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## **Dampening the Vulnerability to Price Shocks: a Role for Aid**

by

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### **1. Introduction**

The interest recently shown in global policies on natural resources and raw materials in the effort to improve governance and reduce conflicts is shedding light once again on the long-standing problem of the international price fluctuations affecting developing countries. This renewal of interest comes after a lengthy period during which the very idea of a global policy for dealing with price shocks was out of favour because of measures that failed to take due account of market mechanisms. During this period, the magnitude of international price shocks did not diminish, and indeed increased, and a number of countries obviously remain vulnerable to them. In consequence, after two decades of market liberalization, the question of determining how the international community might contribute to dampening price shocks has once again come to the fore.

The primary commodities issue is obviously not limited to the impact of price shocks. Surprisingly enough, they are sometimes not taken into account by recent works dealing with the impact of primary commodities on economic growth, where either their positive effect on financial resources or their negative effect on institutions or behaviours are considered (Easterly and Levine 2003). However, the price variability appears in the recent economic literature as importantly affecting the primary commodities market dynamic through its impact on investment, storage and production (Pindyck 2002).

Let us recall the time frame of price variations. Developing countries face three sorts of price fluctuations. In the short-term (variations shorter than one year), and in many cases, the market instruments allow the countries to be hedged against associated risks. However, market instruments are not available for all commodities and for all developing countries. Therefore, there may be a room for a development assistance policy aimed at enlarging this availability, or to support the use of appropriate financial instruments. In the long-term, the problem is not any more the price variability, but the often decreasing trend of the relative prices of commodities, which is crucial for the poor countries. Then, the answer can only come from a change in the production structure improving the economic diversification, what means the developing process itself. Between the two time horizons, in the medium-term, developing countries stay vulnerable to year to year fluctuations, which are the source of shocks strong and costly. This is that kind of price variability which is our concern.

The purpose of this communication is to examine what kind of global measures may be efficiently implemented to help the developing countries to face price shocks, avoiding the past failures, which needs to take into account the long term trend of the markets. Firstly, we recall the nature of the vulnerability to price shocks: this legitimates to make the dampening

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of these shocks a reasonable goal for the development cooperation policy. Then, we consider the rationality of some international schemes of insurance or of guarantee which could be implemented through international assistance for countries facing price shocks: this assistance should be provided on a macroeconomic level, in particular through debt management, and on a microeconomic level, for instance through an insurance for the producers. The general principle underlying our proposals is that international assistance can enable developing countries to face price shocks, while taking into account the market signals, by offering a guarantee to these countries provided they respect some management rules.

## **2. The Vulnerability to Price Shocks**

It is difficult to design rational measures for dampening price shocks without inquiring about the reasons why such shocks can jeopardize development. There is clear evidence of the negative effects of export instability on growth (see, for example, Collier, Gunning, and Associates 2000; Change[Combes and Guillaumont 2002] Dawe 1996; Fosu 1992; Guillaumont 1987, 1994; Guillaumont, Guillaumont Jeanneney, and Brun 1999). The vulnerability of a country towards price shocks results from three components: the size of the shocks or price instability, the exposure to the shocks, i.e. the channels through which the shocks are transmitted to the economy, and the resilience, i.e. the capacity to react or to manage the shocks (Combes and Guillaumont 2002). It is not an aim to assess the determinants of commodities price instability. We here recall the transmission channels of price shocks, and show how, besides other factors, development assistance can contribute to increase the resilience of the economy.

### *Transmission channels of price shocks.*

Price shocks have both a microeconomic and macroeconomic impact on growth and development. On the microeconomic level and in the agricultural area, when international price instability is transmitted directly to agricultural producers, its effects are more damaging to agricultural supply when producers are poor and unable to obtain insurance. In such circumstances, farmers are inclined either to scale back their investment and innovation owing to their apprehension about using riskier techniques or, even in a period of price drops, to forgo educating their children, which is difficult to reverse.

On the macroeconomic level, unstable international prices, because they lead to instability in export earnings, are also a factor in real exchange rate instability—that is, instability in the relative price of tradable and nontradable, which occurs regardless of the nature of the exchange arrangements in place. By disrupting signals about long-term market trends, this instability leads to poor resource allocation and hence to lower factor productivity.

