

# **Fiscal Implications of Debt and Debt Relief: Issues Paper**

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This paper forms part of the background work for a DfID workshop on the Fiscal Implications of Debt and Debt Relief to be held on 20 November 1998 and is to be presented in summary form at the workshop.

Other work being done for the workshop comprises:

- i) A literature review of debt, investment and debt relief.
- ii) A literature survey on the lessons for developing countries from debt in developed countries.
- iii) Case studies of debt in Ghana and Tanzania.

It is anticipated that following the Workshop there will be further analytical and empirical work on the issues raised, guided by the output of the Workshop itself.

This issues paper is concerned with broad areas across the full scope of the work on debt being undertaken for the Workshop. It highlights key issues and provides possible answers suggested by the literature, the aim being to facilitate discussion rather than to present comprehensive or finished work.

The main issues addressed in the paper are fiscal sustainability concepts and their use in developing countries, the desirable amount and structure of internal and external debt, the macroeconomic and monetary implications of debt relief, and the relative merits of using donor resources for debt relief compared with direct financing of government expenditure. The paper also comments on some further issues such as the interaction between debt and private savings, and the implications of economic uncertainty for debt strategy.

## Can ‘fiscal sustainability’ criteria be devised and made operational for LDCs?

A large literature has grown up on the question of fiscal sustainability in developed countries, primarily in relation to the large fiscal deficits of the US in the 1980s and the Maastricht Treaty criteria in Europe. A working definition of sustainability is that a government's stock of debt should not grow beyond the point where the debt to GDP ratio is too high for debt servicing payments to be made to keep that ratio stable with plausible tax rates (relative to government expenditure) to generate those payments. If the debt to GDP ratio passes this point there will be a tendency for the required debt service payments to outstrip the governments' primary surplus (revenue less expenditure other than debt service payments). Broadening this idea to an inter-temporal context, and assuming a perfect capital market, indebted governments need to generate primary fiscal surpluses equal, in present value terms, to the level of their initial debt for the fiscal position, defined by those surpluses, to be sustainable. The assumption of a perfect capital market limits the applicability of the present value condition to developing countries who do not have access to such a market but the point concerning the sustainable debt to GDP ratio is still of relevance.

If we define the level of debt each period by  $D_t$  and the level of real income by  $Y_t$ , with the real interest rate given by  $r$  and the growth of real income by  $g$  (both of which are assumed constant for simplicity) then for a level of debt service payment  $S_t$  each period, the stock of debt and income evolve according to:

$$D_t = D_{t-1}(1+r) - S_t \quad (\text{I.1})$$

$$Y_t = Y_{t-1}(1+g) \quad (\text{I.2})$$

From which the dynamics of the debt to GDP ratio are:

$$\left(\frac{D}{Y}\right)_t = \left(\frac{D}{Y}\right)_{t-1} \left(\frac{1+r}{1+g}\right) - \frac{S_t}{Y_t} \quad (\text{I.3})$$

In a steady state defined by a stable debt to GDP ratio, shown by  $D/Y$  without a time subscript, this implies that ratio of debt service payments to GDP,  $S/Y$  must be:

$$\frac{S}{Y} = \left(\frac{r-g}{1+g}\right) \frac{D}{Y} \quad (\text{I.4})$$

Hence for a government to stabilise its debt/output ratio, and ignoring the  $1+g$  term in the denominator that has only a small effect, it needs to make debt service payments equal to the real rate of interest minus the real rate of economic growth per unit of debt. Given that this is government debt this level of debt service relative to GDP must also be equal to the primary fiscal surplus. If the debt is owed to foreign creditors the trade balance must also exceed by this amount what it would be as a result of private capital movements alone. To the extent that the foreign share of the debt is less than one the required additional trade surplus need be only that fraction of  $S$ .

The description of sustainability given above concerns the debt repayments to be made to stabilise the debt to GDP ratio in a steady state, and the feasible level of debt repayments as a share of GDP effectively defines the feasible maximum steady state value of that ratio. It should be emphasised that this does not describe the transition to that steady state during which extra debt is being incurred and the debt to GDP ratio will tend to grow. Clearly the return to the investments financed by that debt is crucial in determining the path of output over time and hence the debt to GDP ratio that actually occurs.

