

PROTECTING AFRICA AGAINST “SHOCKS”

AFRICA COMMISSION BACKGROUND PAPER

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I. BACKGROUND AND INTRODUCTION¹

As part of the Commission for Africa analysis of Africa’s future development financing, it is vital to analyse the issue of how to protect Africa against “shocks” (events beyond the control of African governments) which could severely disrupt their progress towards the MDGs.

African (especially low-income) countries are highly vulnerable to shocks. These may impact directly on the balance of payments – notably exports (commodity price changes, drought and floods) or the budget – notably budget revenue (import duty shortfalls, devaluation); or less directly by increasing balance of payments or budget financing needs (import price increases, notably for food and petroleum; and erratic donor aid flows).² Such shocks can reduce GDP by as much as 5%, and cause dramatic cuts in budget spending on MDG objectives. There is also strong evidence that the income of the poor is hit even harder by shocks, provoking a major setback to progress towards the MDGs. In recent years, the HIPC Debt Relief Initiative has also emphasised the vulnerability of Africa’s debt sustainability to external shocks.

Effective protection against the impact of shocks would therefore be a highly worthwhile investment for international financing and policy, supporting and encouraging good economic management. Yet it has long been established that the international community is bad at protecting against shocks.³ African countries and the international financial system have devoted insufficient attention to a) avoiding the occurrence of shocks through better forecasting and policies; and b) counteracting them rapidly with funding which is predictable, sufficient, cheap and free from excessive conditionality.

Recent BWI Board papers have highlighted the need to avoid or mitigate the effects of shocks, but have tightly limited their own proposed roles in this process. The IMF (IMF 2003a and 2004) indicates that it should be responsible only for adjusting macroeconomic policy to prevent and offset shocks, for signalling the existence of a shock, and through providing very limited extra finance by augmenting PRGF loans. The World Bank (World Bank 2004) sees its role as helping with anti-shock structural policies, signalling financing needs to offset a shock, catalysing donor support, and providing limited extra finance by augmenting PRSC loans. The EU is the other main multilateral institution tasked with offsetting shocks but its FLEX facility, though a vast improvement on the earlier STABEX, has provided very little finance during 2000-03.

All of these measures fall way short of the scale and frequency of shocks to which African economies are subjected. In the context of a potential major increase in global grant flows linked to the Monterrey commitments and the IFF, it is urgent to examine how Africa could be better protected against shocks.

The Commission for Africa has therefore commissioned this paper, with the following aims:

- to define what is meant by shocks
- to identify the key shocks to which African countries are subject, and which countries (especially HIPCs) are most sensitive to the different shocks identified;
- to propose possible solutions open to the international financial community, in both preventative and curative terms.

The remaining sections of this paper deal with each issue in turn.

¹ Some of this paper represents an updating of analysis in Martin and Alami 2001, which was funded by DFID.

² Of course, many African countries are frequently subject to shocks arising from conflict and other political factors, which will also make their debt less sustainable, but these are not considered in detail in this paper.

³ See, for example, Dell 1985, Helleiner 1985, Martin 1991; Williamson 1983.

2. DEFINING SHOCKS

What exactly is a “shock” ? It is best defined as an event which impacts unexpectedly on an African economy, and which is “exogenous” - beyond the control of the government to prevent – though, as this study will show, neither the unexpected nature nor the lack of government control are inevitable.⁴

The shocks which are commonly acknowledged to fall into this category are:

- shocks to international commodity prices (to commodity exports or imports), market conditions, or access to trade partner markets, which can cut exports (and export-related budget revenue) or increase import cost, and cut export-related external financing
- natural disasters such as earthquakes, cyclones, drought, floods or locust plagues (and diseases hitting crop production), which can hit GDP, exports, budget revenue and food production (increasing import needs), and force increases in budget expenditure
- conflict-related shocks, notably the negative effects of conflict in a neighbouring country, the impact of terrorist attacks, which can cause extra budget costs for security and refugees, or undermine tourism revenues and related budget taxes
- global financial market shocks leading to outflows of foreign private capital, either directly for countries which receive large amounts such capital, or through contagion from neighbouring countries or large regional economic powers, which can provoke domestic financial crises
- shocks to international interest or exchange rates which can increase debt burdens and destabilise foreign private capital flows, or cut investment returns on reserves
- shortfalls in external aid flows which can lead to foreign exchange and budget shortfalls
- shocks of sudden human diseases (eg SARS) which can hit tourist revenues
- changes in host country policies for migrant labour, which can cut remittances

Some have argued in 5 ways that some shocks are less important than others:

1) many shocks are not really shocks. These include:

- **largely predictable trends or repeated events** at a national, regional or international level:
 - Among obvious national examples are:
 - **Climatic trends:** repeated droughts, creeping desertification and depletion of water tables to which all Sahelian countries have been subject for more than 20 years;
 - **Resource depletion:** gradual depletion of resources or increases in extraction costs which reduce mineral or timber exports; and
 - **Aid shortfalls:** routine shortfalls of disbursements due to disbursement problems.
 - **Health epidemics:** notably HIV/AIDS, tuberculosis etc
 - Among international examples are:
 - **“fallacy of composition”:** many countries increase exports of a commodity simultaneously in the absence of any world demand increase, leading to price falls.⁵
 - the **secular downward trend in global commodity prices** which is now universally acknowledged to have occurred during the last 30 years
 - **commodity- and market-specific factors** (for example in bauxite for Guinea and Guyana, phosphates for Togo, and uranium for Niger) which make prospects for traditional exports more bleak than based on global market analysis.
 - **changes in regional or global trade policy** which will lead to reductions in tariff revenues, or in exports due to ending of trade preferences
 - **changes in global climate** (eg global warming and the impact of el Nino).
- **miscalculations of the effects of policy changes:** good examples have been dramatic underestimations of the negative effects on budget revenues of tariff reductions due to regional or international agreements; overprojections of the revenue collections resulting from tax reforms; and overprojections of the positive effects of efforts to liberalise or diversify exports.

⁴ This paper does not discuss positive shocks, because analysis indicates that they have little effect on long-term growth or poverty reduction (see World Bank 2004).

⁵ According to commodity market analysts, commodities subject to fallacy of composition and the African low-income countries they affect include: cocoa (Cote d’Ivoire, Ghana, Sierra Leone, Sao Tome); coffee (Burundi, Cameroon, Cote d’Ivoire, Ethiopia, Kenya, Madagascar, Rwanda, Sao Tome, Sierra Leone, Tanzania, Togo, Uganda); cotton (Benin, Burkina, CAR, Cameroon, Chad, Mozambique, Mali, Senegal, Sudan, Togo and Uganda); gold (Ghana, Mali and Tanzania); and tea (Burundi, Kenya, Malawi, Rwanda, Tanzania and Uganda).

- to these should be added the “shocks” caused by ***misdesign or misimplementation of policies*** which therefore produce what seem like perverse “shock” effects (when with more adaptation of policies to the recipient economy, such effects could have been foreseen).⁶

A large number of “shocks” would therefore not be shocks if more reliable and less optimistic analysis were undertaken before projections were made. Many previous authors (including the BWIs themselves) have indicated systematic tendencies to optimism in the projections underlying BWI programmes, whether due to optimism over effects of policies in the country, or to overoptimism about global economic trends.⁷ With more realistic projections, based on probability and frequency analysis of volatility in key variables, and properly calibrated vulnerability indices, most shocks would disappear from future programmes.⁸ However, more “realistic” projections might also carry the risk of reducing projected growth rates up front, and therefore abandoning the MDGs entirely. The aim of “realism” should be to integrate potential shocks into projections, and make sure that growth rates in non-shock years are raised even higher to ensure the attainment of the MDGs even including shocks.

2) some would like to define very narrowly the types of shocks against which the international community should take action. This includes

- accepting some types of shocks (e.g. commodity price falls, oil price rises) as more valid (because less within the control of government) than others (such as aid shortfalls or domestic financial crises), which are more capable of influence by recipient government policies; or
- setting false periods (e.g. 3-year averages) over which shocks have to persist in order to be valid for compensation or for changing adjustment programme targets.

