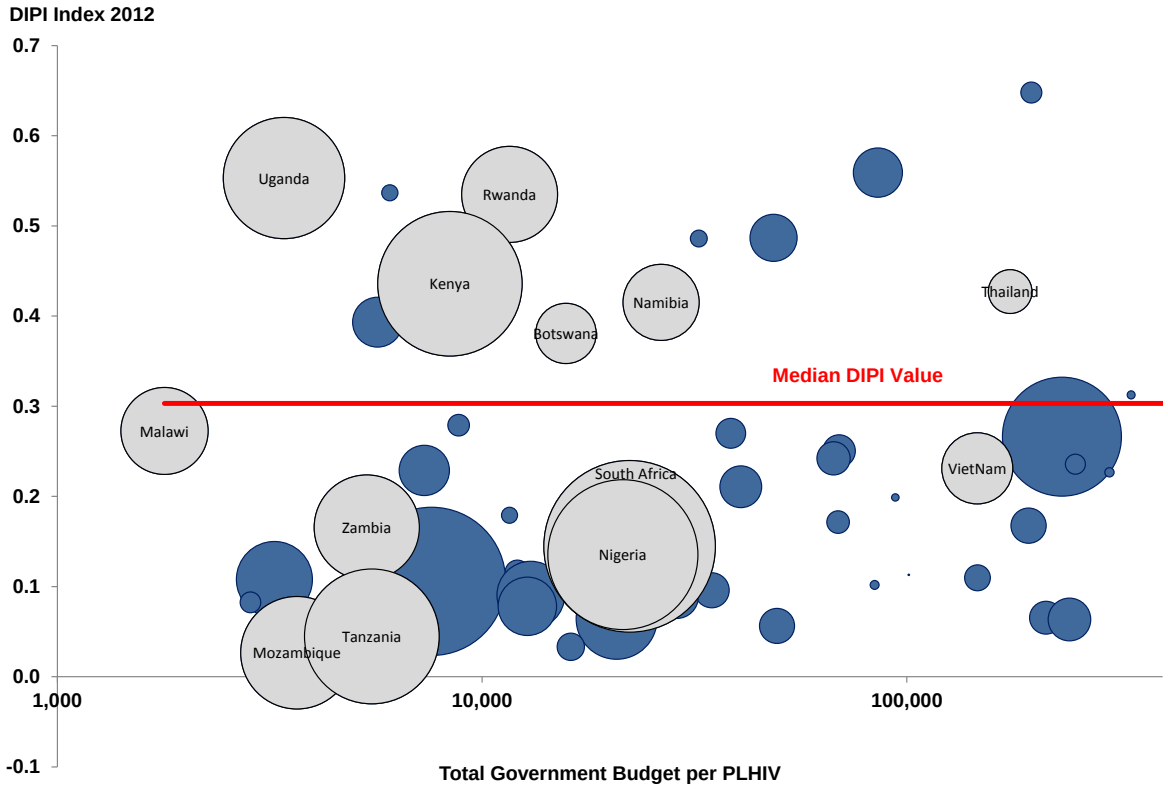
produce a consistent basis for comparison of the global total between years (as presented in Figure 3 above), and to make a "best guess" for non-reporting countries.

For these reasons, there needs to be considerable care in interpreting country-specific information. These are presented here as a first step in what should be a more detailed investigation at country level.

Figure 6 below shows indicative values of the DIPI index, using UNAIDS prevalence and expenditure data (as described above) from 2012. The vertical axis represents the value of the DIPI index, the horizontal axis arranges the countries according to a crude measure of ability to pay – the total resources available (Government budget) per person living with HIV (PLHIV), while the size of the bubble represents the level of international funding in each country during 2012. The horizontal red line is the median value of the DIPI across these countries, a selection of which are identified for purposes of illustration, subject to the caveat on data quality.

Note that there is no obvious correlation (as expected) between national ability to pay (the horizontal axis) and the value of the DIPI – some poorly-resourced countries have high DIPI values, others low. This is a first-level indication that the DIPI index may be providing a genuine measure of national priority, rather than of national resource availability.