Let us add that the impact of the fluctuations of exports earnings on the real exchange rate is not necessarily symmetric, in particular because of the domestic prices rigidity. The increase in the exports earnings during a boom period results in an appreciation of the real exchange rate and in a loss of competitiveness for the tradable goods sectors not associated to the boom (the so called “Dutch disease”). In a fixed exchange rate regime, the shortfall in the exports earnings is usually not important enough to result in an increase of competitiveness through a real depreciation; in a floating exchange rate regime, the nominal depreciation may be much more important than its past appreciation, because of the inflation it generates.

Moreover, the instability of export earnings induces a fiscal instability, which may generate serious unbalances. During expansionary periods, the growth of tax receipts, as well as the ease of recourse to external borrowing, leads to an increase in public expenditure. This results in public deficits during periods of declining prices. These deficits are difficult to absorb owing to the downward rigidity of expenditures, particularly in the case of wages and salaries. As a result, inflation and public indebtedness become a chronic problem.

Amongst the public expenditures, the debt service is usually one of the most affected by commodity prices shortfalls. The recurrent payment incidents in sub-Saharan African countries are easily explained by the size of the shocks with regard to the budgetary resources. The HIPC initiative and its bilateral components admittedly aim at insuring the long term debt sustainability, but in a framework which does not take into account the risk of transitory but major price shocks, likely to lead to a severe liquidity crisis. Then, without an appropriate support, the country may not be able to pay its debt service and may be submitted to sanctions. External financing is then interrupted, while the rating of country on financial markets deeply and durably deteriorates. The following recession is likely to change the initial liquidity crisis in a new solvency crisis.

Beside debt service, since public investment constitutes a more flexible component of public expenditure, its instability, induced by that of exports, is a factor of lower average rate of return (Guillaumont, Guillaumont Jeanneney, and Brun 1999).

Lastly, through the several channels we have just indicated, the export earnings instability and the related relative prices instability are likely to be a factor of political instability, due to the significant changes in the absolute and relative incomes it implies. Thus, this export (price) instability may be a relevant explanation for the relation found between the share of the primary commodities in exports and the risk of conflicts: Collier and Hoeffler (2002), who emphasized this relationship, suppose that the presence of primary commodities gives rise to a rent seeking behaviour and favours the rebels financing. Another reasonable assumption is that the instability of exports earnings, all the higher than exports are mainly primary commodities, exacerbates the frustration feelings. When the instability of the exports, weighted by the openness rate, is included in a conflict determination model à la Collier-Hoeffler, not only the risk of conflict significantly increases, but also it removes the significance of the share of the primary commodities in the exports (Chauvet and Guillaumont 2003). The impact of the export earnings instability on the political instability seems indeed to be an important channel through which it disrupts the growth sustainability (Arcand, Guillaumont and Guillaumont-Jeanneney 2001).

### *Aid as a Factor of Resilience to Price Shocks*

Recognizing the harmful nature of commodity price instability on the economies of exporting countries contributes toward justifying external assistance for such countries. Such aid is all the more justified in that, specifically in vulnerable countries (those subject to highly unstable world prices), aid has proven to be more effective in terms of growth than it has been in countries that are less vulnerable economically. As much as sound policy, vulnerability makes aid more effective or, what amounts to the same thing, aid attenuates the negative consequences of the vulnerability (Chauvet and Guillaumont 2001; Guillaumont and Chauvet 2000). In particular, aid is marginally more effective when it is provided during periods of

declining commodity prices (Collier and Dehn 2001). The various studies referred to here show both the negative effect of instability or price declines (an additive variable in econometric estimates) and the attenuation of this effect thanks to aid (multiplicative variable).

The role of aid towards the developing countries vulnerability to price shocks appears to be mainly to increase their resilience. As the experiment of the international agreements on prices during the past periods has shown, it is hardly possible to act efficiently on the evolution of international prices; in other words on the size of the shocks (Guillaumont and Guillaumont-Jeanneney 2003). Its action towards the exposure to the shocks is a long term one, because it involves a diversification of the exports, which results from the development itself. Concerning the resilience to price shocks, it can be increased not only by the volume of aid, but also by its modalities.

