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Minimizing the Impact of Commodity Shocks in Africa for Debt Sustainability

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Executive Summary

HIPC countries generally depend on a small number of primary commodities for their export revenues, making them vulnerable to volatility and downwards movements in prices. These countries are also vulnerable to movements in import prices as well as other shocks including those arising from climate and conflict factors. These vulnerabilities have had a major adverse impact on countries' macroeconomic performance and debt profiles. Various policy options for mitigating the impact of these shocks are explored. These include insurance and hedging schemes. In the context of Africa these face a number of market failures which need to be overcome if these approaches are to be feasible.

Proposal for the creation and strengthening of forward commodity markets —

Forward markets offer a useful method for commodity risk management. However, they face problems of contract enforcement and asymmetric information between traders and producers. One way of overcoming these problems would be through the establishment of a central institution such as a marketing board which could enforce contracts and provide transparent information to market participants. The time has come to consider the re-establishment of these kinds of organizations.

Proposal for the provision of official contingency financing —

Market based mechanisms for commodity risk management will need to be supplemented with official financing to support countries suffering from terms of trade shocks. HIPC countries currently have minimal access to this kind of finance. Such financing needs to be set aside up front so that disbursement can take place quickly for countries suffering from shocks.

Minimizing the Impact of Commodity Shocks

I. Introduction

It is well known that primary commodities are subject to extreme price fluctuations. Cocoa prices, for example, fluctuated between 60% and

170% of the average price between 1983 and 1997, and robusta coffee from 40% to 195%. In addition, there has been a *secular downward trend* for commodity prices for a considerable period of time, and particularly since the 1970s, leading to deteriorating terms of trade for commodity exporting countries.¹ Most African HIPCs are vulnerable to such commodity shocks due to the high commodity composition of exports and high dependency on a few primary commodities for their merchandise export earnings. Unstable export earnings caused by export price volatility and deteriorating terms of trade, in turn, lead to instability of government revenues and problems with debt sustainability.² Such export price fluctuations are considered to be at the heart of many African countries' failure to exit the debt trap.

The share of commodities in the total merchandise export earnings of HIPCs averages about 84%. 14 HIPC countries generate more than 90% of their export earnings from a few commodities like coffee and cocoa. In addition to high volatility, primary commodity prices have reached historical lows in recent years. In 2002 robusta coffee prices fell to nominal lows not seen since the 1960s, while cotton prices are equal to their levels in the mid-1970s. Other commodities have not fared much better.

Problems facing African HIPCs include not only the severity of commodity shocks but also the high frequency of other multiple exogenous shocks. Evidence shows that more than 20 African HIPCs have suffered at least three of shocks related to climate, exports, imports, budget revenue, and aid. In general, low-income countries have a higher incidence of shocks compared to other developing countries and tend to suffer larger costs when they occur.³ This issue paper puts forward proposals for African countries to mitigate the impact of commodity shocks. The structure is as follows. Section II discusses shocks to African HIPCs - incidence, vulnerability and causes. Section III assesses the economic impact of shocks, and section IV focuses on general policy considerations. Section V proposes solutions.

¹ Cashin and McDermott (2002) shows that the Fund's non-fuel commodity price index declined in real terms by 25-40 percent from the 1960s to the 1990s.

² According to Dodhia (2003), export volatility as measured by the standard deviation from the trend averaged 15 percent for all 26 (HIPC) decision point countries over the period 1990-99.

³ Evidence shows that low-income countries are also more vulnerable to *commodity price shocks* than are other developing countries, and that such shocks occur more frequently in low-income countries. For further see three indices of vulnerability -- UN (2000), Commonwealth (by Atkins and others, 2000), and Caribbean Development Bank (by Crowards, T. 1999).

II. Commodity Shocks on African HIPCs: incidences, vulnerability and causes

Shocks to Exports: The prices of primary commodity export goods exhibit a very *high degree of volatility*. World Bank (1999) shows that the prices of many commodities fluctuated from below 50 percent to above 150 percent of their average prices during 1983-1998.

Given the volatility and downward trend of export prices, the majority of African HIPCs appear highly vulnerable to commodity shocks because of their dependence on commodity exports. Table 1 shows key indicators of vulnerability and volatility of African HIPCs related to commodity shocks using ten year data. As Table 2 shows, 14 African HIPCs are extremely vulnerable to primary commodity shocks by having more than 90% of their exports in such commodities. 15 African HIPCs have export dependence on one commodity of more than 50% of export revenues (Table 3).

Exports have been highly variable for most African HIPCs. Standard deviation as a percentage of the mean level has averaged 26% for all HIPCs. It has exceeded 20% for 27 HIPCs for which information is available. ESAF/PRGF programme documents (which examined for 30 of 36 HIPCs) indicate persistent shortfalls of exports compared to projections, particularly for non-traditional exports as well as traditional commodity exports – in contrast to the optimistic projections of BWI about the effects of adjustment on export growth.