It may be noted that if steady state debt service payments of  $(r-g)$  per unit of debt are made the total stock of debt will be continually expanding but that stock relative to GDP will be stable. It is the value of debt or debt service payments relative to GDP that matters for sustainability since the governments ability to raise revenue is likely to rise in line with GDP.

These fiscal sustainability criteria of course require forecasts of the real rate of interest and the real rate of growth. As a result any assessment of sustainability relies upon the accuracy of such forecasts and thus contains a subjective element. This point may be illustrated by the experience of debtor countries in the 1970s when large debts were built up at a time when real rates of growth outstripped (often negative) real interest rates (in which case continued growth would make it progressively easier to service a given level of debt). By contrast, in the early 1980s growth rates fell and real interest rates rose to unprecedented levels. Hence levels of debt that appeared sustainable ex ante turned out to be unsustainable ex post. Thus uncertainty about the future means that sustainability is a probabilistic concept rather than a binary 'yes/no' concept.

A related question is that of whether a flow of grant aid to a country should be included in the measurement of its primary surplus for the purpose of assessing sustainability. Clearly it would be helpful if aid flows could be predicted with certainty but, as with interest rates and growth rates, there is residual uncertainty. That having been said, aid flows tend to change only gradually in which case a significant proportion of them may be included in projections of medium term revenue when considering fiscal sustainability.

Aid may also play a larger role in assisting sustainability in countries prone to negative shocks if aid tends to increase in response to adverse conditions, thus helping to smooth their effects. This is particularly important given that developing countries do not have access to perfect capital markets and hence short run sustainability of the public finances may become a more pressing concern than the sustainability of the public finances over time in a net present value sense.

The forecasting or expectations-driven aspect of sustainability is reinforced when the question at hand changes from one of the sustainability of a given path of future deficits or surpluses to one of whether a government is likely to repay its loans fully. This is a matter of 'willingness-to-pay' (or willingness to tax) compared with 'ability-to-pay' and is crucial for determining the cost of internal and external capital to the country. This is because the cost of capital will reflect default risk, and it depends not only on forecasts of economic variables but also on whether the debtor government will be willing to tax its economy enough to continue servicing debts. This is more important for perceived sustainability than the broader question of whether a government is technically solvent in the sense that there exists at least one set of policies that makes continued debt service feasible. It is often said that one of the reasons for the high level of

lending in the 1970s, to Latin America in particular, was a perception that governments would always be able to tax their economies more if necessary and thus never become bankrupt (in contrast to private sector firms). Since that time the literature has identified the 'sovereign' nature of international lending to governments to be particularly problematic (rather than the opposite) given the difficulties of enforcing contracts between countries and the resulting possibility of default while not technically insolvent. As a result models of sovereign lending emphasise 'willingness to pay' (itself a function of the extent of sanctions in the event of default) as much as 'ability to pay'.

Hence in summary fiscal sustainability depends on the current level of debt (domestic and foreign), the expected values of fiscal deficits, interest rates, growth rates etc. and the government's willingness to tax and impose austerity measures as necessary in order to service debt. Thus fiscal sustainability depends partly on economic fundamentals and partly on perceptions/expectations that are difficult to quantify. The discussion has highlighted the probabilistic nature of sustainability but that does not mean that the concept loses force because there remains a huge difference between government fiscal positions which are almost certainly sustainable and those which are almost certainly not.

In operational terms the lack of precision in estimating the sustainable fiscal stance corresponding to a given level of debt (or the feasible level of debt given expectations of the future fiscal position), and the importance of perceived sustainability, suggests that debtor governments need to weigh the relative costs of being too optimistic or too pessimistic in their fiscal planning. The cost of being overly cautious is essentially an opportunity cost of missing the benefits of higher government expenditure. In poor countries with tight budgets, a limited tax base and high returns to government spending this cost is not to be underestimated. On the other hand, however, there are costs to perceived unsustainability and hence governments need to strike a balance between the two. In relation to external borrowing a perception that the government's fiscal position is unsustainable will result in a higher cost of borrowing and/or credit rationing. This is costly because it reduces or makes less attractive borrowing to fund government investment and it may prevent borrowing to smooth the effects of temporary shocks (both of which are likely to discourage investment). In relation to domestic borrowing, and assuming imperfect capital mobility so domestic and world real interest rates can diverge, the domestic interest rate is likely to rise since the government will at the margin be expected to fund a fiscal deficit that is unsustainable at current tax rates through excessive money creation. Expectations of inflation and subsequent currency depreciation, assuming an initially fixed exchange rate, are also likely to stimulate capital flight.