Figure 6: Comparing Government commitment using the DIPI index



One possible conclusion might be that the low-income countries that are above the DIPI median cannot reasonably be asked to pay more from domestic sources, while those below the DIPI median may have potential to do so. This would have important implications for the nature of the dialogue that would be appropriate between external donors and the Governments of recipient countries.

Note also that approximately 70% international funding is currently provided to countries that are below the DIPI median – i.e. they accord less than average priority to HIV from their own budgets. This is suggestive that there may have been a degree of substitution or fungibility in national allocations to different sectors – based on a perception that donors will continue to fund HIV, so that national funds can be allocated elsewhere.

The enormous variation between countries in the values of the DIPI index suggest that there is significant potential for increased domestic investment in some of them, but not others, and that the index values might be used as a first-level indicator in negotiating future reallocations of international funding. This provides a possible basis, explored in the following section, for assessing the degree to which domestic funding might be able to grow in coming years, and in which countries.

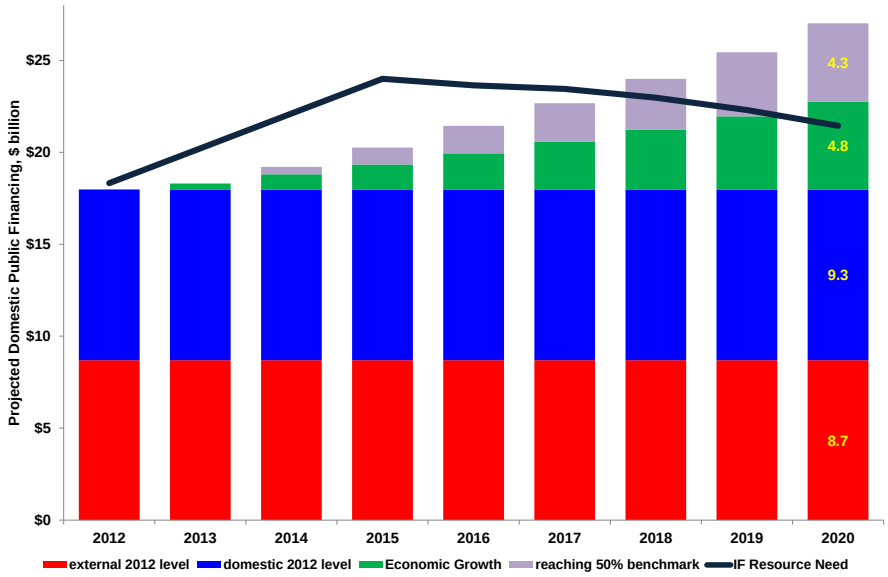
c) Potential for future growth in domestic investments

The DIPI analysis (in agreement with the analysis of Galarrága et al.) suggests a method for projecting the potential for future growth. As a starting point, we would expect domestic expenditure to increase in line with economic growth, which would translate into growth of available resources and Government budgets, all else being equal.

As a second step, we might establish a normative criterion based upon the DIPI index, for example by picking a value representing an indicative norm. This approach asks the question – what would global financing look like if countries below a normative DIPI level were to increase toward that level by a target year, while countries above that level remain as they are? Thus, some countries might increase their HIV investments only on the basis of economic growth, while others might have additional potential to reallocate in favour of HIV from other budget lines.

This approach has been used for the projections presented in Figure 7 below, which was also the underlying assumption used in the calculations for the replenishment request to GFATM for 2014-16. This used the DIPI median as an indicative norm (for countries below that level) to be reached by the year 2020. The chart distinguishes the potential growth from 2012 resulting from economic growth alone from the additional growth that might result from reallocation in countries below the DIPI median. The line on the chart represents the total estimate of global resource need produced by UNAIDS for the 2010 Investment Framework:

Figure 7: Potential resources 2020 and the investment framework



The chart shows the potential increases in comparison with the baseline value of $8.6 billion in 2011 (in blue – this includes an estimate of about $1 billion from out of pocket spending). Economic growth over the 8-year period would be expected to add a further $1.7 billion, or 20% to domestic investment. Reallocation by the countries below the DIPI median would add a further $1.6 billion, or 19%, which is a relatively modest reallocation over the period. A more aggressive criterion (such as reaching the 75 percentile rather than the median) would yield somewhat more. In addition, since the chart presents only the total, it masks the significant implication for reallocation between the countries.

