DEBT SUSTAINABILITY INDICATORS

1. Introduction

Over time there have been different indicators and thresholds used internationally to assess the debt sustainability of low income countries. Prior to the introduction of the HIPC Initiative in 1996, debt sustainability was usually assessed using the ratios of debt stock to GNP and/or exports and debt service to exports. However, there were no internationally agreed benchmarks for determining sustainability, although the World Bank regularly published the ranges it used to classify countries as severely or moderately indebted, on the basis of three-year average ratios of Present Value (PV) of debt to GNP or Present Value of debt to exports of goods and all services[1].

With the introduction of the HIPC Initiative in 1996, and its enhancement in 1999, the key indicators used to evaluate a country's debt sustainability became the following:

- present value of debt to exports
- present value of debt to domestic budget revenue and
- debt service to exports.

More recently, the Bretton Woods institutions (BWI) have revisited the issue of how to assess long-term debt sustainability and the indicators and thresholds to be used for low income countries, beyond of the HIPC Initiative. In doing so they have developed the new long-term debt sustainability framework (DSF).

In addition to the indicators and thresholds used in the international arena, there are regionally applicable criteria, such as ceilings on debt/GDP ratios, arising from regional convergence initiatives. Furthermore, some countries have been establishing national criteria for maintaining debt sustainability.

This note outlines the indicators and thresholds currently being used internationally, regionally and nationally, the methodologies used for their calculations, and the main purposes to which they are being used.

2. HIPC sustainability indicators and thresholds

Since the 1990s, the most commonly used indicators and thresholds for assessing external debt sustainability are those of the HIPC Initiative[2], as set out in Table 1.

Table 1: HIPC Debt Sustainability Indicators

HIPC indicators and thresholds	
PV debt/ exports	150%
PV debt/ budget revenue	250%
Debt service/ exports	< 15% - 20% by completion point

The primarily purpose of the HIPC debt indicators and thresholds is to assess a country's eligibility for HIPC debt relief and to determine the amount of HIPC debt relief qualifying countries are to receive.

[1] Severely indebted countries were defined as those with PV/GNP > 80% or PV/exports > 220%. Moderately indebted countries had 48% < PV/GNP < 80% or 132% < PV/exports < 220%.

[2] Table 1 shows the thresholds for the enhanced HIPC Initiative, applicable since 1999. The thresholds for the original HIPC Initiative were 200%-250% for PV/exports and 280% for PV/budget revenue. To qualify for on the basis of PV/budget revenue (fiscal window) a country must also meet the openness criterion with exports/GDP of 30% or more and the revenue criterion with budget revenue/GDP of 15% of more.

A country is deemed eligible for HIPC relief[3], if after Naples 67% stock reduction, its ratio of PV/exports or PV/budget revenue exceeds the thresholds shown in Table 1. Although the debt service indicator is not used to assess sustainability for HIPC purposes, it is to provide guidance whereby creditors are to deliver sufficient front-loading of relief to ensure annual service costs fall below the 15%-20% range.

In addition, the HIPC methodology prescribes how these ratios are to be calculated as follows:

- The debt coverage is limited to public and publicly guaranteed external debt.
- The present value of debt is computed using the six-month average currency-specific Commercial Interest Reference Rates (CIRRs) of the OECD for officially supported export credits as the discount rates, and the conversion of loan currencies to US dollars is to be done using the appropriate year-end historical exchange rates.
- The export denominator is the three-year historical average of exports of goods and non-factor services, while domestic budget revenue (excluding grants) is an annual figure, converted into US dollars at the appropriate year-end exchange rate for the national currency.
- The DSA results assume all creditors will deliver maximum debt relief, on a burden-sharing basis.

Under the HIPC Initiative debt sustainability is only computed at the time of assessing a country's eligibility for HIPC, with the preliminary document and decision point debt sustainability analyses (DSAs), and at the country's HIPC completion point, or exit, from the Initiative. In addition, the HIPC analysis is to be done on a tripartite basis by national officials and BWI staff.

