

# How to take into account vulnerability in aid allocation criteria and lack of human capital as well: improving the performance based allocation

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## Abstract

This paper considers why and how the Performance Based Allocation (PBA) used in multilateral development banks and in particular at IDA, could be improved by taking the structural handicaps of eligible countries into account. The PBA relies on a debatable definition of performance. It does not meet the equity concern raised by the existence of structural handicaps to growth. It neglects the lessons of the aid effectiveness literature. Finally, it suffers from some opacity. We show how it is possible to increase the share of specific groups of countries, such as Sub-Sahara Africa or post-conflict states, in a transparent manner.

**Keywords:** Aid Allocation, Economic Vulnerability, Human Capital, Performance Based Allocation, Multilateral Development Banks, Aid effectiveness

## Acknowledgments

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## 1. Introduction

For the main Multilateral Development Banks (MDBs) the principles determining the allocation of aid among eligible countries are governed by a formula, called “Performance Based Allocation” (PBA). This formula which has been used since 1977 by the World Bank for the International Development Association (IDA) has been modified several times. It is used by the main Multilateral Development Banks, namely African Development Bank (AfDF), Asian Development Bank (AsDB), Inter-American Development Bank (IDB), Caribbean Development Bank (CDB), and by the International Fund for Agricultural Development (IFAD), with minor differences in application between the institutions. The PBA formula is intended to determine the amount of aid to be received by a country according to two main indicators, income per capita and performance. Performance has an overwhelming weight. The different PBA formulae used by the various institutions and their modifications are given in Tables A1 and A2 in appendix. For instance the performance-based allocation formula used by the World Bank for IDA during the IDA15 and IDA16 periods (2008-2014) was the following<sup>1</sup>:

$$PBA_i = (CPR_i)^5 * (GNI / P)^{-0,125} * P_i \quad (Formula 1)$$

$PBA_i$  is the share of country  $i$  allocation based on performance,  $GNI/P$  the gross national income per capita (in U.S. dollars),  $P_i$  the population. The evaluation of the Country Performance Rating ( $CPR_i$ ) is itself the sum of three indicators :

$$CPR = 0.24 CPIA_{AtoC} + 0.68 CPIA_D + 0.08 ARPP$$

The CPIA (Country Policy and Institutional Assessment Index) is composed of sixteen indicators grouped into four clusters :- A) macroeconomic management, B) structural policies, C) social policies, D) public sector management and institutions (D refers to the concept of governance). One component of the CPR takes into account clusters A, B & C, while another one, which is given a higher weight, takes into account cluster D. Besides the two components related to the CPIA, the CPR also includes a rating for each country's implementation performance based on the World Bank's Annual Report on Portfolio Performance (ARPP). The level of the CPIA components is assessed by an internal evaluation process within the World Bank, and by the other MDBs for their own CPIA. The non-World Bank MDBs also have their own CPR or equivalent, combining CPIA components with portfolio assessment.

The application of the PBA formula has met several difficulties which have led to tempering the rule with numerous exceptions. In particular, minimum allocations have been set which are advantageous to very small countries, and a ceiling has been set to avoid the most populated countries receiving large shares of the total amount of aid. Moreover, a special treatment with

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<sup>1</sup> The exponent of CPR for IDA17 was lowered from 5 to 4. Its equivalent for the African Development Fund (ADF), the Country Policy Assessment (CPA) was increased from 4 to 4.125 for the ADF 13, beginning in 2014.

various modalities has been designed for countries called “fragile states” (or a similar name), whose poor performance did not allow them to receive a level of aid in accordance with their needs. During recent years the special treatment of fragile states has received growing attention, and increasing importance in the management of PBA, in particular for the replenishment of IDA17 and ADF13. It clearly illustrates the main issue faced by Performance Based Allocation, because the fragile states are mainly characterised by a low CPIA.

There has been growing discontent among researchers and policy makers about the PBA formula, as it is presently designed, in particular because it ignores the need for assistance generated by the economic vulnerability of countries (except at the Caribbean Development Bank, CDB), and by low levels of human capital. The detrimental consequences of the structural economic vulnerability of developing countries, notably of the least developed countries (LDCs), have been the object of much concern in the academic literature for a long time (see Ramey and Ramey, 1995; Hnatkowska and Loayza, 2005; Norrbin and Yigit, 2005 and a survey in Guillaumont, 2009a and 2009b), without being reflected in the PBA.

On the policy side ideas have been moving. In 2008 the African Development Bank (ADB) commissioned a study to examine how a reform of the PBA taking vulnerability into account could be implemented (Guillaumont *et al.*, 2009). Although the proposal was not endorsed, it has influenced thinking at the ADB, and resulted in some revision of the formula used for the new African Development Fund (Afd13), in particular through the inclusion of an index of infrastructure weakness (see ADF 2014 and Annex I). At the same time, the principle of including structural economic vulnerability in the aid allocation criteria has been proposed in several international meetings<sup>2</sup>. More recently in a resolution on the “smooth transition for countries graduating from the list of least developed countries” the UN General Assembly “invites development partners to consider least developed countries indicators, gross national income per capita, the human assets index and the economic vulnerability index as part of their criteria for allocating official development assistance” (Resolution A/C.2/67/L.57). Recently using a simple model prepared by FERDI (Fondation pour les études et recherches sur le développement international)<sup>3</sup>, the European Commission used a similar rule for the assessment of the allocation of the new European Development Fund and Development Cooperation Instrument. However there is still a high risk that the PBA formula will be maintained almost unchanged by the MDBs, partly as a result of a lack of clear proposed reforms.

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<sup>2</sup> One is the UN Secretary General report to the ECOSOC Development Cooperation Forum in 2008. Another is the final Declaration of the Joint Ministerial Forum on Debt Sustainability organized by the Commonwealth Secretariat and the Organisation internationale de la francophonie in April 2009. Moreover a key message of the Consultative Workshop on Policy Options to Address the Looming Debt Problems of Commonwealth Small Vulnerable Economies (Kingston, Jamaica, 27th September 2010) was “that the reform of aid allocation criteria to include consideration of structural handicaps to growth (vulnerability to exogenous shocks and low human capital) should be linked (for presentation purposes) to the achievement of MDGs and the provision/maintenance of social safety nets. Given the focus of the international community on the achievement of MDGs this would be critical to gain traction and support for this reform”. Finally the Franc Zone Ministers of Finance in their meeting of October 2010 have asked that the criteria of vulnerability be taken into account by MDBs and bilateral donors.

<sup>3</sup> Available upon request.

This article first explains why it would be legitimate to take the structural handicaps of developing countries into account to define aid allocation, for effectiveness and equity reasons, and for transparency. Then various solutions are presented to improve the Performance Based Allocation (PBA) used by the multilateral development banks. Our proposals are illustrated by simulations of IDA allocations, in order to demonstrate their feasibility and relevance with respect to their effectiveness, equity and transparency.

## **2. Why take into account structural handicaps in PBA?**

Four main reasons for improving the present PBA have been identified, related to performance, effectiveness, equity and transparency. They lead to propose the integration of structural economic vulnerability and low human capital, as structural handicaps, into the formula. Addressing the transparency issue we underline why this approach strongly differs from that which consists of applying a special treatment to a somewhat arbitrary category called “fragile states”.

### **What does *performance* mean?**

Without doubt the success of PBA has come from the word “performance”. Everybody wants developing countries to perform, and for aid to support performance. The problem lies in the ambiguity of the word “performance”, or more precisely in the fact that the performance used in the PBA formula is far from the normal meaning of performance. Performance normally refers to the results or outcomes obtained (in this case by a country) in a given initial or external context. PBA performance refers to a subjective assessment of the country policy, which is indeed a different animal (on the meaning and measurement of performance: Guillaumont and Chauvet, 2001, Guillaumont and Guillaumont Jeanneney, 1988). The CPIA, and in particular its cluster D, because it is not an index of development results and it is not assessed with respect to initial or external conditions, is not an index of performance in the real meaning of the word (see the paper by Guillaumont, McGillivray and Wagner in the same issue) . Put simply, governance is not performance.