Cause of price volatility and vulnerability: A small change in quantities demanded would result in a larger change in prices because primary products have low price elasticities of demand. Moreover, given the high concentration of African exports on a few primary commodities, a swing in the price of an export item would amount to a large fluctuation in total export earnings.

Vulnerability in many cases has been magnified over time by policy choices that have failed to encourage diversification of output and exports. The *associated policy responses* to shocks have also contributed to the accumulation of unsustainable external debt in many African countries. On the one hand, unsustainable debt has been caused by inadequate policy measures by indebted countries. On the other hand, the modalities of donor financing have worsened debt sustainability because finance was provided mostly in the form of loans rather than grants.

Apart from export composition and export concentration, *market barriers* including agricultural subsidies in the industrialized economies aggravates the volatility of export earnings in Africa. The counter-cyclical nature of most agricultural subsidies insulates farmers in high-income countries from changes in world prices and makes production less responsive to swings in demand.⁴ As a result, world commodity prices become more volatile, and during downturns the burden of adjustment is shifted disproportionately to producers in developing countries.

Shocks to imports: African countries are also highly dependent on imports with 27 African HIPCs having import/GDP ratios exceeding 25% (Table 4). Although imports have been considerably less volatile than exports and aid flows, with mean standard deviation of only 21%, 18 HIPCs have suffered high volatility in the last ten years (standard deviation over 20%).

The composition of imports matters for debt sustainability, in particular for low income African countries which have a high dependence on food and fuel imports. The import demand for these commodities are generally the least price elastic and therefore most subject to international price shocks. The International Task Force on Commodity Risk has indicated that food accounts for more than 20% of merchandise imports in 16 HIPCs. According to ESAF/PRGF Board papers, the vast majority of HIPCs have also been subject to import excesses over projections. This has been particularly the case for oil imports in 1999-2000. This shows that projections were too optimistic about the effects of adjustment programmes on reducing import demand, partly because they wrongly assumed that price effects through devaluation would reduce demand.

Other relevant exogenous shocks: While commodity price shocks are the most common and severe exogenous shocks directly related to debt sustainability of African countries, there are other types of exogenous shocks that can also impact on debt sustainability (either directly or indirectly). Other shocks suffered by African countries that exacerbate poverty include climatic shocks (mostly drought), the HIV/AIDS pandemic, fluctuations in aid, low foreign reserves, and conflict. For example, at least 16 African HIPCs have suffered from climatic shocks in the last ten years; 28 HIPCs have been vulnerable to aid shocks, as

⁴ However, direct income payment to farmers such as EU's CAP reform is less market distortionary subsidy, and hence reduce trade distortion from developing countries.

measured by aid dependency (aid/GDP ratio over 10%) in the last ten years; 32 countries have had reserves lower than 4 months of imports of goods and services.

III. Assessment of the Impact of Shocks

Negative terms-of-trade shocks directly reduce real income and the resources available for investment and consumption. The evidence on the adverse effects of terms-of-trade shocks on economic growth is also strong. Of particular interest is the finding that the effects of negative terms-of-trade shocks on the rate of growth of GDP, can be very large.⁵ Recent estimates (IMF 2003, and Collier and Dehn 2001) show that for developing countries, negative price shocks led on average to a direct loss of income ranging from 3.5 % to 6.8 % of GDP.

Terms-of-trade shocks can also have a significant impact on fiscal (and external) balances and debt. Government revenues can be directly affected by terms of trade shocks if export products are a significant source of tax revenue. Other exogenous shocks (especially climatic shocks) also have indirect effects that reverberate throughout the economy affecting output, investment, and debt. The time path and the size of the impact will depend on the nature of the shock, its size and duration, and the structure of the economy, including its degree of diversification.

Evidence from ten low-income countries indicates that external factors such as terms-of-trade shocks and adverse weather conditions played an important role in creating debt problems. An analysis of debt dynamics shows that an 11 percent decline in export earnings in 1999/00 added 20 percentage points to Uganda's NPV of debt-to-exports ratio that year.⁶ Evidence from an analysis of six African countries (Benson and Clay, 1998) showed that the 1991-92 drought caused declines in real GDP by amounts ranging from 2 percent in the relatively diversified economy of South Africa to over 8 percent in the agriculture -dominated economy of Malawi.

⁵ Collier and Dehn (2001) show that, for a sample of cases where the direct income loss from negative export price shocks averaged 6.8 percent of GDP in the year of the shock, the loss of income through the reduced growth channel over a four-year period amounted to about 14 percent of initial output.

⁶ See IMF (2003) and IMF (1998).

Box 1
Impacts of Exogenous Shocks: Evidence from
three African Case Studies

Recent case studies (IMF 2003) assess the impacts of exogenous shocks on Mali (export price shock, 1992-93), Uganda (export price shock, 1987-92) and Zimbabwe (drought, 1992).