More generally a perception that the government's fiscal position is unsustainable generates uncertainty about how its budget constraint will ultimately be satisfied in the sense that a fiscally unsustainable position must in the long run, once creditors are unwilling to lend further funds, lead to either higher tax rates, sharp reductions in government expenditure or printing money. Capital flight and/or higher domestic interest rates to compensate for the risk of higher inflation are a reflection of this but the uncertainty is likely to extend to the whole policy stance of government which is likely to make investors delay investment.

Hence the costs and benefits of over or under optimism in fiscal planning suggests that governments must strike a balance between the two when their fiscal position appears to be close

to its sustainable limit. This does not mean, however, that governments should be overcautious since there is a high return to well directed government expenditure in developing countries, particularly debtor countries who have often experienced fiscal austerity as they adjusted to higher debt repayments in the 1980s. It may also be noted that the definition of sustainability, resting as it does on the expected growth rate, means that a given size of overall fiscal deficit may be clearly sustainable in one economy (post-adjustment and with good growth prospects) but clearly unsustainable in another that has yet to create the conditions for renewed growth. In this regard setting a single figure for what counts as a sustainable deficit or fiscal position is highly problematic. For example the HIPC initiative specifies a goal of 280% for the net present value of debt to government revenue (for countries with high exports to GDP ratios) which may be a clearly sustainable or unsustainable ratio depending on country circumstances.

A further point is that the formal definitions of sustainability do permit precise consistency checks to be made when the government is planning its expenditures and revenues since forecasts of the necessary variables are already integral to such an exercise. Fiscal planning is based on adopting a range of assumptions about the future, including those required for the assessment of sustainability as discussed above, and as a result the government's standard macroeconomic and budgetary planning is a context in which the definitions of sustainability given above can be made operational and be subject to appropriate sensitivity analyses. Hence an operational definition of fiscal sustainability is a set of tax and expenditure policies that may be seen to be sustainable in the long run, allowing for possible negative shocks, in the context of an exercise of this kind based on plausible assumptions about future growth rates, interest rates and the governments willingness to impose the necessary tax rates.

In addition the importance of expectations and perceptions implies that governments have much to gain by making such an analysis public information, assuming that the assumptions required for its intended policies to be sustainable are seen as plausible. Publicity of this kind can simply signal good practice within government but it may also feed into assessments of country risk made by outsiders which have been shown to influence investment.

## **How can the desirable amount and structure of internal and external debt be assessed?**

The desirable amount of total debt has already been partly addressed above in that the use of debt financing for high return projects is likely to be highly beneficial as long as the resulting debt position is regarded as sustainable. What has not been discussed is the desirable mixture between external and internal debt. The first point is that the key rationale for long term borrowing is to overcome the problem of large tax distortions from mobilising fiscal resources from the domestic economy; and within that foreign borrowing is attractive if savings are low, as is usually the case in poor economies, and to avoid the crowding out of the private sector's use of available domestic savings.

We discuss the crowding out issue in more detail below with an emphasis on investment but it should also be noted that the costs of excessive deficits go beyond their effect on investment and include the distorting effects of higher taxes in future and the risk of a fiscal crisis that calls for very rapid adjustment.

A related point is that while the analysis points towards potential costs from high deficits, governments in practice find it very difficult and painful to reduce deficits or generate surpluses. This has been shown by the problems many European countries have had in meeting the Maastricht criteria for EMU of deficits less than 3% of GDP. By contrast many African countries have been obliged to run surpluses in recent years.

A further consideration is the desire for monetary stability to encourage financial sector development, including the holding of nominal rather than real assets to improve financial intermediation. A more developed financial sector may help the operation of monetary policy and also enable greater consumption smoothing to occur which is particularly important in shock-prone economies.

