The 2017 Version of the IMF and World Bank’s LIC Debt Sustainability Framework: “Significant Overhaul” or Obsolete?

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June 1 2018

1 The author thanks Hans Weisfeld for promptly clarifying questions on IMF (2017a). An early version of this paper was shared with the IMF and the World Bank. While this paper draws upon the work of the ADF Policy Innovation Lab, the views herein are those of the author alone acting in his independent capacity and should not be attributed to the African Development Bank, its Executive Directors or its Management.
Acronyms/Abbreviations

ADF: African Development Fund
BoP: Balance of Payments
CAD: Current account deficit
Cl: Composite Indicator
CPIA: Country Policy and Institutional Assessment
DRM: Domestic Revenue Mobilization
DS: Debt Sustainability
DSA: Debt Sustainability Analysis
DLP: Debt Limits Policy (of the IMF) [check]
NCBP: Non-concessional Borrowing Policy (of the World Bank) [check]
DSF: Debt Sustainability Framework
EM: Emerging Market
FDI: Foreign Direct Investment
Forex debt: Debt denominated in the hard currencies
FX: Foreign exchange
FXRA: Foreign exchange reserve adequacy
HIPC-MDRI: Heavily Indebted Poor Countries-Multilateral Debt Relief Initiative
MCLs: Moderately Concessional Loans
MDBs: Multilateral Development Banks
LIC: Low-Income Country
LIDC: Low-Income Developing Country
NR: Natural Resource
NRX: Natural Resource Exporting
ODA: Official Development Assistance
PFM: Public Finance Management
pp: percentage point
PPG: Public and Publicly Guaranteed
PV: Present value
SDGs: Sustainable Development Goals
SOE: State-owned enterprise (public enterprise)
SSA: Sub-Saharan African
ToT: Terms of Trade
TPD: Total Public Debt
TPDD: Total Public Debt Distress
WB: World Bank
WP: Working Paper
XDD: External debt distress
Summary

This paper critiques the 2017 version of the IMF and World Bank’s LIC DSF contained in IMF (2017a). It uses accumulated emerging market and developing country experience, especially from Africa, and economic logic to show that the 2017 DSF is obsolete and should not therefore be implemented. It recommends an alternative, simpler approach that responds to the exigencies of the day: that a new public debt crisis in ADF countries (African LIDCs in IMF parlance) is unfolding even as public investment needs for meeting the SDGs and creating jobs for Africa’s burgeoning youth remain vast.

The framework comes from the ADF Policy Innovation Lab, which began work in late 2015 on the debt sustainability implications of less concessional ODA (in terms of volumes, terms or both) going forward. It became clear from this work (ADF Lab 2016, Felino and Pinto 2017), which looked at 33 ADF countries, that the LIC DSF would not be suitable because of its overwhelming focus on PPG external debt risks: the attention needed to shift to public debt and its dynamics as the fundamental driver of external debt distress. Furthermore, the tussle between debt sustainability and development needed attention at a time when ODA was showing signs of becoming less plentiful. The work of the Lab fed into the report of the High Level Panel on reinvigorating African development finance (HLP 2017).

Evidence has grown, including from the IMF—see IMF (2017b) and especially the excellent report in IMF (2018a)—that public debt sustainability problems have intensified in ADF countries, investment needs are vast, and ODA is dwindling. The market has displaced the official sector in defining the marginal borrowing cost of a growing number of governments. One reason is that official funding sources are not enough for the huge public investments needed in human capital and infrastructure. Another reason uncovered by country visits by the ADF Policy Lab is that, as one official put it, “the market does not ask questions”—although it does price for risk and is less forgiving than official lenders.

Indeed, a major issue is the misuse of public resources among African LIDCs, including those from natural resource wealth and market borrowings. The main factors driving the deterioration in public debt dynamics include high interest rates on market borrowings, growth slowdowns, exchange rate collapses and growing primary fiscal deficits. The last factor incorporates a tussle between poor use of public funds, insufficient DRM and weak PFM systems on the one hand and spending pressures from the vast upfront investment needs in connection with infrastructure and SDGs on the other.