A quick examination of the several channels through which the international prices instability affects the development reveals that dampening prices shocks has both macroeconomic (through government budget, the real exchange rate, the policy stability) and microeconomic consequences (for the people concerned by the international prices fluctuation). Aid can intervene at these two levels to attenuate the vulnerability towards the international prices instability.

### **3. Aid to Face the Sectoral Macroeconomic Consequences of International Prices Instability**

The expression “dampening price shocks” most often refers to dampening price drops. However, price shocks may be positive as well as negative. One clear lesson from the past 30 years is that rapid rises in international prices have drawn economies into situations that were particularly difficult to manage when prices later fell. Hence the occurrence of *positive and negative shocks in succession*—in other words, price instability—is at the root of the problem. It is as if price booms were perceived as permanent shocks, i.e. as information on long term trends, likely to sustain a higher level of expenditures, and shortfalls price as transitory shocks, to be compensated. A well designed dampening policy has to avoid this misunderstanding and to always refer to long term signals. It must help developing countries to face the risks linked to short term prices fluctuations, through an improvement of the management of their export booms so that they can increase their resilience to following price shortfalls.

The international community cannot content itself with stressing the importance of sound domestic macroeconomic management for purposes of dampening shocks, in that such shocks specifically make the conduct of economic policy more difficult. The role of the international community in response to shocks could be to act simultaneously to provide insurance and promote sound management. The general idea is that the international community could help to introduce automatic stabilization mechanisms by financing their costs subject to the adoption of agreed and controllable management rules. In short, the international community would offer a guarantee in exchange for a commitment as to rules. This “ex-ante” conditionality is essential to induce an automatic adaptation to shocks, without attempting to implement other kind of conditionality on the use of these new funds.

The financial instruments used to compensate shocks and implemented on the international level were not exactly in accordance with this principle, and have shown their limit: neither the IMF compensatory financing created in 1963, nor the exports earnings stabilization system, so called Stabex, which worked out during the Lomé Conventions,

covering the period 1975-2000, have correctly met this automatic adaptation principle. Even if the compensatory financing had been initially implemented with a less severe conditionality than the standby agreements, it simply became an additional mechanism to those of the IMF, in particular of the SAF and of the ESAF for the lower income countries, and therefore submitted to the same conditionality. The Stabex has been increasingly submitted to the contradiction inherent to its two basic principles: automatic adaptation and targeting of the compensation on agricultural sectors concerned by prices shortfall. That is why along with the successive conventions, under the pressure of European countries, the control of the Commission on the Stabex funds use has been increasingly important, implying longer and longer delays in the payments and removing their contra cyclical effects, without guarantying any compensation for the farmers concerned by the price shortfall (cf. Collier, Guillaumont, Guillaumont-Jeanneney and Gunning 1999 and CERDI 1998). The new mechanism, the “support to short term exports earnings fluctuations”, which follows the Stabex in the Cotonou convention, seems to be more a budgetary support than the Stabex, but it supposes an agreement on the funds allocation. However, it seems to be possible to adjust these working rules towards more automatic answers.

A convenient way to insure an automatic compensations to the shocks is to link the debt service to the evolution of the exported products prices. But another solution has to be found for the poor countries with a low level of indebtedness.

*Automatic adjustment of debt service to price shocks: an ex ante management of price shocks.*

The proposal to link the debt service to the evolution of the exported prices offers a macroeconomic application of the principle of not only compensating for price shortfall but also for instability. Alleviating debt service when prices are low, but increasing it when they are high induce a contra cyclic effect on public finance: the lowering of external debt service allows the economy to maintain the other domestic expenditures in spite of the decrease in tax revenues induced by the export shortfall. In the opposite situation, increasing the debt service avoids a destabilization and a hardly reversible situation due to the increase of public expenditures when the prices are raising quite rapidly. Such a system could be implemented for any commodities dependant country, which would wish for it, and which would effectively commit to increase the debt service when the prices increase. Credibility and respect of this commitment are sensitive issues in such a system.