Although the CPIA has been much debated and criticized (for instance Michailof 2005 and Kanbur 2005), we do not conclude that it should be removed from the formula, but we argue that it should not be given the overwhelming weight it receives today. The main concern comes from the fact that it is a subjective assessment, with regard to uniform norms, which does not fit well with the principles of alignment and ownership adopted by the Paris Declaration, reformulated in the Accra and Busan conferences, often reaffirmed at international meetings. These principles are intended to increase aid effectiveness.

### **Aid effectiveness: drawing on the lessons from research**

The CPIA was initially retained as a major aid allocation criterion because it was supposed to represent a factor of the effectiveness of aid for growth, a result of the famous paper by Burnside and Dollar (2000). However in the academic literature this result has been found not to be

significant (see for instance Hansen & Tarp 2001, Roodman 2007, Easterly et al 2004, or more recently Akramov 2012). The supposed relationship between governance and aid effectiveness has also been used to assess the selectivity of donors, i.e. the quality of their geographical aid allocation (Roodman, 2012), which has also been debated (Amprou et al, 2007). The main single reason to maintain the CPIA as a criterion of allocation and selectivity has changed: rather than a direct factor of current aid effectiveness, it is intended to be an incentive. This reflects the feeling that giving more help to those countries considered as “good guys” will push other countries to become more virtuous. This is a significant change compared to the initial Burnside and Dollar model where aid effectiveness was supposed to depend on policy, and policy not to depend on aid. Of course, as far as better policy is good for growth, an incentive for better policy may become an indirect factor of growth, regardless of the ownership issue mentioned above. It must be underlined, that having an improved measure of performance that takes into account the structural handicaps developing countries are facing would maintain the present signal effect of the PBA, but would also make it more acceptable to the recipient countries. So it could enhance their commitment to good policies.

While the impact of governance on aid effectiveness has been repeatedly debated in the academic literature, there is a consensus that considers that aid effectiveness depends on the specific features of the recipient countries (see a survey in Guillaumont and Wagner, 2013). Among these features, vulnerability to exogenous shocks has received increasing attention in the literature, but is not always fully understood in policy circles. Shocks and vulnerability are negative factors on development, whereas good governance is a positive factor, but both are, at the same time, factors which increase aid effectiveness. A major reason why aid can have a macro-economic impact on growth and development is its stabilizing impact: it dampens the negative impact of exogenous shocks on growth and development (Guillaumont and Chauvet 2001, Chauvet and Guillaumont 2009, Collier and Goderis 2009, Wagner 2014). As explained later, this stabilizing impact appears to be more effective for development than a single post shock treatment.

A low level of human capital, which is also a structural handicap to growth, as has been demonstrated by an abundant literature, does not impact aid effectiveness in the same way. While a given low level of human capital could be seen as a factor of low aid effectiveness, aid is likely to have an influence by its knowledge content (and by the share which is targeted at human capital): the marginal impact of aid on growth via human capital may then be considered to be higher when the initial level of human capital is lower.

There is another effectiveness reason for including structural handicaps in the allocation formula and lowering the weight given to governance in aid allocation. The CPIA is not stable and small changes in its level have amplified effects on aid allocation, which makes the allocation volatile and difficult to predict. Aid volatility is often said to be detrimental to policy management and growth, and aid predictability is a big concern for the international community (Bulíř & Hamann, 2008; Fielding & Mavrotas, 2008; Kodama, 2012). In fact there is a big impact on the amount of aid allocated to a country from a small change in its CPIA (Guillaumont et al, 2009). With a exponent of

5 for the CPR (4 for the CPA of the AfDB and in the formula adopted for IDA17) an increase/decrease of 10% results in an increase/decrease of 40% or 50% in the allocation. Also as CPIA is generally improving/deteriorating when exogenous economic conditions are favourable/unfavourable, it induces pro-cyclical aid allocations, which leads to less aid when the countries need more (see Guillaumont et al, 2010). Taking into account structural handicaps, whose indicators change slowly (less rapidly than the policy indicators), would reduce the volatility in aid allocation and so make the allocation more effective.

### **Equity: taking into account structural handicaps to make opportunities more equal between countries**

Why not simply consider that international equity should be a priority concern in aid allocation? (Roemer J.E.1998, World Bank 2006). There are many views as to what is equity. A now commonly accepted meaning is related to equal opportunities (Rawls 1971). Developing the idea of Rawls, Amartya Sen has shown that assessing a person's advantage and disadvantage involves looking at the person's ability to do or be what they want, or the "capabilities" of each person. This perspective leads to the view that low personal income is only one of several factors that influence the deprivation of basic capabilities<sup>4</sup>. Transposing the capability perspective to the country level in order to determine aid allocation involves taking into account the structural obstacles to growth each country faces. It would lead to a dynamic re-design of the PBA for equity in regard to growth prospects at the international level.

The present PBA formula, because it refers only to income per capita and to the quality of policies, fails to take into account any of the main structural handicaps to development, such as those used at the United Nations for the identification of LDCs. These are the economic vulnerability and the lack of human capital faced by a country independently of its present will. Structural economic vulnerability, as measured by the Economic Vulnerability Index for the identification of LDCs (see below), results from the recurrence of exogenous shocks, either natural or external (including droughts and commodity price instability), and from the exposure to these shocks (small country size, remoteness, structure of production). A low level of human capital is not only in itself a structural handicap to growth, it is also a handicap which interacts with vulnerability: it exacerbates the detrimental effects of recurrent shocks by lowering a country's resilience, and it is itself durably affected by negative shocks due to often irreversible effects on health and education (Guillaumont 2009b).

Some may wonder about the rationale of introducing human capital as well as income per capita into the allocation formula. But from a distributive perspective of aid allocation low levels of income per capita and human capital can be considered as two dimensions of poverty, which can be used together since they are not perfectly correlated. Moreover from a purely development perspective, if aid allocation aims at making growth opportunities more equal, human capital is the

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<sup>4</sup> The publications of Sen are multiple, in particular see *The Idea of Justice*, Penguin Books, London 2009.

only relevant criterion, since according to the convergence theory a low level of income per capita works as a positive factor for growth.

Finally the fact of considering only the quality of governance and policy as a criterion for aid allocation (with income per capita) has an unfair consequence. Populations suffering from bad government and policies are at the same time penalized by aid allocation. They are punished twice, thanks to aid donors! It does not mean that aid policy should not take the quality of governance and policy into account, but that it should do it mainly through aid modalities rather than through aid volume (for instance, when governance is weak, by giving less budget support and more project support, including through private channels). Relying on the Tinbergen principle which requires that there are as many policy instruments as there are goals, Paul Collier has recently and rightly argued in this direction, diverging from what was suggested by the Collier/Dollar model of aid allocation (see his Box 9.3 in the 2007 *World Development Report*, World Bank, 2007, and his proposals on “how to spend it”, Collier, 2012).

Thus, for equity reasons, that is to promote more equality of opportunity between nations and avoid double punishment, even more than for effectiveness reasons, it is legitimate to include indicators of structural handicaps, namely structural economic vulnerability and weakness of human capital, in aid allocation criteria<sup>5</sup>.

### **Transparency and consistency: making the rule general and effective, including small and fragile states**

Facing the difficulty of rigorously implementing PBA, the MDBs have been led to multiply the exceptions by way of caps and floors (in order to avoid too large and too small allocations respectively in very large or very small countries), and by way of a special treatment applied to some countries considered as “fragile”. Because they are treated as exceptions, these two methods by which vulnerability is indirectly addressed do not seem appropriate.

*Caps and floors* are a way by which the issue of country size, and of vulnerability, is addressed, and are a recognition that aid needs to be increased less than proportionally to the population size. In other words that aid allocation should take into account structural vulnerability. But it is an arbitrary way to do so, depending on the choice of thresholds. A simpler way to address this issue is to apply a exponent lower than 1 to population size in the PBA formula: size is then smoothly taken into account without threshold effects. This is the choice rightly made by the Asian Development Bank where in the PBA the population figure is included with an exponent of 0.6. Unfortunately, well aware of the problems raised by small size, both the World Bank and the African Development Bank have recently decided for IDA17 and ADF13 to increase the base allocation, thus assuring a minimum level for every country. The result of this arbitrary change is an increase in the number of countries for which the allocation is essentially determined by the minimal allocation, and which

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<sup>5</sup> This perspective differs from the approach corresponding to the “new geography of global poverty” (see Kanbur & Sumner, 2011) since it does not consider poor people whatever their location (including emerging countries) but the poor who have a low probability to get out of poverty due to the structural characteristics of their country.

then to a large extent escape the PBA rule. For them, all the more so since they have a high minimum allocation per capita, no criterion significantly matters, not the income per capita, nor the “performance”, nor even their relative population<sup>6</sup>. For instance, for IDA16 around 20 countries will have 90% of their allocation determined by the minimum allocation. In the case of ADF13 the number of countries benefitting from this measure is now more than one third (18 out of 41) of the eligible countries<sup>7</sup>.