For example, at one extreme, Ghana and Mozambique face obvious public debt sustainability problems magnified by weak PFM systems. At the other extreme, Ethiopia, Kenya and Rwanda capture the constant tension between macroeconomic sustainability and vast investment needs in infrastructure present in all ADF countries. This tension is reflected in high fiscal deficits that spill over into burgeoning current account deficits and external debt dynamics.

Now assume that the LIC DSF did not exist and had to be designed from scratch, which is what the “significant overhaul” claimed in IMF (2017a) implies. It should at a minimum do the following:

1. Concentrate on public debt levels and dynamics because this is where the fundamental problem lies. In addition, examine vulnerability from current account deficits and external debt accumulation recognizing these are symptoms of rising fiscal deficits and the growing unsustainability in public debt dynamics
2. Recognize that the market and nonconcessional funding sources increasingly determine the marginal cost of government borrowing, even in countries which have not issued Eurobonds, though not always in transparent ways (recall Mozambique’s “hidden debt” uncovered in April 2016, at about the same time that it issued its first Eurobond in connection with restructuring the guaranteed debt of the state-owned tuna fishing company. Chad borrowed USD 1.45 billion in 2014 from Glencore and four banks to be repaid with crude oil shipments)

3. Accept that, in spite of the HIPC-MDRI debt write off, concessionality has not prevented the re-emergence of public debt sustainability problems or led to a solid foundation for meeting the SDGs. The reason is that concessionality cannot compensate for the serious gaps in leadership, economic governance, fiscal and financial institutions and the private investment climate. This calls for a tougher policy dialogue coordinated across the IMF, WB and AfDB instead of the present fragmented approach

4. Build in a discussion of how to reconcile debt sustainability with development. The market is unlikely to be a suitable financing source for the vast public investment needs, calling for more frontloading of ODA—but how to achieve this given the fiscal constraints donors face? The answer must involve some increase in the pricing of ODA and raising the bar for access, both of which can be facilitated by the fact that costly market borrowings now play a significant role among ADF countries combined with heterogeneity in their ability to use public resources well.

Notwithstanding the above requirements dictated by the aforementioned exigencies of the day, the 2017 version of the DSF (IMF 2017a) to be rolled out on July 1 2018 continues with the inherited focus on assessing distress in relation to the present value of PPG external debt. This was entirely appropriate when the LIC DSF was originally introduced to make a case for HIPC-MDRI debt relief: most public debt was then concessional PPG external debt from official sources, thereby also justifying the use of the present value of debt. But this is no longer true. While the 2017 DSF includes total public debt, it does so ignoring market realities and continuing the antiquated focus on the present value of debt. It should therefore not be implemented and an alternative developed that accords primacy to public debt and its dynamics, and recognizes the ever-present tension between debt sustainability and development even in the best-governed ADF countries. The features of such an alternative are sketched out and illustrated with the recent LIC DSF experience of Ethiopia.
I. **INTRODUCTION**

The 2017 IMF-WB Review of the LIC DSF was launched in early 2016 to overhaul the DSF. A consultation seminar was held on April 12, 2016, during the 2016 Spring Meetings at IMF HQ in Washington DC to discuss the scope and key topics to be included in the review. These included:

- Allowing for a changed financing landscape with more market debt from domestic and external sources and a shift away from official financing sources
- Strengthening the analysis of public debt by incorporating domestic debt (which is typically contracted at commercial terms)
- Reflecting market risks better (debt rollovers, yield spreads relative to benchmarks, foreign exchange reserve adequacy)
- Need for better anticipation of risks and more robust risk ratings.

In sum: the DSF needed to get in closer touch with the new financing realities in LICs, calling for greater emphasis on public debt, the growing role of market-based financing and foreign exchange reserve adequacy (FXRA). The review, which took more than one year and involved a joint IMF-World Bank team, culminated in an IMF Staff Report dated August 22 2017 (IMF 2017a). It was approved by the IMF’s Board in September 2017 and is due to be rolled out on July 1 2018 by the World Bank and IMF.