Beyond these problems, the implementation of such a principle raises obviously several questions: (i) the nature of the reference (the price of one or several primary commodities or export earnings), (ii) how to compute this reference, (iii) the financing and the adaptation of the loan (cancelling or delaying the payments). The answer to the first question depends on whether the loan is sovereign or not. Referring to only one commodity price is not conceivable except for the case where the loan is contracted with a firm or an organisation whose activity is mainly linked to one particular commodity<sup>1</sup>. When a loan is granted to a government, the main primary exports, or even the whole exports are to be considered as a reference. The question is then to know if the reference must be an average price of the exports or the exports revenues. The advantage of this second solution, which is that of the

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<sup>1</sup> For instance, a loan granted to the North Province of Nouvelle-Calédonie by the AFD in 1990 in order to finance the repurchase of the shares of a mining firm was dependent on an “increase or delay of the capital payments if the nickel price LME is above or under 3,75\$/£b or 2,5\$/£b respectively, while the length of the loan cannot last over 13 years.

compensatory financing facility or the Stabex, is to take into account both price, and quantity shocks resulting from exogenous events, such as climatic events or from the price evolution itself. The first solution advantage is to enable the mechanism to be based on international rather than on national data.

The second question deals with the definition of a price or a revenue reference threshold to trigger the mechanism. It seems logical to refer either to a trend value of the price or to a price considered as reasonable by the main producers and consumers. To avoid the mechanism to be permanently activated, the values must be bounded down and up. These questions have been extensively studied about the several compensatory financing schemes (e.g. CERDI 1998).

Two approaches are conceivable about the financing. A global approach would be to modulate the whole debt service. Then, a multilateral rescheduling fund, financed by supplementary service debt paid by debtors taking advantage of temporarily higher prices, or by insurance contracts subscribed by the governments, and supplemented by official development assistance, at least for the initial endowment. This solution enables an equitable sharing of the costs between the creditors. A loan by loan approach would consist in new kind of loans including an adjustment of payment modalities. This second approach makes the creditors and debtors aware of their responsibilities, as they can't have, in last resort, a risk coverage by an external structure. However, until a new generation of loans has been substituted to the last one, this approach is not enough.

Beside the loans with adjusted debt service, whose management is necessarily complex, other schemes are conceivable and deserve an examination. For example, if any concessionary loan is in fact a combination of a classical loan and of a grant, we can imagine a scheme of financing based on loans with constant annuities and grants mobilizable in case of exogenous temporarily shock to cover the debt service, partly or entirely. These grants would be financed by a decrease in the rate of the concessionary loan, induced by smaller interests bonification or shorter period of amortization<sup>2</sup>. This kind of scheme avoids the problem faced to adjust upwards the debt service when export price increases. The fiscal management of the loan would stay classical, but some payments could be covered, partly or entirely, by the associated grant activated in case of decreasing prices. Without any shock, we could imagine to use the grant, or a part of it, to cover the last payments<sup>3</sup>. However, the disadvantage of this approach is that it doesn't work symmetrically in case of increase or decrease in the prices and it provides no incentive for a sound management of the booms. We could imagine that to be covered by this insurance, the countries have to commit to sound economic policies.

These examples emphasize the potential for financial instruments indexed on the shocks the poor countries face. However, its technical, juridical, financial and political feasibility are still to be analysed, as the way to articulate it with the other instruments of the official development assistance. Obviously, adopting such an approach raises the question of

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<sup>2</sup> As the long periods of payments delays for the sovereign concessionary loans would seem less justified if the financing scheme were not tied to the only intern characteristics of the project.

<sup>3</sup> The VAN of the grant would be inferior, because it would only be engaged at the end of the repayment. The part of concessionality of that scheme would not be entirely expectable, but would be borned out, depending on the moment where the grant would be solicited.

the coordination between the several creditors: without any coordination, a prisoner dilemma appears; no creditor has any incentive to adjust his instruments to price shocks, because he would facilitate the debt service owe to other creditors without any improvement for the beneficiary country.