Fiscal Impact and Debt: The case studies show that both terms-of-trade shocks and natural disasters can have a large adverse impact on **government revenue**. For example, the drought in Zimbabwe was one of the primary factors behind the 2.4% decline in the ratio of government revenues to GDP over the subsequent two years. In addition, government expenditure was higher than programmed in the period after the shocks in these countries. Consequently, the **fiscal deficit** increased in all cases, both in absolute terms and relative to programme. Countries whose fiscal deficits were financed mostly with grants and that had strong donor support before the shocks were able to adjust and recover more quickly. In all three cases, additional government borrowing was necessary and the government's external debt increased relative to GDP.

Balance of Payments and Debt: In all three cases, the **trade balance** worsened in the period after the shock. Exports declined either because of lower export prices (Mali, Uganda) or lower export volumes (Zimbabwe). In all three of the natural disaster cases, the shocks also resulted in higher imports to compensate for lost production and for reconstruction, heightening the impact on the trade and current account. The increased current account deficits were instead financed mainly with **higher borrowing**. In Mali, Uganda, and Zimbabwe, external borrowing increased significantly. Zimbabwe's increased borrowing included significant amounts of non-concessional loans. In each of these three cases, the result was a sharp rise in external debt to GDP.

Source: IMF (2003)

IV. General Policy Considerations

The best way to deal with shocks is to reduce the vulnerability of the economy through policy reforms, and to mitigate their impact when they occur by implementing carefully designed policies. Evidence shows that a strong policy response by governments to exogenous shocks can help avoid a lasting adverse impact on the debt burden.⁷ The strengthening of institutions and building up policy-making capacity will be important to this process.

⁷ Brooks and others (1998) concluded that a good record of policy implementation in Ghana and to a lesser extent in Uganda, helped keep the external debt at manageable levels, in contrast to the experience in Cameroon, Niger and Zambia.

Policies for dealing with commodity and terms-of-trade shocks can be categorized into two sets of actions – *preventative actions and mitigating actions*. While preventative actions aim at reducing the probability of a terms-of-trade shock, mitigating actions are designed to minimize the impact of shocks once they occur.

Preventative actions for commodity shocks are few, since most low-income countries are price takers in international markets. The most effective preventative action is *diversification of the country's export base*, so that volatility in the price of a few commodities does not constitute a terms-of-trade shock for the country. Despite its importance, the issue of diversification will not be discussed further because this paper focuses primarily on mitigating actions. Although many African countries have exerted efforts to diversify their production and export bases, success is likely to take a long time.

Self-insurance schemes are an important ex-ante mitigating mechanism for terms-of-trade shocks. These include the mobilization of public and private savings, the accumulation of official foreign exchange and food reserves, and schemes such as price stabilization funds, marketing boards and buffer stocks. Public and private savings are important for consumption smoothing. Adequate reserves cushion the country against accumulating external debt. Building adequate reserves of foreign exchange is also useful in preventing imports from having to decline too sharply as export revenues shrink. Social safety nets may be crucial in limiting the income loss suffered by rural populations.⁸

⁸ A few African countries, such as Uganda and Mali, have had procurement agencies that guaranteed a price floor to producers. This mechanism provides relief to vulnerable sections of society in the case of short-lived shocks, but cannot be sustained indefinitely for shocks of a longer duration.

Box 2
Failure of Buffer Stock Stabilization

Many international commodity agreements (ICAs) have been established to reduce price volatility through buffer stock operations and to reverse the steadily falling terms of trade through the mechanism of supply management.¹ However, these international buffer stocks have usually proved to be ineffective mechanisms for stabilizing commodity prices. Any modest price stabilization achieved has typically been outweighed by the interest and carrying costs of the buffer stock. Thus, most of these agreements have been abolished, leaving behind a depressed market. Along with the problem of lack of resources, most of the ICAs simply tried to keep the prices high instead of focusing more on stabilization of the price around its actual trend. Moreover, diverging interests of members with different production costs, market shares and funding capabilities, made it difficult to agree on export quotas and control.

Most of these programmes, however, are not feasible solutions for many African countries given their low-income level and limited export earnings. Buffer stocks and stabilization funds have proved difficult to manage, and pressures on the authorities may be such that it is difficult to save the surpluses in good years to use in bad years. Social safety nets are typically inadequate, and the poorest segments of the population may be living so close to the subsistence level that they are unable to save to tide themselves over a shock.