In a model in which treasury bills and/or domestic government bonds are the main domestic debt instruments, crowding out occurs through a large supply of bonds or Treasury Bills raising interest rates. This may be exacerbated by expectations of higher inflation by which the government can deflate the real value of the larger nominal stock of bonds. Crowding out results from higher interest rates discouraging private sector investment (on the assumption that the private sector has limited access to the world capital market). In a financially repressed economy in which interest rates are kept artificially low and credit is rationed (often at the discretion of government) crowding out can occur directly through a reduced availability of credit to the private sector if the government obliges the banks to allocate more of the available credit to itself.

These mechanisms for crowding out operate through the financing of investment. More direct crowding out can occur in product or factor markets (such as high government investment raising the relative price of non-tradable investment goods such as construction) though this depends more on the overall level of government investment than whether it is financed through domestic or foreign borrowing. For balance it should also be emphasised that government investment in appropriate projects can have a strong crowding-in effect by raising private sector returns.

A final point is that the crowding out argument, which suggests that the government should be careful not to let its actions raise domestic interest rates too much, does not necessarily imply that forcing interest rates down to artificially low levels is beneficial since this is likely to reduce domestic savings. In a repressed financial system with controlled interest rates this last point differs in that reduced government use of available credit increases that available to the private sector without changing savings behaviour if interest rates remain constant. This does not, however, imply that financial repression is beneficial, simply that its presence alters the crowding out/domestic savings relationship.

Given the above considerations a possible conclusion is that government domestic debt is not harmful as such but excessive selling of government bonds (or use of credit in a repressed system) may have significant costs through crowding out and the generation of inflationary expectations that will tend to further raise interest rates and/or stimulate capital flight and hamper the development of the financial system. For these reasons many economists would argue that beyond the point at which real interest rates are mildly positive governments should look to external sources of funds (over and above domestic tax revenues) to finance its expenditure within a plausible sustainable fiscal framework. Hence the point at which domestic real interest rates become excessive defines a desirable ceiling for domestic borrowing though this does not

exclude the use of foreign borrowing before this ceiling is reached. A further consideration is that foreign borrowing carries with it a short term exchange rate risk whereby real exchange rate misalignments away from their equilibrium values introduces an element of uncertainty not present with domestic borrowing.

If the existing stock of internal debt is greater than the amount deemed appropriate there is a clear potential ‘crowding-in’ benefit to retiring the debt down towards that level in order to reverse the costs of excessive domestic borrowing outlined above. It should be noted that realising this benefit rests in part on the financial system being able to effectively lend to borrowers other than the government. One of the symptoms of high domestic government debt, with associated high real interest rates, is that the return to holding government debt is high (at least in the short run before the government may be tempted to reduce the real value of that debt through inflation) and partly as a result the capacity of the financial system to intermediate resources to private sector borrowers may not be fully developed. If this is the case it does not reverse the arguments above concerning the possible crowding-in benefits of lower domestic government debt but it may give rise to a case for gradualism in the speed with which that debt is reduced to allow the capacity of the financial system to expand.

A further issue concerns the desired maturity structure of government debt, be it domestic or external. This is a complex subject but it may be noted that in general there are gains to avoiding too much short term debt in order to avoid rollover risk whereby a government that wants to refinance a large proportion of its debt at one time is more exposed to the risk of market fluctuations at that time. A longer maturity structure implies a smaller proportion of the debt being refinanced at any one time and hence less uncertainty. In domestic currency capital markets, high inflation expectations as well as uncertainty about the future course of inflation often constrain governments to short term debt in which case a sustainable domestic financial framework (in which interest rates are not excessively high through crowding out or inflation expectations effects) offers the benefit of lengthening the average maturity. A similar benefit also arises from perceived sustainability in foreign capital markets.

## **What are the monetary and macroeconomic implications of debt relief?**

We turn to the effects on the economy of debt relief assuming that this is financed by donors and/or foreign creditors who provide foreign exchange for this purpose. This is discussed for the four combinations of internal and external debt with floating or fixed exchange rates.