However, more recent analysis shows that it is relatively easy to separate the impact of the exogenous shock – for example, the proportion of aid shortfalls which are due to donor policy and procedural problems, and the scale of domestic financial crisis provoked by other exogenous shocks. It also shows that even short shocks can have persistent long-term effects on growth and poverty.

3) others have highlighted a need to distinguish between input shocks (eg lack of rain producing drought) and output shocks (eg effect on GDP or exports), and that the two do not always correlate. However, in low-income countries, which are much less resilient in the face of shocks, input shocks almost entirely transform themselves into output shocks, so the distinction is unnecessary.

4) the largest long-running debate is over whether temporary or permanent shocks should be compensated. Some feel temporary shocks make the strongest case for compensation, because with rapid financing a country can move back to the correct long-term path immediately; others prefer permanent shocks, arguing that a country can more easily adjust to temporary shocks and needs more compensation for long-term shocks. However, more recently (IMF 2004; World Bank 2004) the BWIs have acknowledged that even apparently “temporary” shocks will have permanent negative effects; and that there are massive returns from financing against permanent shocks to replace lost capital stock, smooth national adjustment to the new economic situation, or maintain the incomes of the poor. As a result, there appears to be equal support for funding temporary and permanent shocks.

5) Finally, some have suggested that some shocks are extremely difficult to separate from policy errors, and that providing financing to offset their effects runs a risk of moral hazard that governments will make less short-term effort to overcome shocks, or less long-term effort to implement policy measures (eg export diversification) which reduce the impact of shocks. This has been true of some past financing mechanisms (eg EU STABEX) in which finance was focussed on increasing production of the commodity which had received the shock. However, it is now acknowledged that it is very easy to design financial support so as to avoid such moral hazards, and that governments focus more on short-term rather than long-term anti-shock measures because they lack the financing to do both.

This paper treats all limitations of and distinctions among shocks as spurious. If a country is making genuine efforts to promote economic development and reach the MDGs, shocks should be foreseen and avoided - and if this is not possible, genuine unforeseeable “shocks”, especially those which impact on MDG progress, should be compensated regardless of their source, nature or duration.⁹

⁶ These issues have been extensively treated elsewhere: see Killick 1984, Martin 1991, Martin and Mistry 1992.

⁷ For comprehensive earlier analyses see Batchelor 2000, and Martin and Mistry 1992.

⁸ For excellent vulnerability indices see Atkins et al 2000; Crowards 1999; OECD 2000; and UN 2000.

⁹ This argument could also be applied to domestically-sourced shocks, which are not covered in this paper.

III. AFRICA’S SHOCKS

In order to prioritise solutions, we need to know which shocks are most important for African governments overall, and which African governments have been most subject to certain types of shocks, so that we can identify the need for solutions to specific or overall vulnerability. This section of the report summarises the key conclusions of this analysis to identify the key overall shocks which hit Africa, their severity and probability.¹⁰

3.1. Which Shocks Hit Africa and How Hard?

Table 1 presents in summary form indicators of potential vulnerability of African countries to shocks, as well as the shocks to which they have been subject in the last 10 years. It shows:

- **very high prevalence of natural disasters:** at least 44 countries have suffered natural disasters in the last ten years, including 34 suffering from various types of drought, 22 from other climate shocks (floods, cyclones or hurricanes), 11 from locusts and 3 from earthquakes;¹¹
- **high aid dependency and volatility:** 28 African countries (including 25 HIPCs) are potentially vulnerable to aid shocks, as measured by aid dependency (aid/GNP ratio over 10%). In addition, aid flows have been highly volatile, with a mean standard deviation for African HIPCs of 38%, and 29 countries suffering a standard deviation over 20% in the last ten years. All but 5 of the 34 African HIPCs for which data are available have a standard deviation of aid flows which exceeds 20%, and for 12 it exceeds 40%. Other analysis (Arellano 2002; Bulir and Hamann 2001) as well as almost all ESAF/PRGF Board papers refer to considerable aid shortfalls each year compared to programmed amounts, as one of the most persistent shocks blowing programmes off course. Johnson et al 2004 indicates that aid can frequently fall short or projections by as much as 25-30%, with budget support being more volatile but project support falling more consistently short, due to over-optimism about donor pledges being turned into actual disbursements, underestimating delays caused by donor or recipient policies or procedures.
- **high export concentration and volatility:** 24 countries are very vulnerable to export shocks, depending on one commodity for more than 50% of export revenues, and within this on between 1 and 3 products for more than 70% of export revenues¹². In addition, African HIPCs have a very high export volatility: standard deviation as a percentage of the mean level averages 23%, and exceeds 20% for 20 of 34 African HIPCs. Moreover, 9 countries have suffered important shocks to tourist revenues; and 8 to worker remittances. PRGF programme documents also indicate persistent shortfalls of exports compared to projections, particularly for non-traditional exports.
- **high import dependence and volatility:** African HIPCs are also highly dependent on imports, with a mean import/GDP ratio of 35% and 33 (including 19 HIPCs) having import/GDP ratios exceeding 30%, indicating high potential vulnerability to shocks. However, African HIPCs’ imports have been considerably less volatile than exports and aid flows, with mean standard deviation of only 18%, and only 12 countries with a standard deviation over 20%. Most countries are particularly dependent on food and fuel imports, which are generally the least elastic and flexible types of imports and therefore most subject to international price shocks. Food accounts for more than 20% of imports in 15 African HIPCs, and fuel for more than 20% in seven African HIPCs. According to PRGF Board papers, the vast majority of HIPCs have also been subject to import excesses over projections. This has been particularly true for oil imports since 1999, given international price rises, but also for wider imports due to overoptimism about their impact on reducing import demand through devaluation or domestic production of alternatives.

¹⁰ It has not been possible given time and budgetary constraints to calculate comprehensive vulnerability index results for individual African countries.

¹¹ High prevalence of natural disasters is in line with the findings of IMF 2004 and UNDP 2004.

¹² Export concentration also makes countries more vulnerable to imposition of trade barriers by partners.

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Table 1: Indicators of Vulnerability by Type of Shock

Country Name	Aid	Climate	Exports	Imports	Reserves	Conflict
Algeria		☀ L ⚡	x T	d		♣
Angola	v	!!!	x v	d v	c v	♣
Benin	• v	☀	x v	d	v	
Botswana		☀ !!!	x R	d		
Burkina Faso	• v	☀ L	x R			N
Burundi	• v	☀ !!!	x	v	v	♣ N
Cameroon	v	@			c v	
Cape Verde	•	☀	R	d	c	
Central African Rep.	• v	!!!		v	c v	♣
Chad	•	☀ ⚡	x	d	c v	N
Comoros			T			♣
Congo, Dem. Rep.	v	☀ !!!	v	d v	c v	♣
Congo, Rep.	v	!!!	x	d	c v	♣ N
Cote d'Ivoire	v	!!!	T	d	c v	♣ N
Djibouti	•	☀	R	d	c	
Egypt		☀ ⚡	T			
Equ Guinea		!!!	x	n.a.	c	♣
Eritrea	•	☀ L		d		♣
Ethiopia	• v	☀	x v	v	c v	♣ N
Gabon			x v	d	c	
Gambia, The	• v	☀ L		d		
Ghana	•	☀	x v R	d v	c v	
Guinea	• v				c v	N
Guinea-Bissau	• v		x v	d	v	♣
Kenya	• v	☀ !!!	T	d v	c v	N
Lesotho		☀	R	d		♣
Liberia	n.a.		x	n.a.	c v	♣
Libya		☀	x	d		
Madagascar	• v	L @	v T		c v	♣
Malawi	• v	☀ !!!	x	d v	c v	
Mali	• v	☀ L		d	v	N
Mauritania	• v	L	x	d	v	♣
Mauritius		@	x	d	c	
Morocco		☀ ⚡	x	d		
Mozambique	• v	☀ !!! @	v R	d	v	♣
Namibia		☀ !!!		d	c	
Niger	• v	☀ L		v	c v	♣
Nigeria		☀ !!! L	x v	d		♣
Rwanda	• v	☀	v T	v	v	♣ N
Sao Tome & Princ.	• v		x	d	v	♣
Senegal	• v	☀ L		d	c v	N
Sierra Leone	• v		v		c v	♣ N
Somalia	n.a.	☀	n.a.	n.a.	c v	♣
South Africa		☀ !!!		d	c	N
Sudan	v	☀		n.a.	c v	♣
Swaziland		!!!	x R	d	c	
Tanzania	• v	☀ !!!	v T	d	v	N
Togo	• v	☀		d v	c v	♣
Uganda	• v	☀ !!!	x v T	v	v	♣
Zambia	• v	☀ !!!	x	d	c v	N
Zimbabwe		☀ !!!	T		c	♣

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, exclamation marks (!!!) to heavy rains or floods, @ represents a cyclone, L represents locusts and ⚡ represents earthquakes

- 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.