The HIPC countries, which are particularly dependent on primary commodities, could be interested in such schedules, even if they already took advantage of debt cancellation. The aim of the HIPC initiative is to converge to a debt to export ratio equals to 150%. Anyway, the sustainability at this level is analysed assuming a certain exports growth rate, without any explicit mechanism to adjust the level of the debt and its service to the evolution of the exports price. We could apply the schedule we detailed above to the remaining debt. The benefit for the HIPC would crucially depend on the reference threshold of the export price. As a matter of fact, at the completion point, the international price of several price was relatively low and therefore could not be used as a reference threshold.

More generally, maintaining sovereign concessionary loans in countries highly vulnerability to price shocks may imply to move from an ex post to an ex ante management of the external debt service, according to the price shock. It means a debt service whose volume, or profile, would be, directly or not, adjusted according to these shocks. It is a major challenge both for the previsionsal fiscal management of the government and for the creditors coordination, financial engineering and concessionality management. This kind of approach would not be restricted to the debt stock of the countries eligible at the HIPC initiative. It would be a significant step towards a new indebtedness strategy more realistic, appropriate and sustainable.

#### *Price shocks management in poor countries financed by grants : a special fund for LDCs ?*

This type of proposal should not mask the reality that other countries, while not heavily indebted, remain extremely dependent on their commodity exports and subject to significant price shocks. It would be paradoxical for a new international initiative intended to address such shocks not to take such countries into account or to exclude them for the simple reason that they are not heavily indebted. The logical response would then be for automatic assistance in loan form to be extended to them in the event of price drops, subject to the condition that they undertake to repay the aid at a pace that itself depends on price developments, beyond a deterioration threshold. In this spirit, a reasonable proposition would be to create a new mechanism for automatic assistance in the event of price declines that is reserved for least developed countries. Let us recall that this category has been established by the United Nations with a view to ensuring differential treatment and is based on criteria whereby they may be identified as particularly vulnerable and as poor countries<sup>4</sup>. We also remember that aid is even more effective for economic growth as a country is more vulnerable (Guillaumont and Chauvet 2001). This aid, extended in grant form, would be distinct from the International Monetary Fund's compensatory financing. It should correspond to partial compensation granted subject to the sole condition that the country first undertook to limit the growth of its public expenditure during periods of high prices. The country would thus be prompted to set aside a portion of the gains registered when prices are high in order to maintain its spending levels when prices decline to the extent such drops are not offset by the

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<sup>4</sup> On the method for identifying the Least Developed Countries (LDCs), see United Nations (2000).

international community. This would thus play the role of insurance and constitute an incentive for self-insurance. It should be possible to mobilize the resources necessary for this mechanism insofar as it would be limited to the category of “Least developed countries”.<sup>5</sup>

#### **4. The role of Aid as an Instrument to Face Sectoral and Microeconomic Impact of International Price Instability.**

Since price instability has unfavorable effects on both the macroeconomic and sectoral levels, it is logical for the mechanisms to be designed in such a way as to remedy the effects of instability at each of these levels. Our focus here is on mechanisms aimed at attenuating the effects of price instability in the agricultural sector.

##### *Combining Macroeconomic and Sectoral Support*

The intensity with which international price instability is transmitted to exporters and agricultural producers depends on the tax and parafiscal policies of the government as regards agricultural exports. In the absence of such levies, price changes are transmitted in their entirety, which does not preclude an influence on general tax receipts owing to the impact of price changes on national income. In the case of levies that are proportional to the value of exports and constant, the direct income gain or loss is shared by the government and the sector, which may result in greater producer price instability than international price instability if marketing costs are rigid. Naturally, by modifying its tax rates, the government changes the conditions under which gains or losses are divided between itself and the stakeholders in the sector. For this reason, the external support for a policy aimed at using insurance mechanisms to reduce the risks incurred by producers owing to price variability must ensure that it does not constitute a pretext for a greater transfer of risk from the government to producers. In other words, it must be accompanied by fiscal conditionality.