An even more important exception to the general rule has been used to address the case of “*fragile states*”. A special treatment has been designed for those countries where the level of the Country Policy Rating (CPR) reached very low levels because of situations of chaos or civil conflict or deep state weakness, but where the countries needed significant support. The special treatment has taken various forms both over time and depending on the MDB. The name used to designate the countries benefitting from the special treatment has itself changed over time: for instance at the World Bank they were successively named LICUS, fragile states, post-conflict and re-engaging states, fragile and conflict affected, and now for IDA17 “turnaround countries” For a long time each institution had its own list and definition and its own treatment of the countries on the list, which has led to a feeling that the allocation to those fragile countries was discretionary, while the aim of the PBA was to determine an essentially automatic allocation. There is now an agreement between the MDBs about the use of a “harmonized list” of fragile states or countries in fragile situations, according to simple criteria: a CPIA not higher than 3.2 (on a scale from 1 to 6), or UN and/or regional “Peace keeping missions”, or “Political and Peace-building missions”. However for several reasons this reform does not provide the desired transparency and consistency.

First, the CPIA threshold of 3.2 introduces a discontinuity in the allocation, which is clearly inequitable. Dropping below the threshold and being included in the group of fragile states may result in a large change from the normal allocation (for instance if a decrease by 10% of the CPR/CPA means a country is classified as fragile, it may result in a large increase of the allocation, instead of a decrease by 40%, for an exponent of 4). In other words the special treatment for post-conflict and re-engaging countries has been leading to an allocation for these countries higher than for other countries with a higher CPR. This discontinuity, added to the impact of minimum allocations, significantly weakens the relationship between the CPR (or CPIA) and the level of allocation per capita, as illustrated by the following graph which presents IDA allocation per capita as a function of CPR (see Graph 1).

Second, the treatment of the fragile states (no matter what name is used) as special is not really transparent, either because the criteria prevailing for their identification (whatever the effort towards the harmonized list), or the criteria for the allocation between them, are often not fully

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<sup>6</sup> Looking at IDA15, we showed that some very small countries received an allocation per capita significantly higher than other countries with similar CPR, thanks to the application of floor or base allocation: for instance Tonga, Vanuatu and Sao-Tome and Principe with a CPR around 3.2 (Guillaumont et al., 2010).

<sup>7</sup> In the case of IDA17, among 80 eligible countries 23 are considered as “small” according to a UN criterion of less than 1.5 million people.

disclosed. Special cases are legitimate when they are exceptional and result from a clear policy decision (acute crises), not when they become a parallel and opaque system.

Third, the treatment of state fragility via the special treatment for fragile states is curative, not preventive. Fragile states are often identified as “failed states”, i.e. ex post. An ex ante or preventive treatment of fragility (targeted on the factors of fragility<sup>8</sup>) may be less costly than an ex post and curative treatment after a crisis or a conflict. An illustration is given by Sahel countries (Mali, Burkina Faso, Niger), none of them were considered to be fragile in 2011, while all were likely to become so if their structural economic vulnerability and their low level human capital (they all had a CPIA slightly above 3.2) were taken into account.

Finally, as a result both of floors and fragility treatment, the scope of the pure application of the PBA has been significantly narrowed. If one adds to the number of IDA or ADF eligible countries treated as fragile states the number of the non-fragile small countries whose allocation is essentially provided by the base allocation, the proportion of IDA (or ADF) eligible countries whose allocation really results from the PBA becomes a minority.

Moreover there is another major exception to the application of the PBA, not noted above since it does not affect the official allocation of IDA (or ADF). This is the high number of earmarked or trust funds at IDA (or ADF): the amount of money allocated from these funds corresponds to a significant share of the total commitments at IDA (23% in 2013), allowing them to escape from the PBA; it may also reflect some mistrust by bilateral donors of the general allocation rules they are supposed to support.

As a consequence of these practices, the allocation process lacks transparency. In the case of IDA, it has not been possible to exactly replicate country allocations from outside the World Bank, even when applying the principles of allocation as they are outlined in the official documents<sup>9</sup>.

In any case the deviation of the actual allocations from what should result from the pure PBA clearly shows that the PBA is not really effective. As shown in the following Figures, the allocation does not continuously decrease as a function of the CPR, mainly because of the treatment of the fragile states and small countries. Figure 1 for 2014 gives the official allocation of IDA resources per

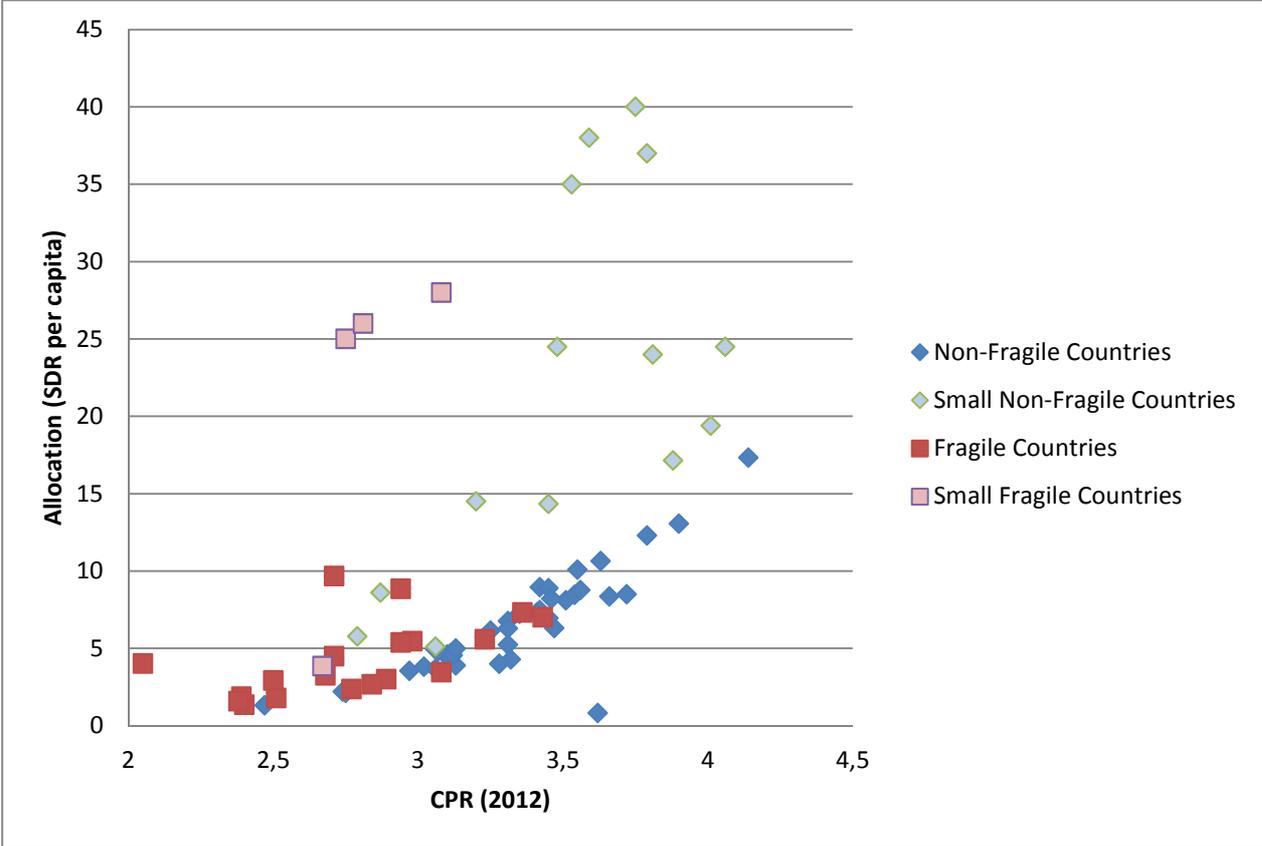
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<sup>8</sup> See in this issue the paper by Guillaume, McGillivray and Wagner