This paper critiques the IMF-WB 2017 review of the LIC DSF (“2017 DSF”) from the perspective of the client countries of the ADF, namely, the Sub-Saharan African countries included in the list of “Low-Income Developing Countries” (LIDCs) contained in Annex Table 1 of IMF (2018a). Its main conclusion is that the 2017 DSF falls short of the “significant overhaul” it claims to be and is obsolete. Hence, implementing it would be counterproductive. The main reasons are the following:

1. **Continued obsolete focus on PPG external debt.** This focus was entirely appropriate when the LIC DSF was introduced in 2004 to make a case for HIPC-MDRI debt relief. At that time, official external borrowings predominated in public debt, making PPG external debt an obvious variable to focus on. But once debt relief was provided, African LIC governments started borrowing from the markets, domestic and international. This would necessitate a shift to risks from total public debt, including its domestic component, and away from PPG external debt.

2. **Unsatisfactory incorporation of total public debt.** The 2017 DSF allows for risks associated with total public debt by simply grafting domestic debt onto the PV of external public debt, which continues to define the framework for risk assessment. This causes two problems. *First*, for African LICs as with most EMs before them, the causal flow is from unsustainable public finances to external debt: large fiscal deficits and adverse public debt dynamics spill over into current account deficits and external debt dynamics. To continue to focus on external debt is therefore to confuse the symptom with the malady. *Second*, the insistence on retaining the PV of external debt (computed using a 5% discount rate) as the variable of interest is outdated in two respects: (i) it obscures the insights that can be afforded by simply looking at the nominal debt-to-GDP ratio, in which case it becomes easy to interpret the dynamics based on primary fiscal balances and r-g, the interest rate-growth rate

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2 The author was present during this consultation seminar.
differential; and (ii) it is inconsistent in that market debt is included at face value, not at its present value discounted at 5% because this would give a number larger than the nominal debt value (since the interest rate on such debt is typically above 5%). But if one believed that 5% was an appropriate discount rate for assessing the “true” burden of debt, then it should be applied across the board. These are powerful reasons for abandoning the PV of debt concept and shifting to nominal debt. Besides, even the poorest and most fragile African LIDCs now borrow nonconcessionally at the margin, bringing us to the next point.

3. **Failure to incorporate market signals.** For a significant set of ADF countries, the market now determines the marginal cost of government borrowing. Those issuing Eurobonds have sovereign ratings from the major credit rating agencies. Likewise, domestic debt is typically issued on commercial terms—Ethiopia is a notable exception and Kenya introduced interest rate ceilings in late 2016—and most ADF countries have a high degree of open capital account openness. The 2017 DSF ignores this information, sticking to the PV of debt and assessing risk based on thresholds linked to the CPIA and now a new Composite Indicator based on past, narrowly defined instances of debt distress (linked to such variables as arrears to the IMF). Instead, more attention needs to be paid to market signals on devaluation and default risks.

4. **Unsuitability for reconciling debt sustainability and development.** IMF (2017a) notes: “CSOs have shown increased interest in the LIC DSF and have advocated its use as a tool to help determine how to finance the large development needs of LICs in the context of the efforts to achieve the Sustainable Development Goals (SDGs).” This claim notwithstanding, the estimated financing needs for the SDGs are so vast that they are likely to blow public debt and CAD sustainability out of the water even for the best-managed ADF countries, such as Rwanda, Kenya and Ethiopia. Considerable modification is needed, not just in the DSF, but the whole architecture of ODA, for a better reconciliation of development and debt sustainability.