- Conflict: **N** represents a country affected by a neighbouring conflict; **♣** represent a country with its own internal conflict/severe political instability or war.

- **high prevalence of war and conflict:** no fewer than 26 countries have had their own internal conflicts or been involved in regional conflicts, and 15 have had to cope with severe negative impacts from conflicts in neighbouring countries.¹³
- **foreign private capital crises:** another area of persistent shortfalls for almost all countries has been foreign private capital (FDI, portfolio investment, and private sector debt). Data on these flows are very poor in African countries, but at least 13 countries - as well as the whole CFA franc zone before the devaluation in 1994 – have suffered major crises related to surges and slumps of foreign private capital in the last 10 years, with particularly severe examples in Ghana, Zambia and Zimbabwe (see also Bhinda et al 1999; Martin and Rose-Innes 2004).

Overall, it would appear that the most serious shocks for Africa are natural disasters, aid flows, exports, imports and conflict, but that most African countries suffer multiple shocks - more than 46 have suffered at least three types - and all have suffered at least one type during the last ten years.

3.2. The Impact of Shocks

In principle, shocks can impact on the whole economy (GDP), or just one sector or region. Natural disasters and conflict tend to impact economy-wide. However, the other shocks discussed above have their immediate impact on the balance of payments.¹⁴ For example, the main shocks which impact on exports of goods and services are: price shocks which reduce export earnings; climatic, disease or other shocks to export production; shocks such as terrorism, war or disease which disrupt tourism earnings; and changes in host country policies which reduce worker remittances.

In addition, most of the above balance of payments shocks will have two wider impacts:

- they commonly provoke devaluation (if the exchange rate is flexible) unless immediately offset by inflows of external finance. In turn this devaluation causes problems elsewhere, including inflation, and higher external debt service in domestic currency or budget revenue terms.
- they will reduce foreign exchange reserves. Reserves have been highly volatile for African HIPC, with mean standard deviation exceeding 47% of average levels, and exceeding 20% for all but 2 countries. PRGF documents also indicate that most countries have been failing to meet programmed reserves targets - due usually to foreign exchange shortfalls reflecting other external shocks. The level of reserves measured in months of imports is also commonly used as an indicator of vulnerability to shocks, with a usual objective of having 4-6 months of import coverage. Most African low-income countries have very low reserves: 30 countries have less than 4 months of imports of goods and services, and only 6 reach 6 months.¹⁵

However, shocks can also have a major indirect impact on other sectors.

- The most important is the fiscal sector. Typical impacts are lower budget revenues due to cuts in export (including tourism) or import taxes and related VAT; higher expenditures to combat the impact of shocks (especially natural disasters); lower (usually especially capital) expenditures if the shocks are not offset by additional financing, or if aid shortfalls lead to cuts in spending. However, the usual impact is procyclical – ie cuts in expenditures and revenues during negative shocks. In addition, countries tend to try to finance additional expenditures (or offset other shortfalls) by borrowing externally or domestically. This is usually because countries have no fiscal contingency reserve or “fiscal space” to absorb the impact of shocks.
- shocks can also make debt unsustainable. This reflects their impact on the denominators of debt sustainability ratios - exports of goods and services and budget revenue. Shocks can also impact on almost every line item of the balance of payments and the budget, thereby increasing financing gaps. Insofar as these gaps are filled by additional borrowing rather than grants, this will also raise debt ratios above sustainable levels.

¹³ For a good example of analysis of the impact of neighbouring conflict, see Dore et al 2003.

¹⁴ For more details, see Martin and Alami 2001.

¹⁵ This presentation probably understates vulnerability because IMF programmes now normally measure reserves in months of *the following year's* imports of goods and services.

- shocks also cause major uncertainty in both private and public sectors. This tends to reduce long-term savings and investment plans among all major domestic and foreign actors.

Shocks also tend to have major long-term and cumulative effects on the economy. Commodity price shocks tend to be especially “persistent” – they reach their maximum negative effect after 4 years and low-income economies take 5 years to overcome around 50% of their effects (see World Bank 2004). Shocks also have almost irreversible effects such as falls in human capital (deaths), large capital outflows, credit crunches and permanent unemployment.

The most important impact of shocks is on poverty. All of the shocks described above will reduce scope for poverty reduction - for example, by decreasing smallholder export earnings, by reducing imports of goods or aid flows destined for poverty reduction, and by reducing budget expenditure on poverty reduction. A large amount of recent analysis has demonstrated that many different types of shocks – including financial crises - have a dramatic impact on increasing poverty, reversing trends towards the MDGs.¹⁶ The precise impact depends on the degree of prior poverty and on the effectiveness of the national and international counter-measures, but in low-income countries high poverty and lack of adequate safety nets, external reserves cushions or internal stabilisation mechanisms exacerbate the impact. The poor tend to suffer much more during crises, because: they lack assets or credit to protect themselves from income falls and unemployment; they are less mobile than the wealthy due to lack of education, skills and health; and they lose sources of income such as transfers from wealthier relatives or communities, or from government, in part because their “voice” is weak. As a result, every 1 per cent decline in growth can increase the proportion of the population in absolute poverty by as much as 2%.

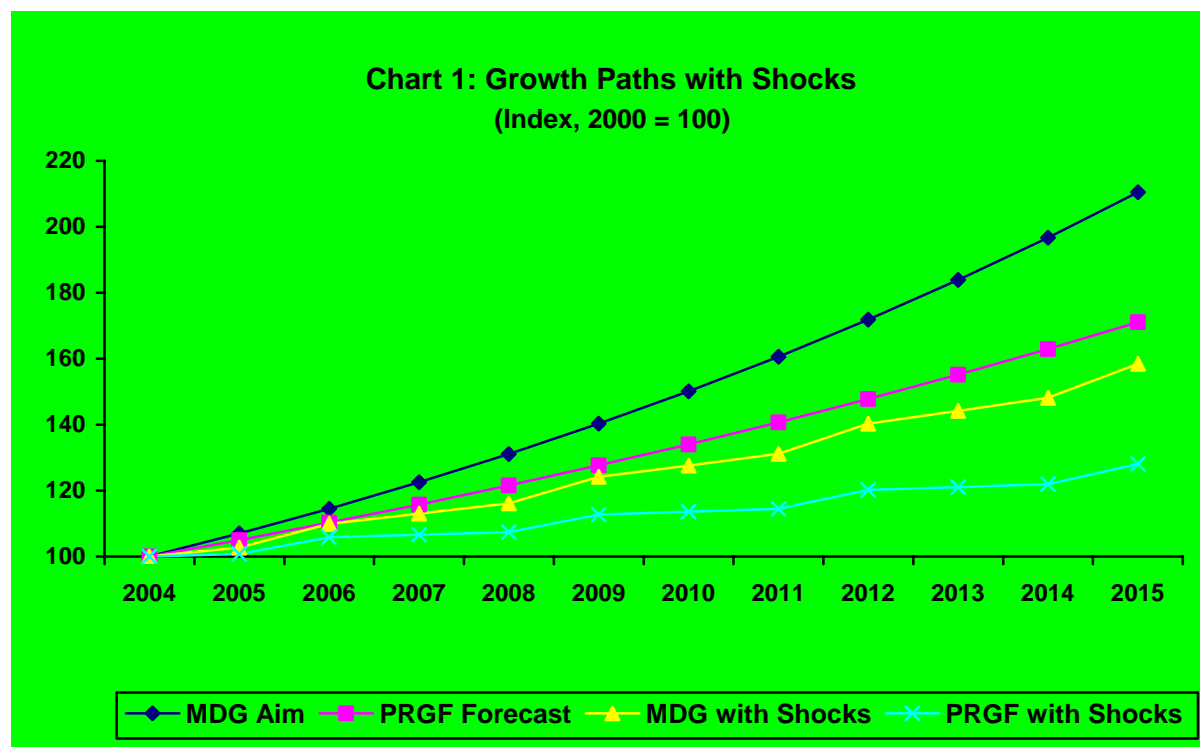
In addition, Agenor and Lustig have also argued convincingly that the poor also tend to benefit much less from post-shock recoveries, because they cause irreversible damage to their investment in human (education, health, nutrition) and physical capital. The poor are also constrained in their efforts to get out of poverty by their extreme worry about the risks of future shocks. This makes “economic insecurity” rank very high in their own participatory assessments of factors causing poverty, and leads the poor to invest less for the long-term. As a result, shocks can have a permanent effect of increasing poverty.