<sup>9</sup> The major problem when one tries to replicate the IDA allocation process was that the Post Conflict Performance Index (PCPI) was at that time confidential. The PCPI is used to calculate allocations during each year of the phase-out period (after 4 years for post-conflict countries and 2 years for re-engaging ones), the premium (calculated as a difference between the allocations computed using the PCPI and those computed using the PBA formula) is gradually reduced. Without this index, it is not possible to compute the post conflict and re-engaging premium. This premium has to be separated from the starting envelope before the allocation process begins. Benjamin Leo (2010), from the Center for Global Development, met a similar problem - he writes: “This paper has re-created the PBA using the (IDA) methodology to simulate the results. While every effort was made to ensure consistency with IDA’s actual allocation system, undoubtedly there are country-specific variations compared to IDA’s internally generated and authoritative figures. On average, final country-specific allocations differed by approximately 6 per cent compared to those published publicly by World Bank Staff” ( p. 6). The difficulty to replicate on a several year basis is reinforced by the fact that the allocations of the previous years before 2012 are still not disclosed.

capita as a function of the CPR and shows the specific position of both fragile and small countries, showing that the deviation from the PBA results from the treatment both of fragility and of small size.

**Figure 1 - IDA aid allocation per capita as a function of CPR in 2014**



**Source:** Authors' calculations

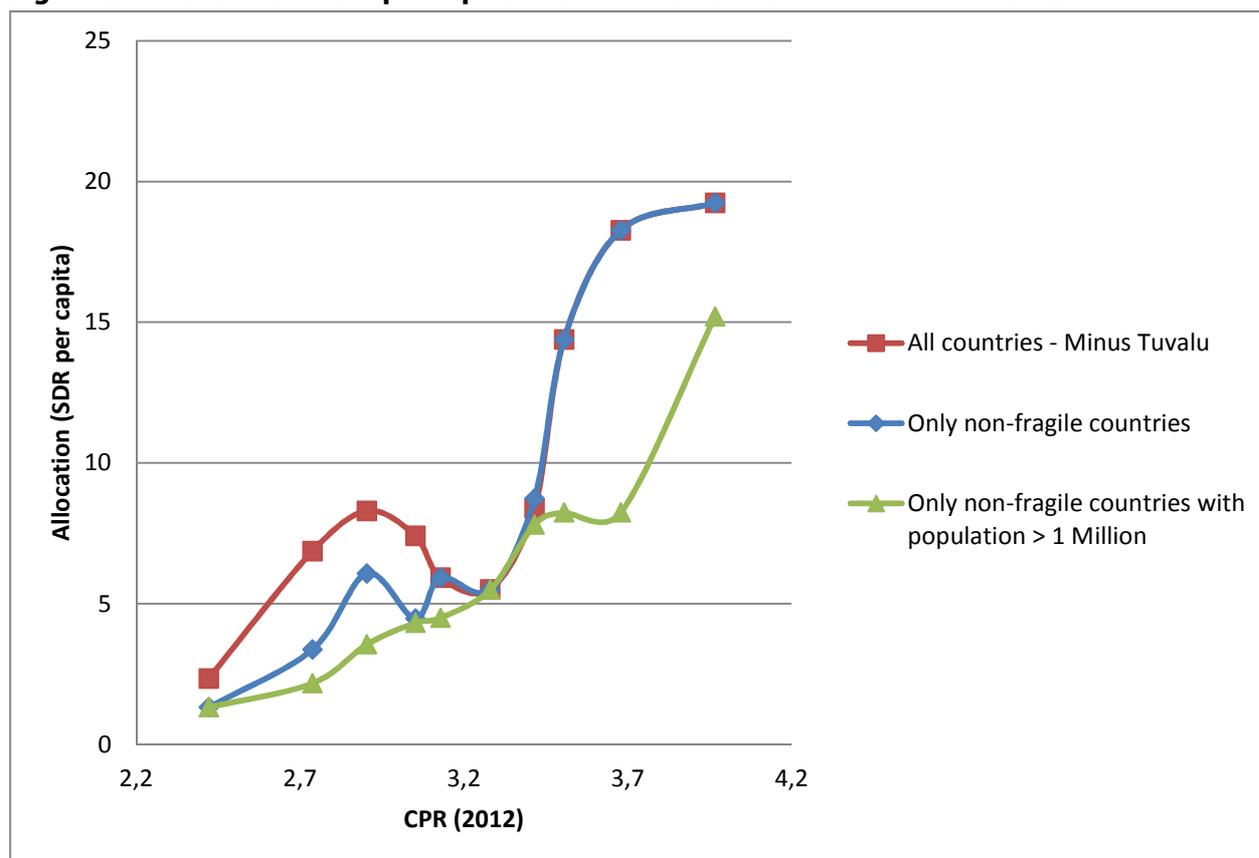
**Note:** Original IDA performance based allocations excluding adjustments for front- and back-loading and regional and intra-regional reallocation. Tuvalu with an allocation of 240 SDR per capita in 2014 has been excluded from this figure for the sake of clarity.

Let us now consider the relationship between CPR and aid per capita at the decile level for 2014 in Figure 2<sup>10</sup>. The curve of allocations appears highly unstable when all countries (except Tuvalu, an extreme outlier) are included (increasing, decreasing and increasing again). The instability is dampened when fragile countries are excluded, but the non-linear shape remains similar. When all the countries with a population below 1,000,000 are dropped the curve becomes more regular.<sup>11</sup>

<sup>10</sup> Deciles of CPR are computed over the whole sample.

<sup>11</sup> As can be seen in the 2009 figures (see Guillaumont, Guillaumont Jeanneney, Wagner, 2010), not only does aid allocation not globally reflect the impact that the formula intends to give to the CPR, but also aid commitments seem to deviate even more from the principle of an allocation according to the CPR. However it would be better to make comparisons on multi year periods.

**Figure 2 – IDA aid allocation per capita as a function of CPR at the decile level in 2014**



Source: Authors' calculations

Note: Original IDA performance based allocations excluding adjustments for front- and back-loading and regional and intra-regional reallocation. Tuvalu with an allocation of 240 SDR per capita in 2014 has been excluded from this figure for the sake of clarity.

### 3. Main lines of possible reforms

In the following, we examine how to address the issues with the PBA and consequently improve the PBA formula. The PBA could be changed to better meet the principles of equity, effectiveness and transparency that should be the rule with aid allocation<sup>12</sup>. It would then become more consistent with its original aim.

The rationale of the new formulae of allocation presented below is simple. The aim is to make the allocation more conducive to sustained growth and development, and more equitable by introducing into the formula indicators of the structural handicaps to growth, namely a) structural economic vulnerability and b) level of human capital. It is also to make the allocation process more transparent and consistent, by avoiding exceptions and treating the case of fragile states in an integrated and continuous framework, preventive as well as curative.

<sup>12</sup> Principles put forward in and explained in Guillaumont, 2008

## **Two ways to address the issues.**

We propose two new formulae, which both take into account the structural economic vulnerability of the recipient countries, and their lack of human capital. The first one, closer to the present formula, can simply be seen as improving the measurement of “performance”. In this case, the basis of the formula is not changed since the CPR remains the major criterion. The second formula aims at balancing efficiency and equity criteria. In both cases the new formula would allow treatment of fragile states in a progressive and integrated framework. These formulae should be assessed with regard to the agreed aim of IDA to give a priority to Sub Saharan Africa. It should be underlined that all of the proposed formulae should be simple and transparent, and so understandable by all stakeholders.