Further, the LIC DSF even in its 2017 version tends to treat debt sustainability as an end in itself, not as a platform for development, as will become clear from the country examples in the next section. Moreover, the insistence on concessionality is out of sync with the fact that the market now determines the marginal cost of borrowing for a growing number of countries. Indeed, ADF countries, with the exception of the most fragile, should easily be able to cope with less concessional ODA if the root causes of unsustainable debt are addressed: inability to deliver on primary fiscal deficit targets, poor expenditure composition and misuse of public resources and natural resource wealth, weak growth policy and exchange rate collapses related to political and macro policy risks that magnify the burden of forex debt. These findings in Felino and Pinto (2017) are echoed in the IMF’s own excellent March 2018 LIDC debt paper (IMF 2018a), which also notes that grants and remittances are declining. These factors call for a sea change in the pricing and allocation of ODA and the nature of policy dialogue in order to increase the chances for better development outcomes in Sub-Saharan Africa.

This paper presents an alternative DSA approach for African LIDCs based on the analysis of the ADF Policy Lab described in two working papers: ADF Lab (2016) and Felino and Pinto (2017). These papers use exactly the same data as in the IMF-WB DSAs but employ a simpler approach which is likely to be more robust given the various data issues noted in IMF (2018a). Ultimately, DSA frameworks can only provide hypotheses that then require testing via country visits and discussions with various stakeholders. Such an approach has become urgent given the

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3 We use the terms “African LIDCs” and “ADF countries” interchangeably.
deterioration in public debt sustainability noted in Felino and Pinto (2017—henceforth, FP 2017) and confirmed in IMF (2018a). A new debt crisis is unfolding in Africa and a different DSA approach is needed that helps reconcile debt sustainability and development while allowing for country heterogeneity.

The next section provides three country examples to illustrate the shortcomings of the LIC DSF, which are unlikely to be addressed by its 2017 version. Section III describes the main reforms proposed in the 2017 DSF followed by a critique in section IV. Section V proposes an alternative approach illustrated by the Ethiopian experience in section VI, while section VII concludes.

II. THREE COUNTRY EXAMPLES

This section discusses recent DSAs for Ghana, Rwanda and Ethiopia to illustrate challenges associated with the LIC DSF that are unlikely to be remedied by the 2017 DSF. The ADF Policy Lab visited two of these countries during its work: Ghana and Rwanda.

Two points can be distilled from the country examples:

First, the LIC DSF does not give sufficient prominence to public debt and its dynamics. To anticipate the critique in section IV, the 2017 DSF retains the obsolete focus on PPG external debt. Adding on domestic debt in the manner proposed in IMF (2017a) to analyze risks from total public debt does not alter this conclusion. The DSF needs to become more market oriented and incorporate hard-won lessons from EMs in its prescriptions.

Second, the LIC DSF tends to treat debt sustainability as an end in itself. This is obvious from all three country examples, with important questions being left off the table. A more suitable approach would treat debt sustainability as a platform for development, not as an end in itself. Elements of an alternative approach will be spelt out in section V.

A third point is worth making. A growing body of evidence indicates that public debt sustainability problems are now entrenched in several African LIDCs and that a new debt crisis is sprouting. For example, IMF (2018a, pp 42-3) lists 8 ADF countries as being in debt distress as of end 2017 based on the LIC DSF: Chad, Eritrea, Somalia, South Sudan, Sudan, and Zimbabwe. In addition, Mozambique and Republic of Congo were in default and therefore classified as in debt distress. A further 7 ADF countries were at high risk of debt distress as of end 2017: Cameroon, Central African Republic, Ethiopia, Ghana, Mauritania, The Gambia and Zambia. Moreover, “Only in two were larger fiscal deficits linked to higher public investment, either in full (Cameroon) or in part (Zambia).” Ethiopia too falls into this category, as is apparent from IMF (2018b). This precarious situation imparts a measure of urgency to designing a DSF that can be linked to development financing needs and can be continuously updated instead of waiting for the normal Article IV consultation cycle, which could result in needless delays in diagnosis and policy prescription.