Another approach to reducing vulnerability are insurance mechanisms. This market-based risk management approach includes a variety of insurance services and a range of capital market instruments such as future and option contracts, catastrophe bonds, and weather derivatives. Since the poor are especially prone to suffer from shocks, explicit or implicit insurance may be considered an important form of pro-poor expenditure. This market, however, is dominated by large corporations, government monopolies, and developed countries. Small farmers in poor countries have limited access to insurance against price volatility. Insurance markets are not fully developed for many of the products that would be of most use to African countries for managing risk. For example, weak financial markets in many African countries adversely affect the cost and availability of products for risk management, and make it more difficult for these countries to access international insurance markets.

Box 3
Compensatory mechanism: Limitation of assistance programme

There have been two major compensatory financing programmes for terms-of-trade shocks. One is the **European Commission's Stabex and Sysmin** (until 2000) and the new **B Envelope funding**. The other is the **IMF's Compensatory Financing Facility (CFF)**. The objective of the EC's instruments was to remedy the harmful effects of export earnings instability and thus to help sustained growth of the economies of the ACP countries.¹ Although Stabex constituted a useful instrument for making transfers to a number of the ACP countries until it was replaced by the Cotonou Agreement (2000), it was subject to many criticisms. Drawbacks of the instrument included: (i) coverage of only four products (coffee, cocoa/copra, groundnuts, and cotton); (ii) coverage of only five countries; (iii) serious shortage of funding since the 1980s; and (iv) delayed disbursement of 12 months to 4 years for observing information on export earnings.¹ However, the EC has started a more flexible compensatory financing programme (FLEX) that provides general budget support instead of sector-specific assistance, which is likely to reduce delays in disbursements of aid.

The IMF's **Compensatory Financing Facility (CFF)** provides financing to members experiencing balance of payments difficulties resulting from a temporary shortfall in export earnings or an excess in cereal import costs. The Contingency Financing Facility was added (in 1988) to finance unforeseen adverse external shocks. This Facility, however, lasted a fairly short time only until 2000. The Compensatory Facility (CFF) has not appealed to low-income countries due to its non-concessional financial terms which would breach the concessional borrowing ceilings that are standard in PRGF programmes.

Hedging Instruments have become more important in recent years, as government-managed schemes such as buffer stocks and commodity cartels have been displaced by more market-oriented mechanisms for commodity risk management (UN 2000, World Bank ITF 1999). Commodity price fluctuations can be mitigated by long-term sales contracts or by the use of forward markets (to the extent that such markets exist). Two available instruments are forward and futures contracts. In general, however, non-corporate agents in commodity-dependent low-income countries have little or no access to price risk management instruments. This is especially true for agricultural producers.

V. Proposals for the way forward

5.1 Creation and Strengthening Forward Commodity Markets

As non-market based schemes such as buffer stocks and stabilization funds have largely failed, market-oriented mechanisms become important for commodity risk management in many developing countries. Yet, market-based mechanisms for mitigating these risks are not widespread in African countries. Given that forward contracts are

an important means of commodity risk management, African countries may want to develop mechanisms to facilitate forward markets.⁹ In this vein, we propose the creation and strengthening of forward markets and commodity price insurance schemes in Africa to mitigate risks associated with commodity price fluctuations.

However, the facilitation of forward markets in Africa needs to overcome the problem *market failure*. Two sources of *market failure* are often cited as reasons behind the absence of forward markets in commodities in Africa.

Enforcement problems: Forward markets work only if contractual agreements can be enforced. For example, if an exporter enters into a forward contract to sell commodities in three months time at an agreed price, and then finds at the time of sale that the agreed price is lower than the going market price, he has an incentive to default. Therefore, mechanisms for contract enforcement are key to the successful operation of forward markets.

Asymmetric information: Most farmers are poorly informed about market prices (due to lack of skills and high search costs), and are therefore at a disadvantage in their transactions with traders who are likely to be better informed. Traders thus have an incentive to cheat farmers and reap excess profits. Moreover, this information asymmetry is likely to widen when future prices are involved as farmers have even less information for prediction. Empirical evidence corroborates both this asymmetry and its exploitation by traders. Consequently, farmers have no incentive to enter into forward contracts, and would rather conduct transactions on the basis of present prices.

Marketing boards: One way of overcoming these problems is through marketing boards type arrangements. Marketing boards act as the sole purchaser of crops from farmers. Through pre-announced prices to farmers, marketing boards enable forward sales to occur between overseas buyers and the marketing board. The board can act as a single entity in entering into forward contracts and is normally backed up by government guarantees. This way it avoids enforcement problems. Asymmetric information problems are also minimized because

⁹ Forward contracts are agreements to purchase or sell a specified amount of a commodity on a fixed future date at a predetermined price, thereby eliminating price-related risk for both buyer and seller. Forward contracts are widely used for most commodities in all regions. For instance, a large part of the world's cotton is traded through three- to twelve-month forward contracts. Ghana sells a large part of its cocoa forward. Following a World Bank program, two-thirds of Côte d'Ivoire's cocoa crop was sold forward from 1992 onwards. Colombia sells most of its coffee through one-year forward contracts with coffee roasters.

marketing boards can afford to have a centralized unit of experts that monitor price developments for commodities. Therefore, these boards can successfully hedge risks arising from commodity price fluctuations. Apart from providing this type of hedging service, marketing boards also extend credit to producers, distribute agricultural inputs such as fertilizer and pesticides, and provide market information to farmers.