It can be seen that the current level of international investment (which has been added as the next layer in the chart) falls short of the resource needs estimated for the Investment Framework, implying an global unfunded gap of about $5 billion by the year 2015, which falls steadily thereafter and might be met altogether by the year 2018.

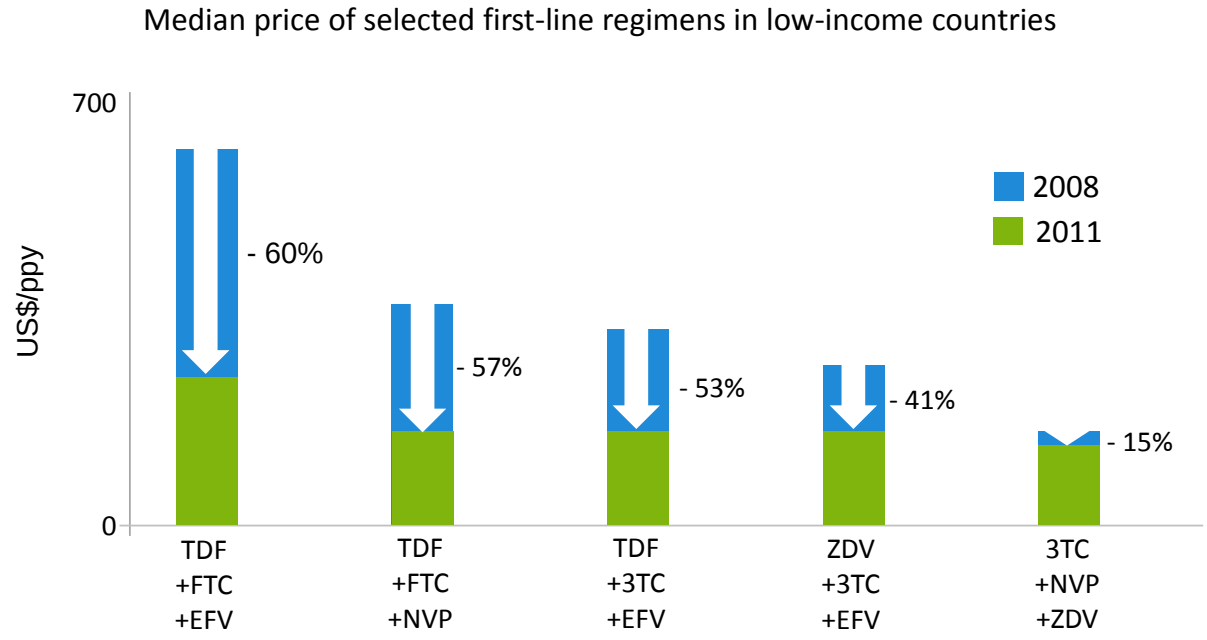
This analysis therefore suggests that it is unrealistic to meet the current global targets for HIV financing for 2015 purely through increases in domestic investment. Although it would seem that increases of about 4% per annum would be easily sustainable through economic growth and reprioritisation in low and middle-income countries, the resource need estimates imply a remaining need for further increases from the international community in the short term. There is however a realistic prospect that the global need for international investment may start to decline in future.

One question that arises naturally is whether there is further potential to reduce the resource needs through improvements in efficiency and effectiveness of the response. This potential is briefly discussed in the next section.

d) Increasing value for money

The Investment Framework estimates have already made strong assumptions about the potential for reduction in unit costs, particularly for treatment. Commodity prices have indeed fallen significantly in recent years (see Figure 8 below), in addition to which an increasing proportion of people on treatment (now 90%) are using lower-cost generic drugs. Further reductions might be expected in the future as a result of economies of scale and scope (through improved integration of services).