Ghana

Ghana was held up as the poster child for the HIPC-MDRI debt write-off in 2007, when it issued the first of its five [check] Eurobonds with the goal of using its newly discovered fiscal space to promote growth and development. Steven Radelet gave an upbeat account of 17 “emerging countries” in his 2010 book on Emerging Africa, opening with a glowing summary of Ghana’s achievements over the previous 15 years.
In January 2017, with Ghana already deeply mired in macroeconomic difficulty, a “fiscal hole” of 4% of GDP was discovered following the installation of a new government. Public debt had reached 74% of GDP at end-2016 compared to a projected 70.4% in the IMF-World Bank October 2016 debt sustainability analysis.

The negative debt outcome should not have come as a big surprise given obviously adverse public debt dynamics in earlier years and a weak track record on using public resources well—in fact, election issues included corruption, electricity shortages and insufficient attention to public value for money, resulting in the incumbent government being voted out. In other words, large fiscal deficits were not associated with investments that would spur future growth and taxes.

More surprising is the failure to come up with a decisive plan to address Ghana’s persistent fiscal imbalance in spite of its track record. For example, the DSA in IMF country report 16/16 (January 2016) recommended a strategy to lower government interest payments by substituting Eurobonds for local currency debt as part of “debt management”, an approach that has subsequently continued, as indicated in the DSA in IMF country report 16/321 (October 2016). This ignored the strong signals from the market on default risk—for example, the secondary market yield on Ghana’s 2020 Eurobond was 15% in early 2016. It also ignored a costly lesson from EMs on avoiding the build up of currency mismatches on the government’s balance sheet.

Preference has been given to short-term financial engineering ploys that increase fiscal risk over recognizing and addressing the country’s fundamental fiscal problem.

Indeed, the ADF Lab’s visit to Ghana in February 2017 indicated relying heavily on revenues from new oil fields as well as issuing Eurobonds (to avoid soaring interest costs in the domestic market) as a strategy for lowering the public debt-to-GDP ratio, reflecting the analysis in the October 2016 DSA. New oil production would raise growth rates, primary surpluses and foreign exchange reserves, while putting downward pressure on the cedi/USD rate. Shifting to Eurobonds would lower interest rate payments reported in the fiscal deficit (domestic borrowing costs were of the order of 25%) but at the cost of increasing currency mismatches and enhancing currency risks on the government’s balance sheet. Nowhere in the October 2016 DSA is the waste of public resources or the misuse of natural resource wealth mentioned. Debt sustainability is treated myopically as an end in itself.

Only in February 2017 were weaknesses in fiscal governance highlighted by attributing the “fiscal hole” to “significant public spending commitments that bypassed PFM systems”. Improving matters would require implementing “the new government’s intentions to reduce tax exemptions, improve tax compliance and review the widespread earmarking of revenues”; in short, ensuring the integrity of PFM systems and selecting and executing public investments carefully.

It is at least mildly shocking that a star of the post HIPC-MDRI era has not been able to implement basic PFM systems in spite of 10 years having gone by. It also underlines the importance of shifting the onus on re-attaining public debt sustainability to the Ghanaian leaders themselves and away from external bodies like the IMF, which can do little without commitment and leadership from the very top in Ghana itself. Indeed, the 4% of GDP fiscal hole occurred under the very nose of the IMF, with Ghana having been an Extended Credit Facility (ECF) IMF program country since April 2015.

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4 Quotes from IMF’s February 10 2017 Press Release 17/43.
Rwanda

Rwanda is the highest rated ADF country based on the CPIA and ranked 56th out of 190 countries in the 2017 World Bank’s Doing Business survey, second in Africa after Mauritius. It has been selected for the G20 Compact with Africa, the goal of which is to foster foreign direct investment from advanced countries by addressing impediments in both the host and home countries.

As part of its Vision 2020 strategy aimed at attaining middle-income status by 2020, significant public investment has been directed to “programs to improve social outcomes, increase agricultural productivity and transform the economy to higher value added activities, improve gender equality, and foster financial inclusion, among other things”.