With rapid liberalization of agricultural markets and the abolition of marketing boards, the difficulty of enforcing forward contracts has come to the fore. The time has come to consider re-establishing marketing boards type arrangements.

5.2 Provision of Contingency and/or Grant Compensatory Financing

In the presence of frequent multiple shocks that hit most African HIPCs, it is hard to envisage that risk management products or insurance schemes alone would be able to provide comprehensive protection without prohibitive cost. In this light, the onus falls on the official financing system to provide mechanisms which can supplement commercial systems of shock prevention. Coordinated action against all shocks, rather than piecemeal action against individual risks, would seem to be the most effective approach.

Given this background as well as the findings from cases studies (Box 1), it is essential that international institutions provide contingency financing against shocks. HIPCs currently have virtually no access to such compensatory financing from international institutions. The IMF Contingency Credit Line (CCL) is not available to countries that are borrowing any other IMF facility (as all HIPCs applying for relief are). Although the EU's "B Envelope" funding is much more flexible than previous facilities, it is still too restrictive.

Building on the precedent created by this EU facility, a top priority for the international community should be to establish a contingency financing element in all PRGF programmes (on PRGF lending terms), based on vulnerability indices, which could be disbursed immediately in the event of external shocks to keep financing for poverty reduction at sustainable levels. It would be desirable to coordinate existing facilities such as that of the EU with any new facility to provide one overall source of support.

In order to ensure the effectiveness of contingency financing, it would preferably be set aside up front, as genuine financing against contingencies, rather than after the shock when its negative effects on the economy have already been felt. To provide a basis for such up front financing, the BWI Boards would be presented with two sets of economic projections: the “*base case*” and a realistic “*low case*”, allowing for shocks which would probably hit the balance of payments. The contingency financing window would be committed up to levels to keep debt sustainable in the event of the low case occurring. The funds representing the extra financing needed for the low case scenario could be put into a contingency account and disbursed immediately following shocks when these materialize. Such a solution would provide immediate, low-cost financing and guarantee protection against all but the most extreme and genuinely unforeseeable shocks, removing the risk that any HIPCs debt might become unsustainable

Issues for Consideration:

1. How to enforce the contractual agreements of forward markets in Africa in the absence of efficient courts (and the asset poverty of producers)?
2. How to establish an information network in Africa to solve the problem of asymmetric information in commodity prices in order to enable market-oriented measures for commodity shocks? In other words, how can farmers in Africa be better informed about prices, in particular, future prices?
3. What would be a viable internationally-coordinated system (under the spirit of the new partnership stipulated in the NEPAD) which could provide immediate disbursement in the event of commodity shocks to keep financing for poverty reduction at sustainable levels?
4. For an effective provision of contingency financing (from the IFIs), it is essential for African countries to participate. How should the participation of African countries in assessing the impacts of commodity shocks be ensured?

Table 1: Indicators of vulnerability by type of shock

| Country Name | Aid | Climate | Exports | Imports | Reserves | Revenues |
|----------------------|------|-----------|---------|---------|----------|----------|
| Angola | v | | x v | d v | c v | \$\$ |
| Benin | ♦ v | ☀ | x v | d | c v | \$\$ |
| Bolivia | ♦ | ☀? | v | v | v | |
| Burkina Faso | ♦ v | ☀ | x | | | |
| Burundi | ♦ v | | x | v | v | |
| Cameroon | v | | | | c v | |
| Central African Rep. | ♦ v | | | v | v | |
| Chad | ♦ | ☀ | x | d | c v | |
| Congo, Dem. Rep. | v | | v | d v | c v | |
| Congo, Rep. | v | | x | d | c v | n.a. |
| Cote d'Ivoire | v | | | d | c v | \$\$ |
| Ethiopia | ♦ v | ☀ | x v | v | c v | \$\$ |
| Gambia, The | ♦ v | ☀ | | d | | |
| Ghana | ♦ | ☀ | x v | d v | c v | |
| Guinea | ♦ v | | | | c v | |
| Guinea-Bissau | ♦ v | | x v | d | c v | \$\$ |
| Guyana | ♦ v | !!! | | d | c | \$\$ |
| Honduras | v | hurricane | v | d v | c v | n.a. |
| Kenya | ♦ v | | | d v | c v | |
| Lao PDR | ♦ | !!! | x v | d v | c v | n.a. |
| Liberia | n.a. | | x | n.a | c v | n.a. |
| Madagascar | ♦ v | Cyclone | v | | c v | |
| Malawi | ♦ v | ☀ | x | d v | c v | |
| Mali | ♦ v | ☀ | | d | v | |
| Mauritania | ♦ v | | x | d | c v | |
| Mozambique | ♦ v | ☀!!! | v | d | c v | |
| Myanmar | n.a. | | | v | c v | n.a. |
| Nicaragua | ♦ v | hurricane | v | d v | c v | |
| Niger | ♦ v | ☀ | | v | c v | |
| Rwanda | ♦ v | | v | v | c v | \$\$ |
| Sao Tome & Princ. | ♦ v | | x | d | c v | \$\$ |
| Senegal | ♦ v | ☀ | | d | c v | |
| Sierra Leone | ♦ v | | v | | c v | \$\$ |
| Somalia | n.a. | ☀ | n.a. | n.a. | c v | n.a. |
| Sudan | v | ☀ | | n.a. | c v | |
| Tanzania | ♦ v | ☀!!! | v | d | c v | |
| Togo | ♦ v | ☀ | | d v | c v | \$\$ |
| Uganda | ♦ v | | x v | v | c v | \$\$ |
| Vietnam | v | !!! | v | d v | c v | |
| Yemen, Rep. | v | | x v | d | c v | \$\$ |
| Zambia | ♦ v | ☀ | x | d | c v | |