Due to the absence of reliable costings for MDG expenditures or country-by-country analysis of the impact of shocks on poverty, it is not possible to quantify the potential impact of shocks on poverty reduction in Africa for this paper. However, recent analysis (IMF 2004) has indicated that shocks occur at least once every 1.4 years for the average low-income country, and have an average magnitude of 4.25% of GDP.¹⁷ Chart 1 shows an indicative impact on African low-income countries’ path to the MDGs compared to the 7% GDP growth rate calculated by the UN as necessary to attain the MDGs (12 African HIPCs have estimated that the growth rate they need is closer to 6.3%), and the 5% average growth rate currently being projected in IMF PRGF programmes in Africa. It indicates that even if governments target 7% growth initially, shocks would halve the progress to the MDGs. However, given current PRGF projections, which themselves fall short of MDG needs by one third, shocks could lead to a 75% shortfall in the growth needed to reach the MDGs. There is also strong evidence that shocks have a more long-term “drag” effect on economic growth (eg Chauvet and Guillaumont 2001; Collier and Dehn 2001; Guillaumont and Combes 2002), and the frequency and severity of shocks for low-income countries has been growing. These factors mean that the above reduction of growth due to shocks is a considerable underestimate.

Analysis of the potential impact of shocks on the long-term path to the MDGs in each African country should be a top priority. Every PRGF Board Paper should ideally contain a 20-year projection of the path to the MDGs and the associated financing which is necessary, and of the key shocks which could derail such progress.

¹⁶ See Agenor; Aizeman and Pinto; Cline; Lustig; and World Bank 2000.

¹⁷ This figure represents a combination of natural disasters which occur every 2.5 years with an average impact of 5% of GDP, and commodity shocks which occur every 3.3 years with an average impact of 3.5% of GDP. It does not take into account other types of shocks – notably aid shortfalls and conflict.



3.3. How Likely Are Future Shocks?

To assess the likelihood of future “shocks” for each country, we have used two methods:

- recent growth rates in key variables compared to projected trends in HIPC DSAs. Of course, it is true that past rates might not be repeated in future, where they were due to policy slippages or domestic political/conflict-related events. However, where they were due to commodity prices, climatic events or aid/import shortfalls, there is every reason to believe that past trends might well continue.
- sensitivity assumptions made by HIPC Governments, the IMF and World Bank in HIPC DSAs.¹⁸

3.3.1. Recent and Projected Trends

Table 2 shows recent export and GDP growth compared to projected trends in the DSAs.¹⁹ It indicates that projected GDP growth rates are higher than recent averages in all but 5 cases. The most dramatic differences are for Angola, CAR, Chad, Cote d’Ivoire, Ethiopia and Madagascar – but most of these large differences are explained by recovery from civil conflict or expansion of petroleum exports. However, the vast majority of countries have projected GDP growth rates well in excess of recent levels, and the overall difference in the recent and projected averages is 2.2%.²⁰ The other striking feature of the projections is the similarity of the GDP growth rates for most countries at between 4% and 6%. As already discussed above, 5% is the minimum real growth needed to make any difference to poverty levels (even though falling some way short of growth rates needed to halve poverty by 2015 in most countries). Therefore the question should be not, how can we make projections more realistic (ie bring them down to match past levels), but how can we change policy to increase growth dramatically?

The relationship between historical and projected growth rates for exports is only slightly more balanced, with 24 of 34 countries having projected export growth rates above recent trends, compared to only 10 which are lower. However, the average difference between recent and projected

¹⁸ Countries not covered due to lack of a DSA are: Burundi, Comoros, Liberia, Somalia and Sudan.

¹⁹ Unfortunately, due to lack of medium-term projections for other variables in DSAs, this analysis has had to be limited to GDP and exports.

²⁰ We also tested periods such as the last five or three years, in order to take into account the fact that many HIPCs have started adjustment programmes only recently, but these made no substantial difference to the growth rates or the conclusion that projected growth rates are much higher than historical rates.

growth rates is much larger than for GDP, at 4.7%. The widest disparity and the greatest potential vulnerability to shocks are for 12 countries where projected growth rates are more than 5% higher than recent results (Burkina Faso, CAR, Chad, Comoros, the Gambia, Ghana, Madagascar, Mauritania, Niger, Sierra Leone, Togo and Uganda).

In sum, if we expect historical trends to continue, then very many countries are likely to be exposed to substantial “shocks” on both GDP and exports. While it is possible to make reasonable arguments that projected trends might be realistic if countries avoid policy slippage and domestically-generated shocks, the scale of rises projected in many countries makes this argument seem much less plausible, raising major worries over whether African HIPCs will reach their GDP growth and poverty reduction targets by 2015.

3.3.2. Potential Shocks Projected in DSAs

Annex Table A.1 shows a second potential measure of shocks - those considered likely in HIPC DSAs. Some of these shocks are broadly similar to those forecast by African HIPCs in their own national Debt Strategy Reports compiled with assistance from the HIPC Debt Strategy and Analysis Capacity-Building Programme (see www.dri.org.uk), for example identifying areas of vulnerability such as commodity prices, drought or aid. Nevertheless, four key characteristics emerge from comparing the types of shocks in sensitivity analysis in DSAs, with those in African government DSRs:

- the negative shocks assumed in national DSRs are generally larger than those in DSAs. This is because countries analyse in detail the past effects of shocks on the economy. In contrast, shocks assumed in DSAs are frequently small - limited in many cases to export growth rates which are 2% lower (and well above historical trends). Almost all African HIPCs feel that the scale of downside risk assessed in the DSAs is not large enough.
- the shocks calculated in the DSRs are generally fed through and analysed for all of their primary (and in some cases secondary) impacts on the balance of payments and budget, therefore producing additional financing gaps which will also increase debt. In contrast, many tripartite DSAs adjust one line item of the balance of payments or budget and recalculate financing gaps accordingly, without looking at the potential effects of a shock on GDP, and other elements of the BoP or budget. African HIPC Ministers have often expressed the view that the effects of shocks should be analysed more comprehensively.
- DSAs take virtually no account of potential shocks to the budget, with only one country’s DSA having looked at a potential revenue shock, while all DSRs examine alternative revenue shortfalls, particularly related to regional trade liberalisation or slower GDP growth rates. Most DSAs maintain exchange rates at current levels, while DSRs in countries with floating exchange rates tend to adjust exchange rates downwards on a purchasing power parity basis. HIPC Ministers have also frequently urged greater attention to potential revenue shocks.
- DSRs take much more frequent account of climate shocks. DSAs included them only for Mali and Mozambique, though Section 3 above showed 28 African HIPCs have had recent climate shocks.
- DSAs tend to project one shock at a time – whereas Section 3 showed that HIPCs are vulnerable to multiple different shocks.