##### *Insurance Schemes or Guarantee Funds ?<sup>6</sup>*

First, the international community could assist with establishing insurance mechanisms for agricultural producers in low-income countries who currently find them out of reach owing to their cost.<sup>1</sup> Producers could then take out insurance at a modest price, in the form of an option to sell a given volume of their harvest. The price at which the option is exercised should be set in terms of the past trend for the international price. There would be no risk of adverse selection, but rather a beneficial selection, as it affects those with the greatest need, and there would be no moral hazard in that farmers, at least those producing export crops, cannot influence prices and the government’s behavior is subject to conditionality. The external support should both cover a portion of the costs of managing the options and guarantee the financing of the possible gap between the option exercise price and the producer price corresponding to the international price at the time the export product is sold.

The advantage of this solution is that the sale of options could be managed by private operators. Moreover, it could be associated with insurance on the volume of harvests. To be sure, the ease with which this approach could be implemented would vary from country to

<sup>5</sup> It would not be out of the question to use in this way the “support in cases of short-term fluctuations in export earnings” provided under the Cotonou agreement, Change [ to the African, Caribbean, Pacific (ACP) countries with, moreover, less rigorous eligibility criteria for the ACP which are members of the category of the least developed countries as defined by the United Nations.

<sup>6</sup> This section is based on Collier and others (1999) and on Guillaumont P. and S. Guillaumont Jeanneney (1990)

country, depending on the scale, location, and dispersal of producing units. The major drawback is that it would dampen only negative shocks, as it is difficult to conceive of circumstances in which producers would undertake to pay back a portion of their earnings in the event of unusually high international prices.

This highlights the objective of reducing the variability of the prices paid to producers, notwithstanding the flaws in the operation of stabilization funds. Conceivably, the international community could provide its support to guarantee funds whose operation would meet a number of conditions. The two key conditions pertain to the flexibility of the reference price and the placement of the monetary assets involved.

The price guaranteed to the producer should be calculated on the basis of an international price that is gradually adjusted toward the international market trend and reflects normal marketing, transportation, and processing costs and perhaps a rate of public levies itself determined in light of the international trend price. This guaranteed price should be widely disseminated throughout the country by the media. The guarantee fund would be credited by the positive differentials between the effective international price and the trend price and be debited by the negative differentials.

The cash assets of the guarantee fund, built up both by contributions from producers during periods of high prices and by international assistance, should be managed by a body that is independent of the government and preferably has international status. These funds would thus be beyond the government's reach, which is necessary in order to ensure the credibility of the system and would make it possible to use them countercyclically.

The operation of such a guarantee is compatible with trade liberalization and can accommodate various forms of marketing, including those that give producers' associations an important role. In order to prevent differing systems in neighboring countries from favoring informal reexports to the country where the highest price is offered, it would be advisable to design the guarantee system in a regional context.

International community support for this kind of guarantee fund would be all the more justified should it cover products whose prices are structurally depressed and for which price variability is boosted by the subsidies that industrial countries pay to their own producers, in particular in the event of price declines.

## **5 Conclusion**

The negative consequences of commodity price instability on the political stability and economic development of poor countries are enough evidenced to legitimate international answers. Recent declarations of the French President at the Summit of the Heads of State of Africa and France and the coming G8 meeting offer an opportunity for new thinking and new initiatives in this field.

Lessons have been drawn from numerous measures which have been implemented for forty years and have often failed, mainly because they have neglected the long term market trends. There exists solutions, both adjusted to market trends and relying on contracts between the international community, the states and producer organisations. The common feature of the measures presented in this communication is to offer a guarantee in exchange of some rules, likely to improve the macroeconomic management of the shocks, and the protection of poor farmers as well.

These solutions could be combined with the external debt treatment for highly indebted countries and with schemes of contra-cyclical grants for the Least Developed Countries. It does not seem that huge resources are needed to implement such guarantees. Moreover it is conceivable to use existing schemes to this end, such as, after amendments, the Compensatory Finance Facility of the I.M.F., or the “support in case of short-term fluctuations of export earnings”, included in the Cotonou Convention.

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<sup>i</sup>. This section is based on Collier and others (1999) Change [ and on Guillaumont P. and S. Guillaumont Jeanneney (1990)