Notes:

- Aid: dependency 10% or more of GDP represented by **diamond**; volatility **v** is where the GNP ratio has a standard deviation of 20% or over.
- Climate: sun refers to drought, and exclamation marks (!!!) to heavy rains or floods
- Exports: **x** refers to export concentration (where commodity provides over 50% of export revenues); **v** is for countries with a standard deviation of export levels of over 20%
- Imports: **d** refers to import dependence (imports to GDP ratio of 30% or over); **v** is for countries with a standard deviation of import levels of over 20%:
- Reserves: **c** refers to import coverage (international reserves under 4 months of imports of goods & services); **v** is where standard deviation of import coverage is 20% or over.
- Revenues: **\$\$** refers to volatility of government revenue excluding grants (for countries with a standard deviation of 20% or over

Table 2: HIPC Dependence on Commodity Exports ¹

| Country Name | Leading commodities | commodities as % of merchandise exports (1997) |
|----------------------|--------------------------------------------------|------------------------------------------------|
| Angola | fuels | 97.7 |
| Benin | cotton, fuels | 95.4 (1996) |
| Bolivia | metals, natural gas, soybeans, wood | 84.1 |
| Burkina Faso | cotton | 73.7 |
| Burundi | coffee, tea | 95.7 |
| Cameroon | fuels, wood, coffee | 92 |
| Central African Rep. | wood, live animals, cotton | 57.4 |
| Chad | cotton, meat | 99.8 |
| Congo, Rep. | fuels, wood, sugar | 97.3 |
| . | cocoa, fuels, wood | 70 |
| Ethiopia | coffee | 88.8 |
| Ghana | cocoa, aluminium, wood | 92.3 (1992) |
| Guinea | bauxite, aluminium | 82.5 |
| Guinea-Bissau | nuts, fishery | 96.7 * |
| Guyana | sugar, rice, bauxite | 61 |
| Honduras | banana, coffee, fishery | 72.5 |
| Kenya | tea, coffee, fuels | 74.7 |
| Lao, PDR | wood, live animals, coffee | 71.3 (1996) |
| Madagascar | coffee, vanilla, cloves, shellfish, sugar | 72.1 |
| Malawi | tobacco, tea, sugar | 92.7 |
| Mali | cotton, gold | 83.9 |
| Mauritania | iron ore, fishery | 99.9 |
| Mozambique | fishery, nuts, cotton | 83.3 |
| Myanmar | wood, pulses, rice | 89.6 (1991) |
| Nicaragua | coffee, seafood, meat, sugar, gold, banana | 75.4 |
| Niger | uranium, livestock | 97.6 (1996) |
| Rwanda | coffee, tea, tin ore | 97.7 |
| Sao Tome & Princi. | cocoa, copra, coffee | 99.9 |
| Senegal | fish, nuts, petroleum, phosphates, cotton | 43.4 * |
| Sierra Leone | diamonds, rutile, cocoa, coffee, fish | 57.8 (1996) |
| Somalia | live animals, fishery, bananas | 95.5 |
| Sudan | cotton, animals, sesame seeds | 97.2 |
| Tanzania | coffee, cotton, cashew, minerals, tobacco | 78.2 |
| Togo | phosphate rock, cotton, coffee | 80.5 |
| Uganda | coffee, cotton | 70.7 (1996) |
| Vietnam | crude oil, marine products, rice, coffee, rubber | 63.7 (1996) |
| Yemen, Rep. of | fuels | 99.4 |
| Zambia | copper, zinc | 88.5 |

1/ Table 3, p.82, *Dealing with commodity price volatility in developing countries*, International Task Force on Commodity Risk Management in Developing Countries, World Bank, September 99.