The IMF 2017 Article IV report notes: “Growth-enhancing infrastructure investment has continued, with projects carefully chosen to maintain Rwanda’s low debt risk rating, while domestic revenues and external financing have increased and domestic financing was limited. Supervisory frameworks have been strengthened, and exchange rate flexibility has been the centerpiece of adjustment policies to address external imbalances.”

Nevertheless, current account deficits (CAD) are unsustainably high, at 14.4% of GDP in 2016 with projections of 10.1% for 2017 and 11.3% for 2018. The IMF reports two CAD numbers: the standard one and one without big projects. Even the latter is exceptionally large, close to double digits as a percentage of GDP. In fact, S&P downgraded Rwanda from B+ from B in September 2016 on account of its swelling CAD, although the IMF DSF continues to rate the country at low risk of debt distress.

Rwanda’s experience captures the tension between vast upfront public investment needs for development and public debt sustainability even in the best-governed ADF countries. In spite of its being rated at low risk of debt distress, the data presented in the IMF 2017 Article IV report pose a puzzle in that the actual increase in external debt to GDP based on the DSA (Table 4, baseline scenario) over the three years 2014-16 is almost 15 percentage points of GDP less than the amount one would expect based on the fundamental drivers of external debt, namely, the non-interest CAD (NICAD), net FDI change and endogenous debt dynamics (which capture the effects of interest rates, exchange rates and growth rates).

In other words, had we started with the external debt-to-GDP ratio of 26% at the end of 2013 and added the “identified net debt-creating flows” over the next three years shown in Table 4 of the DSA, we would have ended up with an external debt-to-GDP ratio of 53.4% at the end of 2016 instead of the more soothing 39% shown in the table. This large discrepancy requires an explanation: either the NICAD and other variables determining the path of external debt are being overstated or debt is being accumulated off-balance sheet. Yet this significant discrepancy, which shows up as a series of large negative numbers in the “Residual” line of Table 4 does not merit any mention in the DSA apart from a generic footnote to Table 4. This example illustrates the risk that populating templates often becomes a mechanical exercise. One must ask: would Ethiopia’s risk rating have been lowered had its external debt ratio been 53% in 2016 instead of 39%?

Ethiopia

6 Note that if the actual increase in external debt is greater than the amount identified by the preceding factors that could in principle be explained by front-loaded borrowing; but the converse is puzzling.
In January 2018, Ethiopia was downgraded to high risk of debt distress based on the LIC DSF. The very next month, Moody's affirmed its B1 (B+ equivalent) rating with a stable outlook. This is similar to the ratings for Kenya and Rwanda, both of which are rated at low risk of debt distress by the LIC DSF.\footnote{The rating agencies are not without their own credibility problems. But the discrepancy is noteworthy.}

The proximate reason for Ethiopia’s downgrade by the IMF and WB is that the ratio of PPG external debt service to exports (DSE) went above its threshold in the most recent baseline projection scenario contained in IMF Country Report 18/18 released in January 2018 (IMF 2018b). The reason for the DSE breach is on account of maturing principal on non-concessional loans, with the maturity reduction of one particular bilateral deposit at the central bank from 8 to 6 years being pivotal.\footnote{See footnote 7 in the DSA in IMF (2018).} In addition, foreign exchange reserves fell and there were “widespread foreign exchange shortages”, in other words, international liquidity is an issue.

Now consider what happens when data from Table 2 (selected indicators) and Table 5b (balance of payments) in IMF (2018b) are combined. For example, in 2016/17, the trade deficit was 16.1% of GDP of which 13.1 pp or over 80% was on account of the public sector deficit (difference between investment and saving) while only 3.1 pp were on account of the private sector. Moreover, net private transfers were 6.9% of GDP while official transfers were just 1.8%, meaning that the "public" component of the current account balance was -11.3% of GDP partially offset by the private component of +3.8% of GDP, resulting in an overall balance of -8.1% of GDP (that is, a CAD of 8.1% of GDP, including a deficit of 0.6% of GDP on net income from abroad, see Table 5b). Thus, the public sector deficit, itself driven by large infrastructure investments, drives the CAD and external debt. Therefore, if Ethiopia is at high risk of external debt distress, the fundamental cause must lie in the public finances. This means that public debt and its dynamics need to be given a central position in any assessment of debt distress.