Overall, which countries are the most vulnerable to shocks? Judging by the scale of impact of the DSA shocks on PV/export ratios (shown in Annex Table A.1), Burkina Faso, DR Congo, Congo Republic, Mauritania, Mozambique, Sao Tome and Zambia are the most vulnerable over the medium term (5-10 years). The pessimism of the tripartite DSAs might perhaps also be judged by the number of downside risks analysed (though this may simply reflect the amount of time devoted by missions). On this basis, Chad, Ethiopia, Kenya, Mauritania and Senegal might be seen to be more vulnerable.

Obviously, this analysis assumes that national PRSPs and PRGF documents are taking into account all of the “non-shocks” discussed in section 2 above. Yet this is definitely not the case – apart from a few notable exceptions such as HIV/AIDS in Zambia or bleak prospects for uranium in Niger, occasional analysis of possible aid shortfalls, and somewhat more systematic analysis of the impact of regional trade liberalisation or ending of trade preferences. In particular, most projections in DSAs make highly optimistic assumptions about flows of FDI and other private capital to Africa.

Table 2: Recent GDP and Export Growth Rates

COUNTRY	GDP*		Exports*	
	Average ¹	Projected ²	Average ¹	Projected ²
Angola	7.2	12.3	16.25	11.8
Benin	8.2	6.6	5.4	9.7
Burkina Faso	3.5	5.4	4.35	9.43
Burundi	2.57	4.9	7.5	3.03
Cameroon	4.6	4.7	-2.03	1.7
Central African Rep.	0.7	6.4	-8.7	21.5
Chad	9.8	18.5	20.5	72.5
Comoros	2.23	1.8	-7.76	14.6
Congo, Dem.	4.55	6.76	17.8	8.03
Congo, Rep.	2.7	3.76	3.33	4.93
Côte d'Ivoire	-1.77	3	8.77	n.a.
Ethiopia	1.7	6.4	7.2	9.43
Gambia, The	2.7	5.93	-1.73	10.6
Ghana	4.7	5	-3.4	7.77
Guinea	2.85	4.8	7.3	8.7
Guinea-Bissau	5.1	5.7	13.4	5
Kenya	1.2	2.97	5.23	6.73
Liberia	-7.1	n.a.	-4.7	n.a.
Madagascar	-3.35	7.2	-18.7	21.4
Malawi	0.73	4.73	5.6	4.9
Mali	10.5	5.8	15.4	5.9
Mauritania	4.17	5.75	-5.33	5.4
Mozambique	7.4	7.5	39.5	27.2
Niger	5.13	4.1	-2.33	7.33
Rwanda	5.67	6	2.17	6.33
Sao Tome & Prin.	4.2	6.5	49.93	1.93
Senegal	4.53	6	4	4.33
Sierra Leone	5.9	6.7	18.6	28.23
Somalia	n.a.	n.a.	n.a.	n.a.
Sudan	6.5	5.9	n.a.	n.a.
Tanzania	5.8	6.6	10.73	5.4
Togo	1.23	3	1.23	7
Uganda	5.73	5.73	2.07	7.37
Zambia	4.2	4.83	10.25	9.9
Average	3.8	6.0	6.9	11.6
Notes:				
	¹	Average between 2001 and 2003		
	²	Projected average between 2004 and 2006		
	*	Growth Rates		
	n.a.	no available data		

IV. SOLUTIONS

Based on the above analysis, African governments have been subject to considerable shocks in recent years and are likely to be subject to large shocks in the 10 years through to 2015. If nothing is done, such shocks could reduce forecast growth rates by 50%, and lead cumulative growth over the 15 years to fall 75% short of the level needed to halve Africa’s poverty.

What can be done to prevent such shocks or to offset them if they occur? There are three types of measures: improving analysis to prevent shocks from occurring; taking measures against individual types of shocks; and taking comprehensive measures against Africa’s overall vulnerability to shocks.

4.1. Analysing and Preventing Shocks

1) Eliminating “Non-Shocks”

One fundamental way to prevent shocks is to remove all which are not really shocks, by improving the methodology used in baseline economic projections:

- **improve the analytical base of baseline forecasts** by enhancing baseline data availability and reliability, notably on imports, aid and private capital flows, by disaggregating projections more, and by analysing historical trends and their causes as the basis for future projections;
- **adjust baseline forecasts downwards to include largely predictable events** at national, regional or international levels, such as repeated climatic shocks, resource depletion, climate change, HIV/AIDs, capital market shocks and international variables such as interest rates and exchange rates;
- in order to support these baseline forecasts, **further refine analysis of predictable country-specific shortfalls** and what causes them - notably export volume and budget revenue shortfalls, import excesses and aid disbursement delays,
- **take even more account of independent market analysis** of country-specific circumstances influencing commodity export prices and prospects, and of global commodity (export and import) markets and world economic trends;
- **provide African countries with more “voice” in forecasts**. For many countries, long-term forecasts are still designed in Washington with little consultation of African officials who know most about their economic prospects. Donors need to accelerate capacity-building assistance on macroeconomic forecasting, to avoid Africa’s exclusion from the dialogue due to lack of technical tools. In particular, Africa needs country-specific simple models to forecast MDG progress.

2) Forecasting Remaining Shocks

All PRSPs and BWI programme documents need to :

- **base projected shocks on historical probability, frequency distribution and scale** of all recent shocks, adjusting for i) any secular long-term changes in commodity prospects or climate and ii) any African policy changes which might reduce the negative impact of shocks. Ideally, documents would build their **baseline** economic scenarios on the most probable combination of these trends, and downside scenarios on the most probable extreme negative combinations.
- **present considerably larger (though still historically realistic) potential shocks** to show the genuine risk of a return to unsustainability of debt
- **analyse the full primary and secondary impacts of shocks** on the economy and especially on poverty and the MDGs;
- **place far more emphasis on the fiscal effects of shocks**, especially on revenue mobilisation and on potential cuts in MDG-related expenditures
- **take more notice of aid shortfalls and natural disasters** in more countries;
- **analyse systematically the scale of shocks which would make debt “unsustainable” after HIPC debt relief**, and build into programmes contingency measures to stop this from occurring;
- **integrate analysis of shocks fully into the proposed long-term debt sustainability framework for low-income countries**, and the grant allocation formulas for multilateral development banks, to tailor Africa’s ability to absorb borrowing to its vulnerability to shocks.

3) Preventing Shocks

Based on the above analysis, PRSPs and BWI programme documents need to contain **comprehensive anti-shock plans**, containing multiple policies to prevent the most likely multiple shocks for each individual country, in order to reduce their vulnerability. These would include:

- **protecting against natural disasters**, by for example investing in irrigation and drought-resistant crops, constructing cyclone shelters, and building stocks of anti-locust insecticides
- **improving predictability and stability of aid**, by switching to budget support, removing multiple donor procedural restrictions, and improving recipient absorptive capacity.²¹
- **diversifying sources of export earnings and growth**, focussing on non-agricultural sectors which are less shock-vulnerable, and ensuring higher quality and value-added for commodities.²²
- **rationalising import use**, by promoting competitive local production of imported goods, especially sustainable local production of food and energy.
- **promoting domestic savings and investment** much more actively, to reduce dependence on aid and foreign private capital, and diversifying and strengthening domestic financial markets to reduce their vulnerability to external shocks.
- **increasing reserves to 6 months of imports** as fast as possible (6 months of reserves would equal approximately 8% of GDP and would allow countries to run down reserves as a first line of defence to buffer against most shocks without reserves disappearing).
- **keeping debt levels as low as possible** to prevent renewed unsustainability
- **maximise “fiscal space”** by diversifying sources of budget revenue, keeping debt levels down and especially by establishing fiscal contingency reserves and anti-disaster funds (see also Happe et al 2003)
- **protecting the poor** by designing social safety nets to protect the poor against all types of shocks;²³ establishing buffer food stocks; and ensuring that the poor have more access to diversified sources of income, assets, credit, markets, education/training and health care.