Each formula is illustrated by simulations done for the year 2009 (according to various weights given to the criteria). The repartition of allocations between different categories of countries (as used in 2009) is presented (post-conflict and re-engaging countries, least-developed countries, low income countries, Sub-Saharan Africa). The structural economic vulnerability of countries is measured by the Economic Vulnerability Index (EVI) and the level of human capital by the Human Assets Index (HAI), both used at the UN for the identification of Least Developed Countries. EVI is a composite indicator of seven components, three related to the size of recurrent exogenous shocks, either natural or external, and four related to the exposure to these shocks.<sup>13</sup> HAI is a composite index of health and education components<sup>14</sup>. Other similar indices could have been used. The traditional PBA as applied during the IDA15 period (for the year 2009), including the special window for post-conflict and re-engaging countries, is used as a benchmark<sup>15</sup>.

## **Adding political economy considerations**

Any change in the criteria implies that there will be losers as well as winners. The decrease in the allocation to some countries, whatever its legitimacy, must be manageable and politically acceptable. Our view is that the losers could be compensated, at least provisionally, and decreasingly. This could be done with additional resources put to one side to that end in the replenishment process, or through saving IDA resources by financing blend countries by more, or only by, IBRD loans made more concessional (as suggested independently of a reform of the criteria by Ben Leo, 2010). In our simulations the range of resources needed would have been between 10% and 14% of the total amount of 2009 resources (and could be reduced over the 3 year cycle). The donors could have covered this need with the additional resources for IDA16,

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<sup>13</sup> The components used in 2009 were the instability of exports of goods and services, the instability of agricultural production, the homelessness due to natural disasters for the shock components, the smallness of population (log) number, the remoteness from world markets, the export concentration and the share of agriculture, fisheries and forestry in GDP for the exposure to shock components (Guillaumont 2009c). The composition of the EVI was revised in 2011, but the new measurement of EVI does not seem more appropriate for use as an aid allocation criterion (see Guillaumont, 2013).

<sup>14</sup> The components of HAI are four indices related to child survival, percentage of population undernourished, literacy rate and secondary enrolment ratio.

<sup>15</sup> The same kind of simulations were done for the allocations of the African Development Fund (Guillaumont, Guillaumont Jeanneney and Vencatachellum, 2009),

compared to IDA15. In the future the needed resources could easily come from the graduation of several IDA eligible middle income countries.

#### 4. Structural handicaps in an augmented performance-based allocation

It should be recalled that the allocation of IDA or AFD resources is a 3 step process. First, resources are allocated using a formula based on performance, which is slightly different from one bank to another. Then the financial terms of allocations are determined (grants or loans) and the allocated amounts are adjusted accordingly (grants supporting a discount). Finally, for countries eligible for debt cancellation under the MDRI initiative, the cancelled debt service in the relevant fiscal year is netted out from that year's allocation. These netted-out amounts are then redistributed among aid eligible countries.

##### An augmented measure of performance

As underlined in a companion paper on the same issue by Guillaumont, McGillivray and Wagner, policy is influenced by shocks. The recurrence of exogenous shocks weakens policy and institutions. Econometric results show that the CPIA is partly determined by structural economic vulnerability, and to a lesser extent by low human capital. Moreover, as noted above, the CPIA and the CPR are often pro-cyclical. So adding indicators of economic vulnerability and of low human capital to the usual CPR can simply be seen as a way of treating the endogeneity of the CPR (i.e. purging the CPR from the structural handicaps of economic vulnerability and low level of human capital). In other words controlling for the structural handicaps makes the allocation more genuinely "performance based". The implicit model is the following :-.

If  $CPR = -a.EVI - b.LHAI + c + Residuals(CPR)$ , with  $(a>0 ; b>0)$

as the  $CPR$  is a negative function of the structural economic vulnerability (EVI) and of a low human capital  $LHAI$  (with  $LHAI = Max HAI - HAI$ )<sup>16</sup>, we obtain:

$$Residual (CPR) = CPR + a.EVI + b.LHAI - c$$

The residual of  $CPR$  can be seen as a more genuine measure of performance than the gross value of  $CPR$ . Thus adding structural vulnerability (through an index such as EVI), and the lack of human capital (through an index such as LHAI), to the CPR leads to an *Augmented Country Policy Rating (ACPR)*. This improved measurement of performance, leading to an augmented performance based allocation is more realistic and more transparent. The new formula is obtained by substituting  $ACPR$  to the actual  $CPR$ <sup>17</sup>, so that:

<sup>16</sup> It involves transforming the EVI and HAI indices from their initial 0 to 100 scale to a 1 to 6 scale, as for the CPR.

<sup>17</sup> In order to make the sum of the coefficients of CPR, EVI and LHAI equal to 1, we have :

$$ACPR = \frac{1}{1+a+b} CPR + \frac{a}{1+a+b} EVI + \frac{b}{1+a+b} LHAI$$

$$PBA_i = (ACPR_i)^5 \times (GNI / P)^{-0,125} \times P_i \quad (\text{Formula 2})$$

which maintains the same weight for the augmented country policy rating as the country policy rating in the current formula.

The companion paper on this issue by Guillaumont, McGillivray and Wagner gives various estimations of the CPIA as a function of the EVI, the HAI<sup>18</sup> and the level of income per capita (y) using panel data, and supplemented by quartile regressions. Taking the results of Guillaumont, McGillivray and Wagner into account<sup>19</sup>, the respective empirical weights of the three criteria would be: 0.70, 0.15, 0.15.

### Simulations according to empirical weights

As an illustration, we present a simulation (noted a) according to the above formula 2 with the following weights: 0.70 for CPR, 0.15 for EVI and for LHAI. We do not include a special window for the countries classified in 2009 as post conflict and reengaging, because the aim is to suppress the special window. Likewise we delete most of the caps and floors included in the original formula. We choose to only keep the special cap on India and Pakistan (because we fear that lifting this constraint might require too many changes in the parameterization of the formula). Accordingly, we suppress from the formula both the base allocation and the cap on aid per capita. In order to check the consistency of our simulation results with regard to the suppression of these constraints, we produce a second set of results with an adjusted population weight, choosing to set the population exponent to 0.8 in those simulations (noted b). The "Augmented Performance Based Allocation" simulations are then the following:

$$PBA_i = (0.7 * CPR_i + 0.15 * EVI_i + 0.15 * LHAI_i)^5 * (GNIpc_i)^{-0.125} * P_i \quad (\text{Simulation 1a})$$

$$PBA_i = (0.7 * CPR_i + 0.15 * EVI_i + 0.15 * LHAI_i)^5 * (GNIpc_i)^{-0.125} * P_i^{0.8} \quad (\text{Simulation 1b})$$

The results of these simulations (1a and 1b) are presented in Table 1 for selected groups of countries. The choice of these groups fits the wish of the World Bank to favour African and post-conflict countries<sup>20</sup>.

The aid surplus needed to avoid losses is 853 million SDR (10.2% of total allocation) according to simulation 1a, and 1046 million SDR (12.5% of total allocation) according to simulation 1b.

<sup>18</sup> Calculated in 2009 at the UN for the last review of the list of least developed countries.

<sup>19</sup> For the CPR the estimation was possible only on a cross section basis (74 IDA eligible countries and the year 2007) and with OLS (ordinary least squares). The results were the following (see Column 5 in Table 1 in Guillaumont, McGillivray and Wagner) :  $CPR = -0.14 EVI - 0.18 LHAI + 0.03 \log y + 1.3$

Only the EVI and HAI coefficients were significant at the ordinary levels of 10% and 5% respectively. Estimations of the CPIA as a function of the same variables give a stronger coefficient for EVI (-0.2) and a lower one for LHAI (-0.14). Using panel data for IDA countries (from 1977 to 2007) and quartile regressions, the results of the estimation for the two lowest quartiles of CPIA give similar significant coefficients (-0.2 and -0.15) (see Table 4, *ibid*).

<sup>20</sup> Results by country and by regional groups are available upon request.

According to these results, the share of the least developed countries and Sub-Saharan Africa is slightly increased, but that of post-conflict countries is reduced compared to the present allocations. To obtain a share allocated to post conflict countries closer to the present allocation, the weight given to EVI and LHAI has to be increased.