The HIPC DSAs include sensitivity analyses to gauge the vulnerability of long-term debt sustainability to risks such as the contracting of new debt on less concessional terms, lower export and GDP growth, shocks, such as droughts, and potential scaling up of aid. The stress tests included in HIPC DSAs are usually designed to reflect country-specific risks.

The HIPC indicators and thresholds will continue to be used by the BWIs and others to evaluate the debt sustainability of countries still going through, or yet to be declared, eligible for the HIPC process. So the ratios, benchmarks and methodology still have a place and role to play for the purpose and duration of the HIPC Initiative.

3. DSF Debt Sustainability Indicators and Thresholds

In recent years, the BWIs have been considering how to assess debt sustainability more widely than just within the context of the HIPC Initiative so as to provide guidance on new lending to all low income countries, thereby enabling long-term debt sustainability. There are three key issues underpinning the BWIs considerations:

- The need for a more universal way of assessing debt sustainability is linked to the new IDA grant eligibility criterion introduced for IDA-14[4]. While there was a grant facility under IDA-13, there were a number of criteria for evaluating grant eligibility, whereas for IDA-14 a country's eligibility for IDA grants is assessed solely on the basis of the country's risk debt distress.
- The "free-rider" problem which the BWI define as the "situation in which concessional debt relief or grants could cross-subsidise lenders that offer non-concessional loans". In other words, if post-HIPC countries, which are currently receiving highly concessional loans and grants from multilateral and bilateral creditors/donors, start borrowing more non-concessionally from say, export credit agencies or non-OECD bilateral governments (eg China and India), this could increase their risk of future debt distress.
- As more and more countries complete the HIPC Initiative and MDRI, there is a need for monitoring debt sustainability so as to preclude future debt problems. So the emphasis of the BWI's new approach – through the Debt Sustainability Framework (DSF) - is on forward-

[3] As well as having an unsustainable debt burden, a country must also be IDA-only and PRGF-eligible and have established a track record with the BWI to qualify for HIPC relief.

[4] A similar grant facility has also been introduced by the African Development Bank for ADF-X.

looking projections, rather than on the historical (or 'snapshot') approach of the HIPC Initiative.

Hence the BWI have developed the Debt Sustainability Framework (DSF) as the tool to be used to assess a country's risk of debt distress, based on a series of debt indicators and thresholds.

In developing their new framework, the BWI have linked the debt sustainability thresholds to the quality of a country's policies and institutions. The premise underlying this is that countries with strong or good policies and institutions are more likely to be able to shoulder higher debt burdens and therefore are less likely to fall into debt distress, than countries with weak or poor policies and institutions. Therefore the BWI have formulated separate thresholds for strong, medium and weak policy and institutional performers[5].

The quality, and hence classification, of a country's policy performance and institutional strengthen is measured by the World Bank's IDA Resource Allocation Index[6] (IRAI). In particular the BWIs are classifying countries as strong, medium or weak performers as follows:

- Strong performer – for countries with an overall IRAI[7] equal to or greater than 3.75
- Medium performer – for countries with an overall IRAI of between 3.25 and 3.75
- Weak performer – countries with an overall IRAI equal to or less than 3.25.

On the basis of these classifications, the DSF indicators and thresholds for debt sustainability are set out in Table 2.

Table 2: DSF Debt Sustainability Indicators and Thresholds

DSF indicators and thresholds			
Indicators	**Assessment of institutional strength and quality of policies**		
	Poor	**Medium**	**Strong**
PV debt /GDP	30%	40%	50%
PV debt /exports	100%	150%	200%
Debt service/exports	15%	20%	25%
PV debt/ budget revenue	200%	250%	300%
Debt service/budget revenue	25%	30%	35%

As Table 2 illustrates, countries with strong policies and institutions are assumed to be able to maintain a substantially higher debt burden than poor performers. As a result the thresholds applying to strong performers are considerably higher than those at which a weak performer's debt is classified as unsustainable.