Figure 8: Price reductions in ART regimes between 2008 and 2011



Source: Global Price Reporting Mechanism, WHO 2012

Set against this however is the consideration that costs may also rise in future with widespread adoption of new technologies and targets – e.g. treatment as prevention and new treatment guidelines.

A recent study carried out by Wu Zeng et al (2009)[2] used data envelopment analysis (DEA) to evaluate the technical efficiency of national HIV/AIDS programmes in low and middle income countries. This can be seen as a landmark study because its results indicate at country level the extent to which efficiency gains can be made. This information is, obviously, of crucial importance to any approach to sustainable financing for HIV.

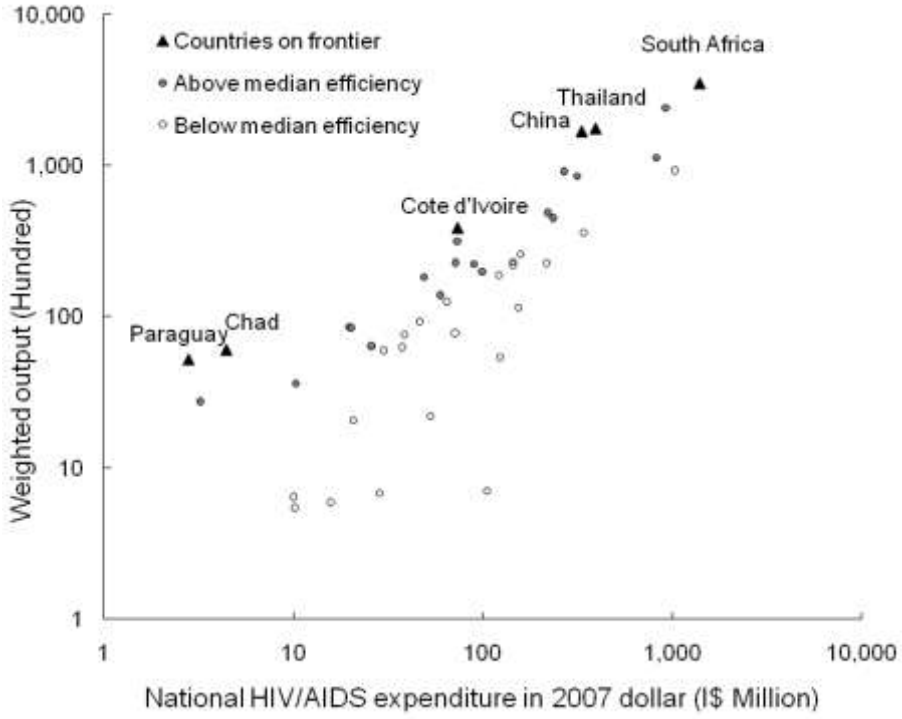
The study determines technical efficiency levels for the combined outcomes of different HIV programmes in 68 countries between 2002 and 2007. The outcomes

[2] Zeng W, Shepard DS, Chilingerian J, Avila C.. "How much could we gain from improved efficiency? An examination of performance of national HIV/AIDS programs and its determinants in developing countries." BMC Health Services Research 12. (2012): 74.

used were: number of people receiving voluntary counseling and testing (VCT), the number of HIV+ pregnant women receiving AIDS treatment for prevention of mother-to-child transmission (PMTCT), and the number of patients receiving antiretroviral treatment (ART).