Before turning to the monetary and macroeconomic implications for these cases individually it may be noted that the transfer of resources to the debtor country increases its real wealth or permanent income and in each case this will lead to an increase in the price of non-tradable goods relative to tradable goods. This is a reflection of higher standards of living and gives rise to a Dutch Disease effect whereby the tradable sector tends to shrink as the non-tradable sector expands. Despite the term ‘disease’ this should not be regarded as a problem and indeed it may represent a reversal of a previously severe bias in the economy in the other direction due to the need to generate resources to meet higher debt service payments, assuming that this adjustment took place before debt relief was given.

In this context the long run real effect of relief of external debt, that lowers the cost of servicing debt by the interest rate multiplied by the amount of debt relieved, has the opposite macroeconomic effects to the well understood adjustment process by which debtor economies have had to generate trade surpluses (given that external debt service is in foreign exchange) and corresponding fiscal surpluses (given that we are discussing public debt). External debt relief therefore eases the pressure on the government budget and the balance of payments.

Starting from an initially unsustainable position, external debt relief moves the economy towards sustainability without freeing up further real resources for immediate use (though the achievement of sustainability in itself is likely to generate real benefits in the form of higher investment). Starting from a sustainable position there is a generation of new usable real resources for higher expenditure and/or lower taxes. External debt relief will also reinforce the perception of sustainability as long as the government does not overreact to the loosening of its budget constraint or offset the fiscal gains by reducing its tax effort.

The discussion so far has been in terms of the fiscal position. With regard to the balance of payments the lowering of external debt service means that the economy no longer needs to generate as large a trade surplus to finance the outflow of debt service funds and hence a real appreciation results as noted above.

Turning to the monetary consequences of debt relief, initially external debt relief with a floating exchange rate (so the money supply remains constant unless the government changes its rate of money creation), the effect of the debt relief is similar to an exogenous increase in exports of the amount of the debt service payments that need no longer be made. The exchange rate will appreciate and, with a constant money supply, the aggregate price level must fall since real money balances must increase in equilibrium given the higher level of income. Hence the exchange rate will appreciate and the price level fall. These changes will be strengthened if the debt relief allows the government to reduce its reliance on seigniorage revenue and thus reduce its rate of money creation.

With a fixed exchange rate and external debt relief the money supply is endogenous and the price of tradables is exogenous and equal to the world price (plus the effect of tariffs or export subsidies if present) at the fixed exchange rate. Higher real income from debt relief will raise the relative price of non-tradables and hence the aggregate price level rises since its components either remain constant or increase. Monetary equilibrium will therefore require an increase in the money supply since real income and the price level have both risen.

The use of external funds to finance internal debt relief gives rise to broadly similar monetary consequences to external debt relief. Donated foreign exchange is used to buy domestic currency which is in turn used to buy back or retire domestic debt of equivalent value. The domestic currency holding of the private sector is unchanged by this and hence the money supply is unaffected. This is in sharp contrast to a domestic debt buyback financed by domestic money creation which would lead to a large and destabilising rise in the money supply. For domestic debt relief with a floating exchange rate there will be an appreciation of the exchange rate and fall in the price level. These movements may then be reinforced over time if the government makes less use of money creation to finance its spending due to the reduced pressure on its budget following the debt relief. With a fixed exchange rate the aggregate price level will rise,

as the price of non-tradables increases with the price of tradables fixed by the exchange rate, and the money supply will increase also in a similar fashion to the external debt relief case above.

Perhaps the most important result of the above analysis is that domestic debt reduction does not lead to aggregate monetary instability if it is financed from abroad, as opposed to being financed by money creation. This means that in principle rapid reductions in domestic debt need not be destabilising but it should be emphasised that stability here refers to the economy-wide money supply. There may in practice be a risk of financial instability if domestic debt reduction is rapid if the banking system is not well developed and unable to intermediate the funds it receives during or after the buyback effectively. As discussed earlier this is not an argument for avoiding domestic debt reduction but it does suggest a case for gradualism.

### **What are the trade-offs in the use of donor resources for debt relief as opposed to the direct financing of government expenditure?**

Given scarce donor resources the question of where they may have the maximum developmental impact is extremely important and in this regard what matters is not so much whether debt relief would be beneficial but whether it would be more beneficial than direct financing of government expenditure. This is clearly a complex issue and the exact nature of the trade-offs and hence the relative effectiveness of donor resources financing debt relief or government expenditure will undoubtedly vary country-by-country. That having been said there are arguments that suggest that debt relief may yield high returns to donor funds.