In principle there are five indicators listed, however, in practice the BWIs are focusing mainly on the ratios with GDP and export denominators. They argue that national revenue data are less reliable and comparable across countries than GDP and exports data, and so budget revenue-based indicators have been excluded when assessing IDA-14 grant eligibility.

The data and methodology used to rank countries policy and institutional performance and debt ratios are as follows:

- Up to now the BWI have been using the latest annual IRAI to assess a country's policy and institutional performance. In future the BWI propose to use three-year average overall IRAI scores to classify performance.

[5] For the analytical background to the new thresholds, see the papers listed on www.worldbank.org and follow Home > Topics > Economic Policy and ... > Debt Sustainability Framework for Low-In...

[6] Formerly known as the Country Policy and Institutional Assessment (CPIA). For more information on IRAI and your country's current score, go to www.worldbank.org and follow Home > About Us > IDA > Performance Assessment. > How IDA Resources are Allocated

[7] The IRAI score used is the Overall IRAI, not the IDA Country Performance Rating.

- The debt ratios used to assess sustainability in relation to the thresholds are those produced by the new BWI DSF template[8]. The DSF methodology for calculating debt indicators is different from that used for HIPC as follows and as summarised in Table 3.
  - As the DSF focuses on total debt, the debt coverage includes public and publicly guaranteed external debt, private non-guaranteed and short-term external debt. However lack of comprehensive private sector and short-term debt data may preclude their inclusion in specific country DSF analysis. In principle the debt coverage also includes domestic debt; but in practice domestic debt is not as yet being incorporated into the DSF because of data and conceptual issues.
  - As the DSF analysis is forward-looking and done entirely in US dollars, the debt data are all converted into US dollars, using projected exchanges. As such the present value of debt is computed using a single discount rate, currently set at 5%, which approximates the US dollar CIRR rate. This uniform discount rate is to be adjusted if there are significant changes in US dollar interest rates[9].
  - The macro denominators are annual projections, not multi-year averages.
  - For post-HIPC countries, the external debt data entered into the DSF are to be after the delivery of maximum debt relief, irrespective of whether a country has concluded debt restructuring/relief agreements with all creditors.

As one of the key functions of the DSF is to analyse the risk of a country's future debt distress, it enables the user to run baseline and alternative scenarios. The alternative scenarios are designed to assess the impact on long-term debt sustainability of the following standard 'shocks' to the macroeconomy[10]:

- Real GDP growth at historical average minus one standard deviation
- Export value growth at historical average minus one standard deviation
- US dollar GDP deflator at historical average minus one standard deviation
- Net non-debt creating flows at historical average minus one standard deviation
- Combination of the above 4 events using one-half standard deviation shocks
- One-time 30 percent nominal exchange rate depreciation relative to the baseline.

In addition, it is proposed that there be an additional stress test incorporated into the DSF to analyse a country's vulnerability to short-term and private sector debt on a systematic basis.

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[8] The DSF template can be downloaded from www.worldbank.org and follow Home > Topics > Economic Policy and ... > Debt Sustainability Framework for Low-In...

[9] For more details on the DSF, see the papers listed on www.worldbank.org and follow Home > Topics > Economic Policy and ... > Debt Sustainability Framework for Low-Income Countries.

[10] For more details see *Debt Dynamics and Financing Terms: A Forward-Looking Approach to IDA Grant Flexibility*, November 2006 found on www.worldbank.org and following the links Home > About Us > IDA > IDA Replenishments > IDA14 Replenishment > IDA14 Mid-Term Review.