However, some measures will take a long time to work, particularly diversifying exports, growth and budget revenue, rationalising imports, promoting domestic savings and investment, and improving the access of the poor. On the other hand, reserve enhancement, debt reduction, more predictable aid, social safety nets, and measures to protect against climate shocks can be more rapidly implemented and have a more immediate preventive effect, and therefore should be given priority.

The top priority is to establish fiscal contingency reserves in all low-income countries, linked to the potential scale of shocks. These are normal practice in developed economies, which are much less vulnerable to shocks, and should become so in more vulnerable low-income countries. Fiscal contingency reserves are preferable to just accumulating foreign exchange reserves, because they would make prevention plans focus above all on the fiscal (MDG spending) impact of shocks. However, they would need to be sufficiently well financed to ensure that MDG targets would be met in the baseline scenario without drawing on the contingency reserve.²⁴

4.2. Offsetting and Compensating Shocks

Even with dramatic improvements in projections and preventive measures, some shocks will still occur due to genuinely unexpected events. They will need to be offset or compensated. Here, it is possible to distinguish between measures which help with only some types of shocks, and those which are more comprehensive and will give greater protection to Africa.

1) Measures Against Individual Types of Shocks

There already exist many ways of compensating for or offsetting individual shocks. These types of mechanisms tend to fall into three categories:

- **risk management.** Most discussion of risk management has focussed around:
 - *export commodity risk management through hedging and derivatives* (see ITF 1999; UN 2001; World Bank 2004). Low-income countries, and particularly their small farmers and producers, are severely under-represented in world derivative and over-the-counter markets, and largely unable (exception for a few mineral-producing transnationals) to hedge or insure against risk. The World Bank Commodity Risk Management (CRM) initiative has been helping

²¹ For more details of these measures and their potential effects, see Johnson, Martin and Bargawi 2004.

²² The February 2004 EU action plan on agricultural commodity chains, dependence and poverty is a highly laudable comprehensive programme in this direction (see EU 2004 for more details).

²³ For more details on safety nets, see World Bank 2004.

²⁴ Ghana has recently established such a reserve, albeit to cushion against the impact of future adjustment of domestic petrol prices to match international levels rather than to guarantee MDG spending levels.

commodity producer organisations and financial institutions to access risk management institutions. Hedging instruments could also be used at a more macro level to protect against oil or food import price spikes. Progress in this area will be slow and the impact will be only long-term, but faster action here is a priority.

- **government asset and liability risk management.** There is greater potential for low-income governments to analyse the risks (exchange and interest rate, and maturity) inherent in their liability portfolios and to adjust their assets to match these risks more closely. The World Bank has been leading in building low-income country capacity for integrated asset and liability management. However, many low-income countries do not have sufficient assets to be able to manage them proactively, given their low levels of foreign exchange reserves and their vulnerability to shocks – so the first priority is to enhance reserve levels and ensure they are liquid and available to be used as a defence against shocks.
- **insuring** low-income countries against shocks.
 - it has been argued that countries could take out insurance against virtually all macro shocks. The Commonwealth launched a proposal in 2000 for insurance against the most insurance friendly types of shocks - natural disasters - via a Commonwealth Disaster Management Agency. Yet, while entirely welcome, this has received a firm commitment only from one country (Belize) because the frequency of shocks made the price of insurance prohibitive. Insurance against commodity risks (exports or imports) would be less viable and more expensive, given their frequency and simultaneous impact on a wide range of countries.
 - At a micro level, efforts are being made to improve coverage against shock-related risks in low-income countries, for firms and households. However, this is a very long-term effort and its financial viability for all but the wealthiest client depends on reducing premiums by reducing country vulnerability to shocks.
- **automatic adjustments to debt service**

Proposals have been made to adjust debt service to offset exogenous shocks, by:

 - linking debt service obligations to commodity prices. The World Bank (2004b) has indicated that this will not be very useful, and that providing more new grants would be better;
 - lending new external loans in inflation-indexed local currency instead of foreign currency. This would protect countries against rising debt burdens in the event of a devaluation. However, for countries with fixed currencies (CFA zone) it would not be a good option, as an inflation indexed local-currency loan would be more expensive than a foreign currency one. The impact of this mechanism would also be felt only through disbursements over the long-term;
 - deferring debt repayment in the event of a shock. If implemented rapidly this would be helpful but it would also mean accruing additional interest and so adding to the PV of country debt.

Most important, all these proposals are treating only one of the symptoms of an external shock (a high debt burden), rather than its causes or its comprehensive impact. As such, and given the low debt service obligations of low-income countries, they would offer only marginal and piecemeal assistance. None of them is therefore considered a high priority by African HIPC Ministers (2003).

2) Overall Contingency and Compensatory Measures

It would be preferable to have comprehensive protection against all shocks. Given the frequency of multiple shocks hitting most African countries, it is impossible to envisage that risk management products, insurance schemes or debt service adjustments would provide comprehensive protection without prohibitive cost. In this light, the onus is on the official system to implement three main measures to offset and compensate for shocks:

- **adjusting PRGF programmes to shocks.** It has long been practice for some performance criteria in some PRGF country programmes to be adjustable in light of shocks, but this should be generalised to all programmes, making such targets as fiscal and current account deficits explicitly adjustable according to both positive and negative shocks, or measuring them excluding elements which are vulnerable to such shocks (such as donor grants or interest payments). Alternatively, targets might be regarded as “indicative” and flexibly renegotiated in mid-programme reviews, without the need for requesting formal waivers. However, there is also a case for more fundamental reviews of programmes in order to redouble efforts to reduce poverty. This would include designing measures to accelerate the recovery in growth and pro-poor government spending after the shock through counter-cyclical fiscal policy and

specific anti-shock expenditures, to establish permanent anti-shock safety nets, to combat the long-term “downward drag” effects of shocks, and to enhance national mechanisms for monitoring the nature and impact of shocks.²⁵ At all costs a reaction to shocks which involves cutting MDG-related spending needs to be avoided.

To avoid this will require supplementary financing using two further types of solutions:

- **highly concessional loan (or preferably grant) compensatory and contingency financing against shocks from international institutions.** Various studies have shown the effectiveness of targeting aid to offsetting shocks.²⁶ Yet low-income African countries have virtually no access to systematic compensatory financing:
 - The IMF Contingency Credit Line (CCL) is not available to a country which is borrowing any other IMF facility (as almost all African countries are); and its Compensatory Financing Facility (CFF) is so expensive that it would breach the concessional borrowing ceilings which are standard in African PRGF programmes, with the result that no African LIC has used it recently.²⁷
 - The EU FLEX facility, launched in 2000, provides grant budget support funds for export and budget shortfalls, with contingency amounts set aside based on indices of vulnerability to economic and climate shocks. Unfortunately it has proved too restrictive, requiring excessively large shocks (10% falls in export earnings and a 10% worsening of the budget deficit) before it will act (European Commission 2004). As a result, it disbursed only €36 million, to only 6 of 51 countries which applied during 2000-2003, a period in which many African countries suffered shocks. In 2004 the EU made FLEX more flexible, abolishing the budget deficit benchmark, and allowing Least Developed Countries, landlocked countries and island states compensation for any export shortfall over 2%. This would have raised FLEX disbursements sixfold to Euro 255 million, if adopted in 2000-03. However, even these amounts fall way short of country needs, largely because it focuses only on export shortfalls, which are not the most important shocks for African countries, and do not correlate with GDP or MDG-related budget spending shortfalls which are the key indicators of problems in MDG progress.