Perhaps the most important of these arises from a debt overhang discouraging investment. The mechanisms for this are outlined in the accompanying debt and investment literature review paper. If the debt overhang effect is severe, debt relief may potentially have a strong effect in encouraging private sector investment and hence employment opportunities and increased tax revenue for financing social sector expenditures. This use of funds must, however, be compared with the encouragement to investment that arises from alternative uses of the funds.

A related point is that if the debt overhang effect is severe, such that debt trades at a discount in secondary markets, the economy will be on a part of its debt relief Laffer curve below the 45 degree line, the situation of many developing country debtors. In the extreme case of being on the downward sloping portion of this curve private creditors would in principle be willing to give (coordinated) voluntary debt relief since the return on the remaining debt would rise sufficiently to offset the reduction in the face value of their claims. In this situation the role of donors is more one of coordination (perhaps combined with conditionality) rather than the provision of funds as such. In the less extreme situation of there being a secondary market discount so the debt relief Laffer curve is below the 45 degree line but still upward sloping, donor resources may potentially induce resources from private creditors for debt relief that would not otherwise be forthcoming. In effect donor funds act as a subsidy to private sector debt relief and as a result there is a multiplier or gearing effect that suggests a high return to those funds.

### **Should debt relief be conditioned on total debt, domestic and foreign, but debt relief be limited to external debt?**

Most analyses of debt regard debt service problems as being essentially fiscal in nature without denying the balance of payments dimension to servicing foreign debt. This points strongly towards debt relief being conditioned on total debt rather than external debt though there is a partial counter-argument based on moral hazard in that awareness of this may lead governments to issue excessive amounts of domestic debt ex ante and give little priority to broadening the tax base to improve its fiscal position. The same argument applies in part to the prospect of foreign debt relief, in which a country has an incentive to downplay its 'ability to pay' though in that situation the government is usually prevented from increasing the stock of new debt.

A further possible argument is based on a situation in which the fiscal position is relatively benign but the economy finds it particularly difficult to make the required external adjustment to meet foreign debt service obligations. An example of this would be a highly undiversified economy whose output consists primarily of a primary commodity(s) in relatively inelastic supply and non-tradables. Such a situation points towards a greater concern for external than internal debt though arguably this is more a case for prioritising external debt relief rather than conditioning the amount of debt relief on external debt only.

### **What is the relationship between debt strategy and attempts to raise domestic savings?**

The earlier discussion suggested a number of interactions between the government's fiscal position and debt level and the rate of domestic savings. It is not clear that there is a case for any direct subsidy of savings but equally the macroeconomic environment should ideally not discourage saving. The clearest linkage is that a regime of financial repression with artificially low interest rates will give rise to a strong disincentive to save. While not inevitably linked to the government's debt strategy, financial repression is more likely when a government's fiscal position is under pressure and as a result a move to more sustainable public finances would encourage financial liberalisation. A further linkage follows from the crowding out argument in that excessive reliance on domestic government debt, while causing high real interest rates in the short run, may nevertheless discourage savings by generating expectations of inflation and hence a reluctance to save in nominal terms within the financial system rather than holding real assets outside it.

### **What is the effect on debt strategy of uncertainty about future economic performance?**

Uncertainty about the future performance of the economy has a number of implications for debt strategy and optimal management of the public finances. Firstly, uncertainty about the future makes it harder to establish beyond doubt that a given economic situation will be sustainable. At the margin this suggests more prudent fiscal policies though this argument can be overstated given that sustainability is inherently a probabilistic concept. Secondly, uncertainty about the future is likely to raise the negative debt overhang effect on investment. Thirdly, the variability of economic conditions implied by uncertainty raises the desirability of continued access to capital markets in order to smooth the economy's response to (temporary) shocks. Given that capital market access depends on perceived sustainability, variability in outcomes over time

underlines the value to an economy of that perception, particularly since ‘smoothing’ borrowing is required following negative shocks when lenders may be more reluctant to provide loans.