Table 3: Comparison of HIPC and DSF Debt sustainability Analyses

DSA Issues	HIPC	DSF
Debt coverage	External public debt	External public and private debt, domestic debt
PV calculations	CIRRs rates as discount rates	5% (approximating US$ CIRR) as discount rate
Currency of analysis	Loan currencies, converted to US $ at historical exchange rates	US $, converted using forecast exchange rates
Macro denominators	3-year average exports of goods and non-factor services, annual budget revenue	Annual projections of exports of goods and services, budget revenue and GDP
Treatment of debt relief	Assumes all creditors participate	Assumes all creditors participate
Risk assessment	No standard criteria - country-specific analysis	Baseline + standard strees tests (lower GDP growth, lower export growth, less concessional new debt, exchange rate depreciation)
Timing	Preliminary pre-HIPC, decision point and completion point	Annually as part of Article IV, new IMF agreements, World Bank CAS and new lending
Policy implications	To determine eligibility and amount of HIPC debt relief	To determine IDA and ADF loan-grant allocations, potentilally for policy advice and conditionalities

The DSF analysis is being conducted by the IMF as part of the annual Article IV consultations and at the time of a country's request for a new PRGF or PSI agreement. For the World Bank, the DSF is being used in the context of Country Assistance Strategies or major lending operations. Unlike the HIPC DSA process, there is no requirement that the DSF DSA be conducted on a tripartite basis, although the results are shared with Governments, and published on the IMF and World Bank websites[11].

The main policy implications of the DSF are as follows:

- For the World Bank, the debt distress ratings resulting for the DSF are the criteria used by IDA for grant allocations under IDA-14 (see below).
- For the IMF, there is a greater focus on the integration of debt issues into Fund analysis and policy advice, including recommendations on the minimum grant element and volume of new debt. In addition, the DSF results might result in changes to Fund programme design and conditionalities, relating to the present value of debt or limits on the fiscal deficit where debt sustainability is seen as a concern. The paper containing a country's DSF analysis may identify debt-related capacity issues, to be addressed through capacity building and technical assistance.
- The IMF has indicated that it views an annual increase in the ratio of the present value of public external debt or total debt to GDP of more than 5% - 7% would be an appropriate 'caution flag' of potential debt distress. In addition, there would be a need to conduct a detailed review of the DSF macroeconomic assumptions in cases, where the baseline scenario includes very large upfront borrowings or in which growth accelerations are critical to the avoidance of debt distress.
- The BWI agree that the analysis of debt distress, see below, should be on a case-by-case basis and take into account country vulnerabilities to private sector debt accumulation and domestic debt. In particular it has indicated that DSAs should flag situations where the inclusion of domestic debt would lead to a different debt distress rating.
- For low income countries, the BWIs objective is for Government's to use the DSF outputs and analysis as the basis for developing a country-owned medium-term public and external debt strategy (MTDS).

The DSF methodology tends to result in lower debt ratios than those based on the HIPC methodology, reflecting the methodological changes.

[11] For your country's latest DSA, go to http://www.imf.org/external/pubs/ft/dsa/lic.aspx.

How IDA Uses Debt Distress Ratings

Under IDA-14, eligibility for IDA grants[12] is determined solely on the basis of a country's debt distress rating, based on the debt indicators resulting from the DSF baseline and alternative scenarios[13]. In doing so IDA focuses on three ratios, PV/GDP, PV/exports and debt service/exports, and compares the country's debt ratios with the applicable threshold, reflecting the country's classification as a strong, medium or weak performer.

The BWI determines a country's debt distress rating by comparing the baseline and alternative scenario, or stress test, debt indicators with the appropriate thresholds and the classification of low, moderate, high or debt distress is based on the outcomes as shown in Table 4 below. For example, a country is classified as having a low risk of debt distress, if all its baseline and alternative debt ratios are below the thresholds for projection period. On the other hand, a country is classified as high risk of debt distress if one or more of its debt ratios breach the thresholds in the baseline scenario and the situation worsens over time in the alternative scenarios.