The only other current way to compensate for shocks is by ad hoc augmentation of budget support by a lender or donor. Currently the IMF and World Bank play small roles in this area by augmenting PRGF or PRSC loans with extra disbursements, and providing extra disbursements to combat natural disasters. More important players are a few bilateral grant donors, who can provide additional budget support. However, these funds also have major problems (see also IMF 2004 and World Bank 2004:

- the amounts available are often inadequate and not frequent enough. For example, the IMF can disburse only 10% of quota to augment a PRGF loan against a commodity shock, which averages 1/7 of the impact of such shocks; and has done so with only half the frequency of shocks. Bilateral donors also have limits on the percentage of funds they can use for contingency purposes.
- apart from World Bank anti-disaster funds for IDA-only countries and FLEX, multilateral anti-shock funds are loans, significantly increasing debt burdens for vulnerable countries.
- funding is not disbursed fast enough. Typically it requires at least 6 months between a shock emerging and major disbursements of assistance, due partly to slow analysis of the impact of the shock, slow procedures for approving funds, and especially slow procedures for loan effectiveness, procurement and project implementation.
- funding is far too highly conditional, with PRGF programmes often requiring additional measures by the African government to adjust to shocks, partly because of the shortage and delay in anti-shock funding.
- the IMF has recently proposed to make its anti-shock support more systematic by setting pre-agreed guidelines to increase frequency, shorten the approval period and make sure all countries benefit equitably. However, it acknowledges that its funds can be only a “smoothing mechanism and catalyst” for debt distressed countries which need grants.

²⁵ For more details on these aspects of policy, see especially Lustig 2000.

²⁶ See for example Collier and Dehn 2001.

²⁷ For more details on these see IMF 2003.

Anti-natural disaster funding is in general rather more sufficient to the scale of its task – representing 7% of global aid – over US\$6 billion. It is also better coordinated through UN disaster appeals. The main problems here are delay in disbursement and poor coordination of disbursement through multiple agencies (generally very little via the African government's budget), as has recently been seen in the late response to the locust plague in the Sahel; well as overconcentration of funds on large or highly visible disasters; and high levels of disbursements through tied aid in kind which are overvalued or distort national food markets.

It is not surprising that, in evaluating donor aid policies and practices, African governments gave them the lowest marks for anti-shock funding (see Johnson et al 2004). As a result, ***the top priority for the international community should be to establish an anti-shocks facility for all low-income countries.*** This would need to be:

- comprehensive, compensating all shock-induced shortfalls in GDP growth, budget spending, or foreign exchange (exports, imports, aid etc) for IDA-only countries.
- much bigger than current facilities to provide adequate finance.
- grant-financed in order to avoid increasing national debt burdens.
- fast-acting (disbursing within 3 months). To ensure this, contingent funds would be set aside for countries each year (see below).
- Not subject to any additional conditionality beyond that of having PRSPs.

It would obviously be desirable to coordinate facilities such as EU FLEX and TIMs with such a facility, in order to provide consistent support to countries – the proposed mid-term review of FLEX would provide an opportunity to increase coordination.

What would be the cost of such a facility? To compensate for commodity (export and import) shocks for all IDA-only countries, which average 1% of their GDP a year, and adjusting for 3% annual global inflation, the estimated cost of such a facility would be US\$48-50 billion over the next 11 years – ie around US\$4.5 billion a year²⁸. Additional funding would be needed to offset aid and foreign private capital shocks, and to implement specific measures to prevent future disasters and protect the poor. Assuming that anti-disaster funding is generally sufficient in amount²⁹, the facility could also be used to frontload disbursements of external finance and avoid disrupting government budget plans, with donors reimbursing the facility later.

However, not all this funding would need to be additional or as grants. A considerable proportion could be met through higher augmentations of PRGFs and PRSCs by the IMF and World Bank for less debt-distressed countries, and around US\$130 million a year could come from FLEX. Donors could also fold their existing grant contingency support into such a facility.

- ***overall contingency mechanisms built into adjustment programmes.*** In order to ensure the effectiveness and speed of anti-shock financing, it would need to 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. It would be relatively easy to calculate the contingency allowance needed for each country, based on historical and forecast vulnerability indices of the types designed by the CDB, EU, OECD and UN.

In order to provide a basis for such up front financing, the BWI Boards would be presented with two sets of economic projections at the occasion of each semi-annual PRGF review. Both of these would aim to attain the MDGs: one would be a realistic “base case”, including “likely” shocks such as the impact of HIV/AIDs; the other would be a realistic assessment “low case”, allowing for shocks which would probably hit the economy, and conducting analysis of GDP and budget as well as balance of payments effects of the shock. The anti-shocks facility above would then be committed up to levels to keep MDG-related budget spending on track,

²⁸ This figure is calculated for IDA-only countries on the assumption that blend-countries can borrow from other sources, namely PRGF and IDA loans. Of the US\$48-50 billion over 11 years, less than half (roughly US\$22.5 billion) would be allocated to African IDA-only countries.

²⁹ However some confusion over the data on disaster funding exists, indicating that of the US\$6 billions allocated per annum, US\$2 billion is spent on refugees, with US\$1.5 billion of this being spent in donor countries on action relating to refugees.

and boost reserves to 6 months of imports, in the event of the low case occurring, and the funds representing the extra financing needed for the low case scenario would be put into a blocked fiscal contingency reserve account for the recipient country. Following any evidence of a shock (eg a trigger such as a projected shortfall of 2% of exports, reserves or budget revenues, or 0.25% of GDP), a rapid-response analysis mission (by the BWIs together with the EU and a bilateral donor) would assess its impact and immediately recommend disbursements, which would occur within a maximum of 3 months after the shock.

Four questions might be asked about such a fund:

- **How do we avoid a “moral hazard” that countries might rely on guaranteed external finance and not take serious steps to prevent or adjust to shocks ?** While this has been a problem with some past compensatory finance, the use of the funding for MDG-related budget spending and reserves enhancement, as well as to fund specific measures to prevent future disasters and protect the poor, would automatically prevent this moral hazard. No additional conditionality or “pre-qualification” mechanism based on developing comprehensive anti-shock plans in PRSPs should be accepted, as this would merely add to the already heavy burden of conditionality and delay vital funds.
- **Why should we set aside funding up front which might not need to be spent on shocks, rather than spending it on essential immediate needs ?** It has already been stressed that many OECD countries regard fiscal contingency reserves as essential to efficient budgeting: a case that is all the stronger for low-income countries which are highly vulnerable to shocks. In addition, one crucial lesson of development financing for Africa in the last 30 years has been that insufficient anti-shock action and finance has been a recipe for magnifying economic instability and other distortions, ending up costing donors far more in the long-term because they need to provide more new financing and debt relief. Therefore adequate contingency finance up front is essential. A small portion of the funding would, in an case, be set aside for guaranteed spending on measures to prevent future shocks and establish systems to protect the poor.
- **How do we distinguish clearly between shocks which require to be compensated and other reasons for slippages which require more adjustment ?** The EU, IMF and World Bank do not have problems doing this in the context of FLEX and CFF, or augmentations of PRGF or PRSCs. Nor does the UN have problems distinguishing costs and funding needs of natural disasters. It would simply be a question of extending these methods to cover other types of shocks.
- **What would be done with unspent funds ?** Depending on the assessment of future risks of shocks for the country, and a new assessment of its own ability to protect itself against shocks through budget revenue and foreign exchange reserves, they could be either carried over into the following year’s fiscal contingency reserve or reallocated to be spent on projects to protect the poor against future shocks.

Africa is already suffering from large shocks beyond its control, which will continue, and will play a major role in making it impossible for the continent to reach the MDGs. As African HIPC governments have themselves suggested, there is no better use or higher priority for additional aid funds than immediate, low-cost contingency financing. Together with measures to prevent shocks by better analysis and improved policymaking, and to offset or compensate specific types of shocks, this could guarantee Africa protection against shocks, ensuring that this key factor would no longer disrupt its progress towards the MDGs.