### **Simulations according to a priori weights**

As an illustration, we present the results of two other simulations: Simulation 2 gives an equal weight to CPR and to EVI. Simulation 3 also introduces LHAI, with an equal weight given to the three indicators.

$$ACPR = 0.5 CPR + 0.5 EVI \quad (\text{Simulation 2})$$

$$ACPR = 0.33 CPR + 0.33 EVI + 0.33 LHAI \quad (\text{Simulation 3})$$

As previously, we first keep the floors, caps, and a population exponent equal to 1 (Simulations 2a and 3a). Second we delete the caps and floors (except for the special cap on India and Pakistan), with a population exponent fixed at 0.8 (Simulations 2b and 3b).

First, let us consider the simulations with a population exponent equal to 1 (Simulations 2a and 3a of Table 1). With the simulation 2a the post-conflict and re-engaging countries obtain approximately the same share of allocations as with the present model, but of course there are significant deviations at the country level (for instance Côte d'Ivoire and Afghanistan receive less, because these countries have a not particularly high structural economic vulnerability). With the simulation 3a post-conflict and re-engaging countries obtain a significantly higher share.

The least developed countries, which are not only economically vulnerable, but also have a very low level of human capital, naturally receive the highest share with the third simulation which includes the HAI criterion. In both simulations 2 and 3 Sub Saharan Africa receives more than the present allocation, the allocation increasing as EVI and HAI are given a bigger weight. Interestingly enough, some countries which are neither post-conflict nor re-engaging, but are economically vulnerable and as such likely to become fragile states, are the losers in the present formula, but would receive more with our simulations. Most of the small size African countries are in this group. On the other hand some large, high CPR countries lose out (Kenya, Tanzania).

Simulations 2b and 3b represent a variation which is more continuous and integrated for all countries, because they use a population exponent lower than 1 (0.8), and suppress all the caps and floors (Table 1).

With this variation the allocation shares are close to those of simulations 2a and 3a. It suggests that a population exponent lower than 1 avoids the arbitrary thresholds due to base allocation and caps. The results that are the closest to the present allocation are obtained with simulation 2b. However they are not necessarily the best, since the simulation does not take into account the

needs resulting from a low level of human capital. Taking these needs into account (simulation 3b) increases the shares of Sub Saharan Africa, post-conflict countries, and LDCs.

Finally the results show that it is necessary to give higher weights to EVI and LHAI than those given according to the ACPR. However it should be kept in mind that there are other reasons for taking EVI and HAI into account other than trying to improve the performance measure, notably equity and transparency.

**Table 1 - Shares of total allocations by groups of countries according to the “Augmented Performance Base Allocation” formulas (in percentages, arithmetic weights)**

	Official 2009 allocations	Simulation 1a Population exponent equal to 1	Simulation 1b Population exponent equal to 0.8	Simulation 2a Population exponent equal to 1	Simulation 2b Population exponent equal to 0.8	Simulation 3a Population exponent equal to 1	Simulation 3b Population exponent equal to 0.8
Post conflict and re- engaging countries	9.65%	7.21%	7.61%	8.74%	8.99%	15.44%	15.88%
Least developed countries	48.10%	53.59%	54.59%	49.85%	51.29%	60.05%	61.91%
Low income countries	64.11%	63.35%	63.39%	60.12%	60.43%	63.84%	65.13%
Sub-Sahara Africa	49.31%	55.53%	56.01%	53.86%	53.10%	60.25%	60.80%

**Notes:** The total allocation is equal to 8345.20 million of SDR.

$$PBA_i = (0.7 * CPR_i + 0.15 * EVI_i + 0.15 * LHAI_i)^5 * (GNIpc_i)^{-0.125} * P_i \quad (Simulation 1a)$$

$$PBA_i = (0.7 * CPR_i + 0.15 * EVI_i + 0.15 * LHAI_i)^5 * (GNIpc_i)^{-0.125} * P_i^{0.8} \quad (Simulation 1b)$$

$$PBA_i = (0.5 * CPR_i + 0.5 * EVI_i)^5 * (GNIpc_i)^{-0.125} * P_i \quad (Simulation 2a)$$

$$PBA_i = (0.5 * CPR_i + 0.5 * EVI_i)^5 * (GNIpc_i)^{-0.125} * P_i^{0.8} \quad (Simulation 2b)$$

$$PBA_i = (0.33 * CPR_i + 0.33 * EVI_i + 0.33 * LHAI_i)^5 * (GNIpc_i)^{-0.125} * P_i \quad (Simulation 3a)$$

$$PBA_i = (0.33 * CPR_i + 0.33 * EVI_i + 0.33 * LHAI_i)^5 * (GNIpc_i)^{-0.125} * P_i^{0.8} \quad (Simulation 3b)$$

CPR, EVI and LHAI (Upper Bound-HAI) range between 1 and 6. GNIpc is in US\$.

**Source:** Authors' calculations

## 5. Structural handicaps in an allocation balancing effectiveness and equity

### Back to principles

While the previous simulations stick to the present PBA, trying only to improve the measurement of performance by taking into account the structural handicaps it depends on, we now broaden our approach to PBA by starting from the basic principles which should guide aid allocation: effectiveness, equity and transparency. Effectiveness is still assumed to depend mainly on policy (captured by CPR), at least through the signal or incentive it offers, but to some extent it is also assumed to depend on structural vulnerability. Equity is still assumed to be taken into account through level of income per capita, but it is also assumed to be dependent on how structural handicaps, vulnerability and low level of human capital are taken into account, in order that aid allocation contributes to equalizing opportunities. It should be recalled that structural vulnerability is both a factor of higher marginal effectiveness of aid, and a structural handicap to be compensated.

For these reasons we consider that a fair or well-balanced set of weights would be to weight equally quality of policy, structural vulnerability, and poverty level. However, so as to not deviate too much from the present formula, we have also examined other set of weights which use a bigger weight for the quality of policy (CPR).

As for transparency we have used as simple as possible a structure for the formula. All the four criteria were measured on the same scale (from 1 to 6, as are presently the CPIA and the CPR). Thus the allocation to each country (share of total amount to be allocated) can be expressed as a weighted average of the four criteria. This makes the contribution of each criterion clearer than with the present formula.

### Methodological options

The weighted average of the criteria can be arithmetic or geometric. The geometric one is closer to the present practices. The arithmetic one is even simpler, and we prefer it here. The choice between the two is of course not only a question of simplicity. With the geometric average the elasticity of allocation with respect to each criterion (for instance vulnerability) is constant and independent of the level of the other criteria (for instance policy), but the marginal contribution (or partial derivative) depends on the level of the criterion (decreasing with the level of the criterion: lower for a higher level of vulnerability), and on the level of the other criteria (the marginal impact of higher vulnerability will be higher if policy is good than if it is bad). With the arithmetic average the marginal contribution of each criterion is constant and independent of the level of the other criteria, but the elasticity depends on the level of the criterion (decreasing with the level of the criterion: lower for a higher level of vulnerability) and on the level of the other criteria as well (it will be lower for a better quality of policy). It can be argued that the marginal contribution is not only more understandable for stakeholders, but also more relevant, because a higher vulnerability

should have the same impact on allocation whatever the level of vulnerability. However the results appear to be very similar<sup>21</sup>

As before, we present simulations according to both population multipliers. With the multiplier 1 we maintain base allocation and caps, we suppress them when the exponent is 0.8<sup>22</sup>. The “Effectiveness and Equity Based Allocation” (EEBA) simulations are given below, with a decreasing weight given to CPR.

With a population exponent equal to 1, the new simulations are the following :

$$PBA_i = (0.5 * CPR_i + 0.25 * EVI_i + 0.125 * LHAI_i + 0.125 * LGNIpc_i) * P_i \quad (Simulation 4a)$$

$$PBA_i = (0.4 * CPR_i + 0.3 * EVI_i + 0.15 * LHAI_i + 0.15 * LGNIpc_i) * P_i \quad (Simulation 5a)$$

$$PBA_i = (0.33 * CPR_i + 0.33 * EVI_i + 0.16 * LHAI_i + 0.16 * LGNIpc_i) * P_i \quad (Simulation 6a)$$

With a population exponent equal to 0.8 the 3 formulae become :

$$PBA_i = (0.5 * CPR_i + 0.25 * EVI_i + 0.125 * LHAI_i + 0.125 * LGNIpc_i) * P_i^{0.8} \quad (Simulation 4b)$$

$$PBA_i = (0.4 * CPR_i + 0.3 * EVI_i + 0.15 * LHAI_i + 0.15 * LGNIpc_i) * P_i^{0.8} \quad (Simulation 5b)$$

$$PBA_i = (0.33 * CPR_i + 0.33 * EVI_i + 0.16 * LHAI_i + 0.16 * LGNIpc_i) * P_i^{0.8} \quad (Simulation 6b)$$

The results by groups of countries are given in Table 2.<sup>23</sup>

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<sup>21</sup> Geometric results by groups of countries are available in Table A3 in appendix.