Table 4: Determining Debt Distress Ratings

Risk	Baseline	Stress tests	Debt servicing
Low	All indicators below thresholds	All indicators below thresholds	No arrears
Moderate	All indicators below thresholds	Breach of service &/or stock ratios over time	Sporadic arrears
High	Breach of service &/or stock ratios over time	Worse breaches over time	Sporadic arrears &/or history of default
Debt distress	Significant or sustained breach of service &/or stock ratios		Significant arrears and risk of default unless restructuring

While Table 4 illustrates the main rules for determining debt distress ratings, the BWI staff also take into account vulnerabilities relating to domestic and private sector debt and so the result does reflect case-by-case interpretation and judgment.

A country's debt distress rating is then used to determine its IDA grant eligibility, on the basis of the 'traffic light system' as shown in Table 5. A country classified as having a low risk of debt distress will not be eligible for grants under IDA-14 and will receive its full allocation as IDA loans. The premise is that countries with low risk of debt distress can shoulder higher debt burdens and therefore they are not eligible for IDA grants. A high risk country will receive only IDA grants, and as a result new money from IDA will not be adding to its prospective high level of debt. Countries with moderate risk of debt distress will receive 50% IDA loans and 50% IDA grants.

Table 5: IDA Traffic Light Allocation for Grants and Loans

Traffic light	Debt distress classification	IDA allocation
Green light	Low risk	100% loans
Yellow light	Moderate risk	50% loans, 50% grants
Red light	High risk to debt distress	100% grants

However a country eligible for IDA grants will not receive the IDA-14 allocation, instead the amount of new IDA money it is to receive will be reduced by 20%. This 20% 'volume' reduction is applied to countries receiving grants in order to compensate IDA for the foregone service charges by the switch

[12] Blend and gap countries are not eligible for IDA grants. Post-conflict countries that are eligible for exceptional post-conflict IDA allocations would receive limited grant financing to support recovery efforts during the pre-arrears clearance phase.

[13] For countries for which forward-looking DSF debt indicators are not yet available, IDA uses historical indicators. See Assessing Implementation of the IDA-14 Grants Framework, October 2006 for more details of the 'snapshot' approach, available from www.worldbank.org, Home > About Us > IDA > IDA Replenishments > IDA14 Replenishment > IDA14 Mid-Term Review.

from loans to grants and to enable a redistribution to IDA-only countries to help achieve the MDGs[14]. So this means that countries eligible for the 100% of their IDA-14 allocations as grants will receive disbursements equivalent to 80% of their IDA-14 allocation. Countries classified as yellow light will face a 10% volume reduction with respect to their total allocation. Table 6 lists the IDA-14 loan-grant allocation for HIPC countries, based on the traffic light system, for FY06 and FY07.

For many countries the actual IDA debt distress ratings and grant-loan allocations for FY 2006 were based historical debt indicators as DSF indicators were not available for these countries. However, IDA will be using DSF indicators as they become available. To mitigate against relatively large fluctuations in a country's IRAI rating, the debt distress rating will be updated annually on the basis of based on 3-year moving average IRAI score.

Table 6 shows how a country's IDA allocation can affected by a change in its IRAI rating, for example Burkina Faso moved to 100% loan allocation when its IRAI rating improved from a medium to strong performer, and by changes in its debt and/or macroeconomic performance.

4. Regional Debt Indicators

One of the common convergence criteria for regional integration is the ratio of debt to GDP. This is largely based on the European Union which has a ceiling on nominal debt stock to GDP of 60%. Other regional organisations such as the Andean Community, West African Monetary Zone (WAMZ) and UEMOA have established limits or guidelines for total public (external and domestic) debt to GDP in the range of 60% - 70%. In addition, the UEMOA has also set an informal guideline on its members states for total debt service/ budget revenue of 15%.

5. National Debt Indicators

To date most countries have not established debt indicators and threshold to be monitored nationally, instead they have been using the HIPC indicators and thresholds. However, in a post-HIPC environment, it is appropriate for countries to determine which debt indicators they want to monitor and to establish national thresholds against which they are to be measured. The national thresholds may be the same as those being used internationally or they could be lower to reflect national priorities.