But the DSA in IMF (2018b) has nothing to say about public debt except that it stays below its threshold and does not “flag additional risks”. Indeed, two crucial questions for Ethiopia, but unlikely to be addressed even by the 2017 DSF, are the following:

1. What would public debt dynamics look like in the absence of financial repression (issuing domestic debt at negative real interest rates combined with capital controls) and real exchange rate overvaluation? Both these could mask unsustainable public debt dynamics by keeping interest rates artificially low and understating the burden of foreign currency debt.
2. Will the big public investments pay off by will boosting future growth and taxes and thereby ensuring solvency via adequate future primary fiscal surpluses?

Both questions are vital but unlikely to be picked up without a new framework for DSA as discussed in sections V and VI, where the Ethiopian case is explored further.

### III. REFORMS EMBEDDED IN THE 2017 DSF

The LIC DSF was introduced in 2005 and has been reviewed thrice prior to the 2017 Review, most recently in 2012, when country-specific information and domestic debt vulnerabilities
were highlighted. The 2017 Review (the fourth) is motivated by the following broad considerations:  

1. Need to pay more attention to market-based financing risks from domestic and foreign (Eurobond) sources (mentioned throughout IMF 2017a)
2. Recognition that debt projections have tended to underestimate debt burdens for both external and total public debt with unexpected changes in debt ratios driven primarily by “fiscal deviations and balance of payments (BoP) shocks” (IMF 2017a p. 9)
3. In like vein, and continuing to emphasize the primacy of fiscal and public finance shocks, IMF (2017a p. 11) notes that shocks from the primary fiscal deficit tend to be underestimated.
4. The DSF has not performed well in identifying XDD episodes out of sample. IMF (2017a p. 18) notes that performance deteriorates sharply when 7 extra years of data are included.
5. Staff judgment has been applied in only about 25% of the DSAs since the inception of the DSF according to IMF (2017a p 15). Moreover, the new feature in the 2012 review to allow for a deeper assessment of total public debt and its impact on the overall risk rating has been “only sporadically used”. These need to change to allow for deeper “attempts to disentangle risks”.

**Main reforms**

The main 2017 reforms can be gauged from a comparison of Figure 6 on page 21 with the figure in Appendix 1 of IMF (2017a). These include:

1. Classifying countries as weak, medium or strong based on a new composite indicator CI instead of exclusively on the CPIA
2. Eliminating the “probability approach” to setting debt thresholds (the probability approach refers to using country specific information when countries are on the edge of breaching a debt burden threshold to better inform the risk rating)
3. Eliminating remittance-augmented thresholds
4. Introducing “realism tools” to cross check the robustness of macroeconomic projections and base line stress tests.

Another change is to shorten the projection horizon from 20 years to 10 years for the mechanical determination of risk ratings, as most risk threshold breaches typically happen in the first five years (see p. 31 of IMF 2017a).

**Implementation of revised DSF**

Drawing mainly upon Annex III to IMF (2017a), the main steps in implementing the 2017 DSF are as follows:

**Step 1:** Identify a series of XDD episodes over the period 1970-2015. 98 episodes were identified based on the new methodology shown in in Figure AIII.1 (versus 76 under the old methodology). A striking feature of the methodology is its IMF-centric nature.

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9 The interpretation and assessment of the 2017 Review contained in this paper are informed by the ADF Lab’s own exploration of DS over the 18-month period November 2015 to June 2017.