<sup>22</sup> Again except the cap for India and Pakistan

<sup>23</sup> The results by countries and by regional groups of countries for the simulations are available upon request.

**Table 2 - Shares of the total allocation by groups of countries according to the “Effectiveness and Equity Based Allocation” formulas (in percentages, arithmetic weights)**

	Official 2009 allocations	Simulation 4a  Population exponent equal to 1	Simulation 4b  Population exponent equal to 0.8	Simulation 5a  Population exponent equal to 1	Simulation 5b  Population exponent equal to 0.8	Simulation 6a  Population exponent equal to 1	Simulation 6b  Population exponent equal to 0.8
Post conflict and re- engaging countries	9.65%	9.92%	10.68%	10.24%	11.01%	10.44%	11.21%
Least developed countries	48.10%	49.12%	49.82%	49.45%	50.18%	49.64%	50.39%
Low income countries	64.11%	58.81%	58.69%	58.76%	58.70%	58.71%	58.68%
Sub-Sahara Africa	49.31%	48.98%	49.44%	49.26%	49.72%	49.44%	49.88%

**Notes:** The total allocation is equal to 8345.20 million of SDR.

$$PBA_i = (0.5 * CPR_i + 0.25 * EVI_i + 0.125 * LHAI_i + 0.125 * LGNIpc_i) * P_i \quad (Simulation\ 4a)$$

$$PBA_i = (0.5 * CPR_i + 0.25 * EVI_i + 0.125 * LHAI_i + 0.125 * LGNIpc_i) * P_i^{0.8} \quad (Simulation\ 4b)$$

$$PBA_i = (0.4 * CPR_i + 0.3 * EVI_i + 0.15 * LHAI_i + 0.15 * LGNIpc_i) * P_i \quad (Simulation\ 5a)$$

$$PBA_i = (0.4 * CPR_i + 0.3 * EVI_i + 0.15 * LHAI_i + 0.15 * LGNIpc_i) * P_i^{0.8} \quad (Simulation\ 5b)$$

$$PBA_i = (0.33 * CPR_i + 0.33 * EVI_i + 0.16 * LHAI_i + 0.16 * LGNIpc_i) * P_i \quad (Simulation\ 6a)$$

$$PBA_i = (0.33 * CPR_i + 0.33 * EVI_i + 0.16 * LHAI_i + 0.16 * LGNIpc_i) * P_i^{0.8} \quad (Simulation\ 6b)$$

CPR, EVI, LHAI (Upper Bound-HAI) and LGNIpc range between 1 and 6. LGNIpc is an index based on the logarithm of GNI per capita.

**Source:** Authors' calculations

The aid surplus needed to avoid losses is approximately the same for the various simulations :- 13.3% of total allocation for simulations 4a and 4b, 13.6% for simulations 5a et 5b , 13.8% and 14% for simulations 6a and 6b.

Formula 6a/6b is our preferred simulation (although the losses are 14 %), because the shares of the preferred aid receiving countries (LDCs and Africa) are the highest. The country which loses most is Vietnam, but there is also a re-allocation among African countries; the countries with a relatively high CPIA lose out (mainly Tanzania and Ghana). On the other hand the fragile states (here classified as post-conflict or re-engaging) benefit from the reform.

## 6. Concluding remarks

### Summary results

Starting from the present PBA, we have looked for a formula leading to an aid allocation which better meets the three principles of effectiveness, equity and transparency, while still being politically acceptable. Several formulae have been considered, deviating gradually more and more from the current one, but all of them addressing the need to take into account the structural vulnerability of recipient countries, and the weakness of human capital. Closest to the present PBA is an “augmented PBA” where the measurement of performance by policy indicators is adjusted for the impact of structural handicaps, namely vulnerability and human capital. Less close, and simpler, is an allocation balancing effectiveness and equity criteria, which can be seen as an allocation aiming at more equal opportunities between countries. It is a weighted average of effectiveness and equity criteria, including structural vulnerability and human capital for both effectiveness and equity, policy for effectiveness and income per capita for equity. In the present case an arithmetic average has been preferred to the geometric one in order to make clearer the marginal contribution of each criterion to the allocation<sup>24</sup>.

For each case simulations of IDA allocation (for 2009) were run suppressing most of the exceptions (cap, floor, special treatment of fragile countries) which make the present PBA unclear and ineffective. The results show that an allocation of aid according to the principles mentioned above can lead to a preservation or a general increase in the share allocated to the least developed countries, to Africa, and to fragile states (here named “post-conflict and re-engaging countries”). Thus all these countries are treated in an integrated framework, and not with exceptions which become larger and larger. Moreover, since structural factors of fragility are considered instead of a debatable identification of “fragile states” (by this name or another one), the treatment of state fragility becomes preventive and not just curative. In any case the choice of weights and the preference given to poor, African or fragile states is a political choice. The total amount of losses induced for loser countries by the new formulae with the suggested weights remain in a range which would allow a transitional compensation, with the proviso that some additional resources can be mobilized.

### **A possible complement: adding indicators of progress towards peace and security into the assessment of performance**

Other modifications, more limited or complementary, could be envisaged. There have been several proposals to modify the content of the CPIA (not examined in this paper) (see Kanbur 2004). Here we consider one option that would be a complement to the refinement of the PBA proposed in this paper. Because the present CPR does not fairly assess the policy efforts made by the post-conflict and re-engaging states, a specific index of policy assessment has been created for these countries,

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<sup>24</sup> This choice however may be debated. In our proposal for the allocation of European aid, a geometrical weighting appeared more appropriate.

the post-conflict performance index (PCPI). It was revised during the IDA15 mid-term review so that it came closer to the CPIA in terms of criteria and scaling (IDA, 2009) and is now called IDA Special Allocation Index (ISAI). However, in order to treat the case of the post-conflict or fragile states in a more integrated and consistent manner, a solution would be to add to the CPIA an additional cluster, including only components that would be both dynamic (expressed as a variation) and mainly related to peace and security. Change would be close to zero for most conflict countries, but hopefully positive for post-conflict and re-engaging countries. Particular funding with a special index would then not be needed for them (with an arbitrary global envelope). The solution retained for IDA17 was to redesign a new category of “turnaround situations” (“a critical juncture...providing a significant opportunity for building stability and resilience to accelerate its transition out of fragility...”, with country eligibility resulting from a “two-filter approach” consisting in the application of qualitative criteria) (IDA, 2014). Using categories was preferred to using criteria, and fragility is still treated curatively, not preventively. It should be recognized that the most extreme cases of fragility and conflict cannot just be treated through an allocation formula. They demand a special political response.

### **Is compensatory finance a substitute?**

It is sometimes argued that vulnerability should be addressed in another way than through aid allocation criteria, in particular by compensating countries when exogenous shocks have occurred. The *ex post* compensation of shocks is useful, but does not allow the international community to fully address the vulnerability issue. As evidenced by past experience, the schemes which aim to provide compensatory finance when a shortfall occurs in export earnings, although often useful, generally take too long to be mobilized and are too conditional, or sometimes lead to wrong incentives. Also they risk being arbitrarily allocated. An interesting exception is given by the so-called “countercyclical loans” (as implemented by the Agence Française de Développement), where amortization can be postponed when a significant shock occurs on the level of merchandise export proceeds, but it is only a partial and progressive answer, not relevant for grant allocation.

More important, a vulnerability *ex ante* allocation criterion has a preventive role, whereas compensatory finance, as well as fragile state funding, is only curative. It is probably less costly and/or more effective to try to prevent collapses and conflicts than to overcome their effects.