While almost all countries have minimum grant elements to ensure only concessional new borrowings, as part of a PRGF and/or PSI programme agreed with the IMF, some have gone further and set higher grant element requirements. For example, the Government of Tanzania has revised its loan act such that the Government is prohibited from borrowings on terms with less than 50% grant element.

An alternative approach is for the Government to analyse how much new debt new debt it needs, and can absorb, to fund its poverty reduction and development plans and maintain long-term debt sustainability. For example the Government of Rwanda has set an annual new borrowing ceiling equivalent to US$ 50 million in PV terms.

[14] This reallocation is done according to the World Bank's Performance Based Allocation (PBA) system. This mix of grants and loans in a country's reallocation will be determined by the traffic light system, with no further discount applied for those receiving grants.

Table 6

Table 6: IDA 14 Grant Allocations of HIPCs					
	Debt distress ranking			Grant allocation FY07	Reason for changes
	IDA-14 negotiations	FY06	FY07		
Strong (CPIA = >3.75)					
Burkina Faso	Yellow	Green	Green*	0%	Moved from medium to strong performer on IRAI
Ghana	Green	Green	Green	0%	Moved from medium to strong performer on IRAI, no change in traffic
Honduras [1]				0%	
Senegal	Yellow	Green	Green	0%	Moved from medium to strong performer on IRAI
Tanzania	Green	Green	Green*	0%	
Uganda	Yellow	Yellow	Green*	0%	Impact of MDRI in FY07 DSA
Medium (3.25<CPIA<3.75)					
Benin	Green	Yellow	Green*	0%	Impact of MDRI in FY07 DSA
Bolivia [1]				0%	
Cameroon	Red	Red	Green*	0%	Impact of MDRI in FY07 DSA
Ethiopia	Red	Yellow	Yellow*	45%	Debt indicators indicate green for FY06 - 07, but vulnerable to shocks
Guyana	Red	Red	Yellow*	45%	Impact of MDRI in FY07 DSA
Kenya	Yellow	Green	Green	0%	Impovement in exports
Kyrgyz Rep [2]	Red	Red	Red	100%	
Madacasgar	Green	Green	Green*	0%	
Malawi	Red	Yellow	Yellow*	45%	Impact of MDRI in FY07 DSA
Mali	Red	Green	Green*	0%	Lower debt stock
Mozambique	Green	Green	Green	0%	
Nepal [2]	Green	Yellow	Red*	100%	Worsening debt ratios
Nicaragua	Yellow	Green	Yellow*	45%	Improvement in IRAI rating in FY06, then worsening IRAI in FY07
Niger	Red	Green	Red*	100%	Despite MDRI worsening debt ratios in FY07 DSA
Rwanda	Red	Red	Red*	100%	
Zambia	Red	Yellow	Green*	0%	Impact of HIPC relief and MDRI in DSAs
Weak (3.25< = CPIA)					
Angola	Red	Red	Yellow*	45%	DSA indicates moderate not high risk
Burundi	Red	Red	Red*	100%	
Central African Rep	Red	Red	Red*	100%	
Chad	Red	Red	Red*	100%	
Comoros	Red	Red	Red	100%	
Congo DR	Red	Red	Red	100%	
Congo Rep	Red	Red	Red	100%	
Cote d'Ivoire	Red	Red	Red	100%	
Eritrea [2]	Red	Red	Red	100%	
Gambia	Red	Red	Red	100%	
Guinea	Red	Red	Red*	100%	
Guinea-Bissau	Red	Red	Red	100%	
Haiti	Red	Red	Red	100%	
Liberia	Red	Red	Red	100%	
Mauritania	Red	Green	Green*	0%	Moved from medium to weak performer in FY06, but oil production improved debt ratios
Sao Tome & Principe	Red	Red	Red	100%	
Sierra Leone	Red	Red	Red	100%	
Sudan	Red	Red	Red	100%	
Togo	Red	Red	Red	100%	

* Rating based on DSF DSAs.
1 Blend or hardened country and therefore not eligible for IDA grants
2 Potential HIPC
Source: IDA