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Annex Table A.1.: Shocks Tested in Debt Sustainability Analyses

		Alternative Scenario 1								Alternative Scenario 2					Alternative Scenario 3								
Countries	no of stress tests	year of DSA	detail	Impact on NPV/X				year 150% reached under base	year 150% reached under scen 1	detail	Impact on NPV/X				year 150% reached under scen 2	detail	Impact on NPV/X				year 150% reached under scen 3	Notes	
				2004	2008	2012	2016				2004	2008	2012	2016			2004	2008	2012	2016			
Benin	3	2004	Revenue from Cotton Exports down by 20%	10%	30%	30%	40%	2006	2013	Lower grants from 2.5% GDP in 2003 to 2% GDP in 2010 and 1.5% GDP in 2020					2006	Higher public expenditure by 1.5% GDP in 2003 and 2004 and 0.6% higher in 2005; then 2.5% higher over 2006-2021							
Burkina Faso	2	2002	Historical Trend - GDP, X, M and DBR over projection period at 1995-2001 average rate	26%	117%	243%	403%	2017	not in proj period	MDG scenario: assumes all MDGs met by 2015 i.e. GDP growth 1% higher than baseline	0	0	0	0	2017								
Cameroon	3	2003	Lower exports by 1 standard deviation in 2003 and 2004	15%	48%			2004	2004 - but rises again	US\$ exchange rate 2 standard deviations lower in 2003	0	0			2004	Transfers at historical average minus 2 standard deviations	3%	4%				2004	
Chad	4 + Bound Tests	2003	Historical Trend - (GDP growth, nominal interest rate, current acc deficit and GDP deflator growth)	17%	26%			2004		Temporary negative oil price shock in 2004-2008 of 1 standard deviation	4%	15%				Permanent negative oil price Shock in 2004-2005 of 1 standard deviation	4%	12%					6 Bounds Tests: 2 standard deviation Shocks to the variables from scenario 1 and combinations of these
Congo, Dem. Rep.	2	2003	Export growth 12% lower in 2003-2005 then 7% lower in 2006-2013 and 5% lower in 2014-2022	35%	63%	92%	135%	2006	not in proj period	Lower concessionality on borrowing: 3% increase in interest rate for bilateral debt and from 2009 onwards for all non-conc debt	2%	2%	14%	34%	2006								
Congo, Rep.	2 + Bound Tests	2004	Historical Trend: GDP deflator, current account and non-debt creating flows growing at historical average over 2004-2023	40%	83%	120%	244%	not in proj period	not in proj period	New public sector loans on less favorable terms in 2004-2023: interest on borrowing 2% higher with grace and maturity unchanged	0	2%	3%	4%	not in proj period								6 Bounds Tests: 1 standard deviation shock to the variables in scenario 1 and combination of these

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Table A1 continued																						
Cote d'Ivoire	2	2002	GDP growth 2% lower over 2002-2020 --> total revenue declines by 1/3 by 2020	4%	6%	14%	25%	already reached	already reached	Export prices 25% lower in 2002 with same implications for revenue as in scenario 1	15%	12%	10%	10%	already reached							
Ethiopia	4	2004	Higher GDP growth and higher exports. Also share of grants is reduced slightly	0	2%	1%	5%	2021	2020	Lower GDP growth by 2% and lower coffee prices by 25% in 2004/2005	4%	18%	37%	49%	not in proj period	Lower concessional lending by 10% of total assistance and grants increase by the same amount	0	11%	16%	19%	2018	Fourth scenario involves lower GDP growth by 2%
Ghana	3	2004	ToT shock: price of cocoa reduced in 2004 by 1 standard deviation of historical price, throughout projection period	0	28%	30%	39%	already reached	already reached but rises again above 150% in 2016	Reduction in external grants from 30 to 10% of total over projection period. At same time concessional borrowing increases.	0	14%	26%	42%	already reached but rises again above 150% in 2016	Lower GDP growth by 1 standard deviation	0	9%	18%	38%	already reached but rises again above 150% in 2016	
Guinea	2	2000	Lower exports by 2% - historical average of 1991-1998	15%	26%	40%	56%	2005	2008 but rises above 150% in 2016	Less concessional borrowing - 3% interest rate, 5 year grace and repayment over 15 years with 30% grant element	18%	41%	64%	80%	not in proj period							
Guinea-Bissau	2	2000	Lower Cashew export prices by 20% after 2001	13%	24%	28%	37%	not in proj period	not in proj period	Less concessional terms: 10 years including 2 years grace and a 5.59% interest rate	47%	83%	89%	91%	not in proj period							
Kenya	6	2004	Export growth at historical average minus 2 standard deviations in 2004-2005	3%	21%	21%	20%	already reached	already reached but rises again above 150% in 2010	Non-interest current account at historical average minus 2 standard deviations in 2004-05	9%	23%	16%	11%	already reached	Price of main export commodity at historical average minus 2 standard deviations in 2004-05	1%	8%	6%	8%	already reached	3 additional scenarios: 1) Net official transfers at historical average minus 2 standard deviations. 2) Scenario 1 and 2 together but with 1 standard deviation. 3) 10% of GDP increase in non-debt creating flows
Madagascar	2	2000	GDP growth 2.3% lower from 2000 onwards, with export and import volumes lowered consistently with the lower GDP growth	12%	17%	20%		2009		Lower grants share in external project financing from 60% in 2000 to 50% in 2010.	1%	4%	5%									
Malawi	2	2000	Lower export earnings	15%	28%	34%	45%	2015	not in proj period	Less concessional financing	22%	25%	24%	22%	2019							

Protecting Africa Against "Shocks"

Table A1 continued																						
Mali		2	2003	Gold and Cotton prices reduced by 10% and production of Cotton reduced by 10% also.	3%	5%	15%	20%	2003	2003 but rises above 150% in 2012	Cyclical 2-year drought occurring after each 5-year period --> 10% reduction in agricultural production during drought periods.	2%	34%	93%	137%	2003 but rises above 150% in 2008						
Mauritania		6	2003	GDP growth, export value growth, official transfers as % of GDP and growth of GDP deflator all at historical averages between 2008 - 2013	22%	65%			2006	2009	Real GDP growth at historical average minus 2 standard deviations in 2003-2004	0	0			2006	Export value growth at historical average minus 1 standard deviations in 2003-2004	50%	123%	not in proj period	3 other scenarios: 1) US\$ GDP deflator at historical average minus 2 standard deviations in 2003. 2) Net official transfers at historical average minus 2 standard deviations. 3) Combinations of all the scenarios	
Mozambique	1 + 7 Bound Tests		2004	Historic averages between 2004-2008: Real GDP, nominal interest rate, \$ deflator, non-interest current account and non-debt inflows.	88%	163%			not in proj period	not in proj period	Bound Test 1: Nominal interest rate at historical average plus 2 standard deviations	88%	1%			not in proj period	Bound Test 2: Real GDP growth at historical average minus 2 standard deviations.	88%	19%	not in proj period	Other 5 Bound Tests: 1) US\$ deflator 2) non-interest current account both at historic averages minus 2 standard deviations. 3) combination of other tests 4) on-time 30% depreciation in 2004 5) External grants at historic average minus 2 standard	
Niger		2	2004	Less favourable terms on external financing: Only 50% grants, with shortfall met by increased new borrowing. The average grant element of new borrowing is to be 50%	6%	18%	27%		not in proj period	not in proj period	Lower GDP growth by 1.5% per year over the whole projection period	2%	23%	43%		not in proj period						
Rwanda		1	2000	One-time 10% shock to export value in 2001, then a resumption of export growth by the same rate as the baseline from 2002 onwards	30%	26%	24%	20%	2019	not in proj period												
Sao Tome & Princ.		3	2000	Development of an oil field between 2006-2016	0	370%	300%	222%	not in proj period	2007	Lower growth rates (2%) assuming a lack of agricultural diversification and no take-off of the tourism sector	55%	54%	53%	50%	not in proj period	Less concessional assistance, with a reduction in the average grant element from 70% to 35%.	90%	147%	178%	222%	not in proj period