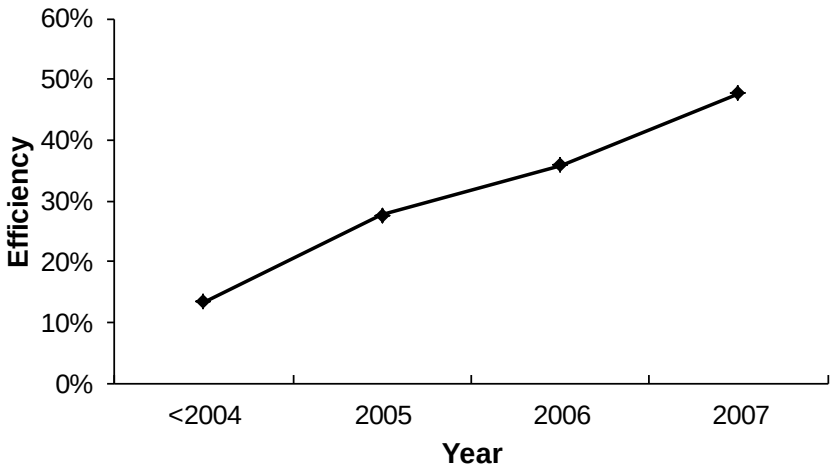
A notable outcome of the study was the ability to place countries on a production possibility boundary chart, which shows which countries are near or on the boundary (more efficient), and which have the potential to reach the boundary. This is illustrated in Figure 9 below.

Figure 9: HIV and AIDS services production frontier



A second notable result from the analysis was the observation that efficiency of AIDS responses increases significantly over time, from 13.3% before 2004 (including 2004) to 47.7% in 2007. This is shown in Figure 10 below.

Figure 10: Change in efficiency of national HIV/AIDS programs over time (2002-2007)



The authors also investigated the drivers of increased efficiency of HIV programmes, and concluded that the most important explanatory variables are:

- Income measured by GNI per capita – efficiency increases with increasing income up to a certain point, then decrease again for higher income levels
- An combination of 'control of corruption' and 'rule of law' – suggesting that that the more the rule of law is respected and the more public power is exercised for the benefit of the public good, the more efficiently HIV programmes are implemented
- Voice and accountability – suggesting that higher levels of beneficiary group participation in decision making lead to better value for money in the production of VCT, PMTCT and ART services. This finding is in line with best practice guidance from UNAIDS

Although Zeng's study has well-recognised limitations – for example it only accounts for three of the components of the HIV response and it does not consider the impact of allocative efficiency improvements (which would be significant), it does provide important insights as to the probable scale and pace of future efficiency gains, and also an idea of which countries have the greatest potential. Although these improvements are unlikely to be realised before the 2015 target year, the study provides strong encouragement that future gains have the potential to outweigh the probable scale of financing increases.

6 Conclusions

1. This paper has argued that there is an implicit international consensus that the response to HIV is a global merit good that requires a collective international response. This in turn implies that there is an acceptance of shared responsibility – what remains is to quantify the terms of that responsibility on the part of domestic and international investments.
2. Domestic expenditure on HIV can continue to increase as economies grow and countries reallocate in line with ability to pay and disease burden
    - But domestic financing is limited by economic capacity, especially in low-income countries
    - In addition, some countries are already allocating as much as can reasonably be expected
3. There are remaining unfunded needs beyond the domestic ability to pay in low and middle-income countries
    - This calls for continued and sustained commitment by traditional donors, and investigation of further options – for example new donors, innovative sources, bridging loans and continued efficiency gains
4. It is possible to devise acceptable benchmarks or metrics that will help to define the most appropriate mix within countries of domestic and international financing, and will help to ensure that international financing is distributed to best effect
5. There are encouraging signs that the remaining funding gaps can be met by future improvements in efficiency and effectiveness, although the short-term targets may not be met.
6. If the 2015 coverage targets are to be met, it follows that there will need to be short-term increases in the level of international funding, probably by between $5-6 billion per annum.

Appendix – Terms of Reference

This paper has been produced on behalf of UNAIDS, on the basis of terms of reference that requested the following:

- Describe global principles of fair share including how government revenue and burden of disease link to projected ability to pay and analysis of criteria for efficient resource allocation between countries etc.
- Paper of 20-25 pages on global principles of shared responsibility, including brief technical annexes. The paper should include a description of guiding principles of shared responsibility in the AIDS response; criteria for assessing/calculating countries fair share based in their ability to pay, burden of disease and economic growth; criteria for assessing /indicating to donors how to allocate their international assistance to countries based on need and ensuring equity; suggested methodologies/tools to make the necessary measurement and projections.