### **The proposal in a broader context**

A reform of the allocation formula used by IDA and other multilateral banks does not have to be designed in a uniform manner for all development banks. In particular the vulnerability issue is of particular importance for Africa, which is why a reform according to the lines here suggested was first examined for the African Development Fund. In the African context the vulnerability issue should also be addressed by a re-examination of the rules guiding the allocation for regional (multinational) purposes, a topic not covered in this paper (see Guillaumont and Guillaumont Jeanneney, 2014).

Moreover, the allocation formulae proposed here for multilateral development banks may not be as relevant for the other donors as for these banks, although the general principles are. The rationale for a diversity of donors is a diversity of policies. But there is a need to insure a consistency between the various aid policies and the general principles of aid allocation. If the role of multilateral institutions was to make global aid allocation consistent with these principles (or with an optimal global allocation) their own rules of allocation would significantly differ from what they are now.

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## Appendix

**Table A1: Changes in the PBA formula at the World Bank (IDA) from 1991 to the current practice**

Periods	Evolution of the PBA formula	Evolution of the Performance Factor
<b>1991-1993</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.25} \times \text{Performance Factor}^{1.8}$	CPIA
<b>1994</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.25} \times \text{Performance Factor}^{1.8}$	$0.8\text{CPIA} + 0.2\text{PORT}$
<b>1995-1996</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.25} \times \text{Performance Factor}^{1.8}$	$0.9\text{CPIA} + 0.1\text{PORT}$
<b>1997</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{0.5}$ <i>If Performance rating less than 2.0</i>	$0.93\text{CPIA} + 0.07\text{PORT}$
	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{1.6}$ <i>If Performance rating from 2.0 to 2.9</i>	
	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{1.95}$ <i>If Performance rating higher than 2.9</i>	
<b>1998-2000</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{1.75}$ <i>If Performance rating less than 3.0</i>	$0.8\text{CPIA} + 0.2\text{PORT}$
	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{2.0}$ <i>If Performance rating higher than 3.0</i>	
	<i>The combined rating was then subjected to a governance discount of one-third for borrowers judged to have severe governance problems, which effectively lowered IDA allocations by about half. Finally, IDA allocations for borrowers with populations below 20 million whose combined ratings, less any governance discount, were more than 3.0 were increased by up to 20 percent under a small country premium. (source: OED IDA Review, February 2001)</i>	
<b>2000-2008</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{2.0}$	$(0.8\text{CPIA} + 0.2\text{PORT}) \times \text{Gov. Factor}$  <i>Where Gov. Factor = (Gov. Rating / 3.5)<sup>1.5</sup> and Gov. Rating = sum of CPIA criterion n°1 and CPIA criteria n°16 to 20 and the procurement practice criterion included in the ARPP rating.</i>
<b>2008-2014 (IDA 15 &amp; 16)</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{5.0}$	$(0.24\text{CPIA}_{\text{ABC}} + 0.08\text{PORT} + 0.68\text{CPIA}_{\text{B}})$
<b>Since 2014 (IDA 17)</b>	$\text{Population}^{1.0} \times \text{GNI}/\text{pc}^{-0.125} \times \text{Performance Factor}^{4.0}$	$(0.24\text{CPIA}_{\text{ABC}} + 0.08\text{PORT} + 0.68\text{CPIA}_{\text{B}})$

**Note:** The PBA formula was introduced at IDA in 1977. The PBA formulae give the relative allocation share for each IDA country. PORT refers to an IDA Performance Portfolio element from the Annual Review of Portfolio Performance - ARPP. The CPIA (Country Policy and Institutional Assessment) and the PORT measures have greatly changed over time.

Table A2: Changes in PBA formulae in Multilateral Development Banks

Institution	African Development Bank (AfDB)	Caribbean Development Bank (CDB)	Asian Development Bank (AsDB)	Inter-American Development Bank (IaDB)	International Fund for Agricultural Development (IFAD)	
Year of Launch	1999	2000	2001	2002	2005	
<b>Changes in the PBAs</b>	<p><b>1999-2001:</b>  <i>If Performance factor less than 3</i>                      Allocation share =  <math>\text{Population}^1 \times \text{GNI}/\text{pc}^{-0.125}</math>                      x Performance Factor<sup>1.75</sup></p> <p>Performance Factor =  <math>0.7\text{CPIA} + 0.3\text{PORT}</math></p> <p><i>If Performance factor higher than 3</i>                      Allocation share =  <math>\text{Population}^1 \times \text{GNI}/\text{pc}^{-0.125}</math>                      x Performance Factor<sup>2</sup></p> <p>Performance Factor =  <math>0.7\text{CPIA} + 0.3\text{PORT}</math></p>	<p><b>Since 2000:</b>                      Allocation share =  <math>\log \text{Population}^1 \times \text{GNI}/\text{pc}^{0.9}</math>                      x <math>\text{VUL}^{2.0} \times \text{Performance Factor}^{2.0}</math></p> <p>Performance Factor =  <math>0.7\text{CPIA} + 0.3\text{PORT}</math></p> <p><i>With VUL: the country vulnerability index produced at the CDB.</i></p>	<p><b>2001-2003:</b>                      Allocation share =  <math>\text{Population}^{0.75} \times \text{GNI}/\text{pc}^{0.25}</math>                      x Performance Factor<sup>1.8</sup></p> <p>Performance Factor =  <math>(0.55\text{CPIA} + 0.15\text{PORT} + 0.30\text{Gov}^2)</math></p> <p><b>Since 2004:</b>                      Allocation share =  <math>\text{Population}^{0.6} \times \text{GNI}/\text{pc}^{-0.25}</math>                      x Performance Factor<sup>2.0</sup></p> <p>Performance Factor =                      (policy and institutional rating)<sup>1.4</sup> x (governance rating)<sup>2</sup> x (portfolio performance rating)<sup>0.6</sup></p>	<p>Note: the formulae used at the IaDB give aid allocations in US dollars and not the shares of total allocation as others MDBs</p> <p><i>With Fund: the size of the FSO or the IFF envelope respectively.</i></p> <p><b>Since 2002:</b>  <i>Fund for special operations (FSO)</i>                      Dollar Allocation =  <math>[(0.22\text{Fund}) \times (\text{population}/\Sigma \text{population})] + [(0.18\text{Fund}) \times [(1/\text{GNI}/\text{pc})/\Sigma (1/\text{GNI}/\text{pc})] + [(0.6\text{Fund}) \times \text{Performance Factor}]</math></p> <p>Performance Factor =  <math>(0.7\text{CPIA} + 0.3\text{PORT})/\Sigma (0.7\text{CPIA} + 0.3\text{PORT})</math></p> <p><i>Intermediate Financing Facility (IFF)</i>                      Dollar Allocation =  <math>[(0.133\text{Fund}) \times (\text{population}/\Sigma \text{population})] + [(0.133\text{Fund}) \times [(1/\text{GNI}/\text{pc})/\Sigma (1/\text{GNI}/\text{pc})] + [(0.133\text{Fund}) \times (\text{debt}/\Sigma \text{debt})] + [(0.6\text{Fund}) \times \text{Performance Factor}]</math></p> <p>Performance Factor =  <math>(0.7\text{CPIA} + 0.3\text{PORT})/\Sigma (0.7\text{CPIA} + 0.3\text{PORT})</math></p>	<p><b>2005-2008:</b>                      Allocation share =  <math>\text{Rural Population}^{0.75} \times \text{GNI}/\text{pc}^{-0.25}</math>                      x Performance Factor<sup>2</sup></p> <p>Performance Factor =  <math>(0.2\text{CPIA} + 0.35\text{SPORT} + 0.45\text{Rural CPIA})</math></p> <p><b>Since 2008:</b>                      Allocation share =  <math>\text{Rural Population}^{0.45} \times \text{GNI}/\text{pc}^{-0.25}</math>                      x Performance Factor<sup>2</sup></p> <p>Performance Factor =  <math>(0.2\text{CPIA} + 0.35\text{SPORT} + 0.45\text{Rural CPIA})</math></p>	



*“Sur quoi la fondera-t-il l'économie du monde qu'il veut gouverner? Sera-ce sur le caprice de chaque particulier? Quelle confusion! Sera-ce sur la justice? Il l'ignore.”*

Pascal



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