2/ Missing: ~~Congo DR, Gambia, Liberia~~

* Share of three top exports in total exports

Table 3: HIPC Concentration & Volatility of Exports

| | Main Product (1) | Percent share in exports (2) | Three main products (3) | Variability of exports (4) |
|----------------------|------------------|------------------------------|-------------------------|----------------------------|
| Angola | Crude Oil | 85.2 | 97.4 | 23% |
| Benin | Cotton | 84.4 | over 90 * | 24% |
| Bolivia | Zinc | 14.1 | 37.9 | 24% |
| Burkina Faso | Cotton | 63.5 | 82.5 | 14% |
| Burundi | Coffee | 79.7 | 96.9 | 25% |
| Cameroon | Crude Oil | 31.6 | 51.1 | 10% |
| Central African Rep. | Diamonds | 42.5 | 80.3 | 12% |
| Chad | Cotton | 50.9 | 82.3 | 20% |
| Congo, Dem. Rep. | Copper | 24.2 | 33.7 | 30% |
| Congo, Rep. | Crude Oil | 84.6 | 87.0 | 20% |
| Côte d'Ivoire | Cocoa | 37.0 | 52.5 | 20% |
| Ethiopia | Coffee | 59.3 | 79.6 | 28% |
| Gambia, The | Cashew | 10.0 | ? | 18% |
| Ghana | Gold | 32.9 | 70.8 | 28% |
| Guinea | Bauxite | 48.9 | 75.3 | 11% |
| Guinea-Bissau | Groundnuts | 94.0 | 96.7 | 38% |
| Guyana | Gold | 23.1 | 60.6 | 15% |
| Honduras | Coffee | 21.3 | 44.9 | 35% |
| Kenya | Tea | 20.5 | 42.1 | 18% |
| Lao PDR | Wood | 54.0 | 92.9 | 58% |
| Liberia | Rubber | 66.7 | 99.0 | <i>n.a.</i> |
| Madagascar | Shellfish | 12.8 | 22.6 | 27% |
| Malawi | Tobacco | 57.2 | 76.3 | 25% |
| Mali | Cotton | 45.5 | 94.1 | 23% |
| Mauritania | Iron Ore | 52.4 | 99.6 | 8% |
| Mozambique | Prawns | 38.5 | 54.0 | 35% |
| Myanmar | Teak/wood | 34.7 | 97.2 | 50% |
| Nicaragua | Coffee | 30.2 | 56.4 | 44% |
| Niger | Uranium | 48.6 | <i>n.a.</i> | 21% |
| Rwanda | Coffee | 45.3 | 70.5 | 33% |
| Sao Tome & Princ. | Cocoa | 86.0 | 86.7 | 11% |
| Senegal | Fish | 29.9 | 43.4 | 9% |
| Sierra Leone | Rutile | <i>n.a.</i> | <i>n.a.</i> | 27% |
| Somalia | Livestock | <i>n.a.</i> | <i>n.a.</i> | <i>n.a.</i> |
| Sudan | Livestock | 26.5 | 70.9 | 18% |
| Tanzania | Coffee | 18.5 | 45.8 | 41% |
| Togo | Phosphate | 25.9 | 58.9 | 20% |
| Uganda | Coffee | 60.6 | 70.0 | 55% |
| Vietnam | Crude Oil | 13.2 | 38.5 | 62% |
| Yemen, Rep. | Crude Oil | 81.9 | <i>nearly 99 *</i> | 27% |
| Zambia | Copper | 54.5 | 75.2 | 9% |

All data refers to 1998, except for data in italic
 Columns (1)-(3) which refers to 1997

Source: latest IMF document except for Sudan (EIU, 1998), the two Congos and Yemen (from the World Bank's Country at a Glance tables)

Column (4) Standard deviation in levels of exports of goods & services, 1988-1998, in percent of the average, except for Guyana (1992-1998), Vietnam, and Yemen (both for 1990-1998).

Source: World Development Indicators CD-Rom 2000

*: based on Table 2

Table 4: Mean Values & Volatility of main variables

| COUNTRY | Aid (% of GNP) 1988-1997 | | Imports (% of GDP) 1988-98 | Import levels 1988-98 | | Reserves in months of imports 1988-98 | | Revenues excluding grants (% of GDP) 1988-98 | |
|----------------------|-----------------------------|----------------------------|-------------------------------------|----------------------------|-------------------|------------------------------------------|------|----------------------------------------------------|--|
| | Mean | Standard deviation/Mean | Mean | Standard deviation/Mean | Mean | Standard deviation/Mean | Mean | Standard deviation/ Mean | |
| Angola | 9.0 | 75% | 48.4 | 21% | 0.7 ^{1/} | 41% | 32.3 | 25% | |
| Benin | 13.9 | 22% | 33.6 | 18% | 3.5 | 28% | 15.4 | 11% | |
| Bolivia | 10.4 | 14% | 26.8 | 25% | 5.5 | 28% | 12.6 | 20% | |
| Burkina Faso | 17.0 | 26% | 26.8 | 13% | 5.7 | 9% | 11.9 | 10% | |
| Burundi | 20.5 | 43% | 24.4 | 32% | 7.1 | 34% | 16.7 | 15% | |
| Cameroon | 5.3 | 36% | 19.0 | 11% | 0.1 | 68% | 14.5 | 13% | |
| Central African Rep. | 14.4 | 21% | 25.1 | 21% | 6.7 | 46% | 8.8 | 16% | |
| Chad | 15.9 | 17% | 30.4 | 9% | 2.7 | 30% | 6.8 | 15% | |
| Congo, Dem. | 4.8 | 58% | 22.0 | 31% | 0.7 ^{2/} | 30% | | | |
| Congo, Rep. | 9.9 | 74% | 59.1 | 19% | 0.2 | 91% | 24.3 | 13% | |
| Côte d'Ivoire | 9.0 | 60% | 32.0 | 14% | 0.8 | 95% | 21.3 | 10% | |
| Ethiopia | 15.2 | 32% | 18.9 | 21% | 3.7 | 58% | 16.9 | 23% | |
| Gambia, The | 22.9 | 49% | 66.8 | 15% | 4.0 | 18% | 20.8 | 8% | |
| Ghana | 10.4 | 19% | 30.7 | 21% | 3.3 | 32% | 15.8 | 18% | |
| Guinea | 11.9 | 20% | 26.5 | 7% | 1.1 ^{3/} | 28% | 12.4 | 18% | |
| Guinea-Bissau | 55.8 | 20% | 39.2 | 16% | 1.7 ^{4/} | 21% | 12.3 | 26% | |
| Guyana | 29.0 | 63% | 105.4 | 12% | 3.9 | 9% | | | |
| Honduras | 9.6 | 28% | 42.9 | 34% | 1.5 | 62% | | | |
| Kenya | 10.5 | 44% | 33.1 | 24% | 1.7 | 53% | 26.1 | 10% | |
| Lao PDR | 16.8 | 19% | 34.6 | 42% | 1.7 | 36% | | | |
| Liberia | | | | | | | | | |
| Madagascar | 13.8 | 31% | 26.5 | 17% | 1.6 | 46% | 10.1 | 16% | |
| Malawi | 26.1 | 23% | 37.2 | 27% | 1.7 | 50% | 20.3 | 12% | |
| Mali | 19.1 | 21% | 34.9 | 8% | 4.2 | 21% | 15.0 | 12% | |
| Mauritania | 23.4 | 24% | 54.0 | 9% | 2.2 | 70% | 27.5 | 13% | |
| Mozambique | 46.7 | 34% | 39.0 | 8% | 2.9 | 50% | 12.3 | 9% | |
| Myanmar | | | 2.7 | 44% | 3.2 | 42% | | | |
| Nicaragua | 38.2 | 45% | 57.9 | 32% | 1.7 | 39% | 22.9 | 13% | |
| Niger | 16.9 | 20% | 22.3 | 20% | 2.9 | 41% | 8.4 | 16% | |
| Rwanda | 27.2 | 96% | 24.6 | 22% | 2.7 | 43% | 9.0 | 23% | |
| Sao Tome & Prin. | 112.6 | 35% | 87.1 | 11% | 3.4 ^{5/} | 36% | 11.1 | 84% | |
| Senegal | 13.0 | 21% | 34.9 | 7% | 1.3 | 96% | 16.8 | 7% | |
| Sierra Leone | 18.2 | 48% | 21.7 | 14% | 1.4 | 64% | 9.5 | 30% | |
| Somalia | | | | | | | | | |
| Sudan | 5.4 | 45% | 34.9 | 17% | 0.3 | 79% | 7.7 | 11% | |
| Tanzania | 20.6 | 28% | 35.2 | 16% | 2.0 | 39% | 14.1 | 14% | |
| Togo | 12.5 | 25% | 41.1 | 20% | 2.9 | 47% | 16.7 | 26% | |
| Uganda | 14.7 | 42% | 20.6 | 46% | 2.9 | 52% | 8.1 | 24% | |
| Vietnam | 3.8 | 38% | 37.5 | 66% | 1.4 | 22% | 21.7 | 12% | |
| Yemen, Rep. | 6.3 | 22% | 42.4 | 13% | 2.3 | 52% | 25.1 | 39% | |
| Zambia | 24.4 | 62% | 38.0 | 19% | 1.3 | 32% | 18.8 | 8% | |

1/ (1995-98); 2/ (1988-96); 3/ (1991-97); 4/ (1988-96); 5/ (1995-98)

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