10 This change is welcome on conceptual grounds because remittances may increase FX reserves but they do not augment the government’s capacity to service its debt unless remittance flows can be taxed. We return to this point later.
**Step 2:** Run a probit model for each of 4 debt burden indicators. These indicators all pertain to PPG XD and include PV of XD to GDP or exports and debt service (interest plus maturing principal on PPG XD) to revenue or exports. The probit model (which estimates the probability of XDD for a particular country in a particular year) uses the following control or explanatory variables:

1. Debt burden indicator
2. CPIA
3. Country growth rate
4. Reserves (scaled by imports)
5. Reserves squared
6. Remittances (scaled by nominal GDP)
7. World growth (proxy for external shocks)

A disappointing feature is the absence of discussion of alternatives that might have been pursued, for example, variables pertaining to unsustainable public debt dynamics that feed into XDD. Also, the rationale for using remittances is not clear. IMF (2017a) claims this enhances repayment capacity. Remittances enhance international liquidity, but unless they can be taxed they do not increase the government’s repayment capacity. Likewise, there is no discussion of endogeneity. Is the CPIA high because XDD has been avoided or has XDD been avoided because the CPIA is high? Similarly, the inclusion of world growth is not clearly justified. Why not terms of trade shocks?

**Step 3:** Classify countries as weak, strong or medium based not simply on the CPIA (as earlier) but on a composite indicator CI based on variables 2 to 7 in the list in Step 2 and using the coefficient for each variable averaged over the four probit regressions (one for each of the four debt burden indicators). The classification is based on evenly spaced percentiles for the CI. Note that it is not clear why a country with higher remittances should be classified as “strong” if remittances result from a diaspora that has left the country because of lack of opportunities there. The virtue of the CPIA is that its policy and institutional implications are easy to grasp. This is a puzzling “reform”.

**Step 4:** Obtain a threshold for each debt burden indicator by first choosing a cutoff probability of debt distress. This cutoff probability is chosen to strike a desired balance between Type 1 (missed crises) and Type 2 (false alarms) errors. Then invert the estimated probit regression equation to obtain the debt burden threshold corresponding to the cutoff probability as a function of the CI (as shown on p 26 of Annex III) and value these thresholds at the same percentiles for the CI which define the country classification so as to obtain a numerical debt threshold for each country classification.

**Step 5:** Define a prediction rule for predicting XDD based on a breach of the debt burden thresholds (the 2017 DSF would signal high risk of XDD if any of the thresholds is breached).

**Step 6:** This step pertains to setting benchmarks for the PV of total public debt (TPD=PV of PPG external debt plus domestic public debt. In practice, “public debt” for ADF countries usually includes just the debt of the central government; the debt of SOEs tends to be excluded.) A rule is defined for domestic debt default episodes, explicit (rare) or implicit (for example, based on high inflation or financial repression, more common). The results are shown Table AIII.7, but it is not clear which of the 18 definitions of debt distress is eventually used. Suffice it to say that thresholds for TPD are grafted onto those for the four XD thresholds to ensure consistency and
obtain benchmarks for TPD for each of the three country classifications; the approach is described in section D of Annex III.

To sum up: The 2017 Review could have taken a bolder approach instead of continuing to be constrained by external debt distress (XDD), in particular, by engaging in a deeper discussion of the underlying causes of such distress, which are likely to emanate from fiscal imbalances and TPD. In this case, emphasizing public debt as both a fundamental cause of macroeconomic distress and the focus of corrective policy becomes logical.

IV. CRITIQUE OF THE 2017 DSF

Part of the critique has been integrated into the description of the 2017 DSF in section III. It is IMF-centric in its determination of external debt distress episodes at a time when market debt has become important and remains anchored in the original framework of XDD. Tweaking the 2012 DSF to obtain an updated version that fits additional historical data better does not tell us how the 2017 DSF will perform out of sample. For this, we will need to wait another 10 years.

A crippling drawback of the 2017 DSF is that it does not accord sufficient importance to public debt as the fundamental driver of CADs and external debt dynamics. This alone would make the implementation of the 2017 DSF counterproductive. Further, the additional sophistication introduced could dilute the incentives for the use of staff judgment and discretion, which are vitally important given the deteriorating debt situation among African LIDCs.

While the statement in IMF (2018a) that the LIC DSF “has been the cornerstone of assessments of risks to debt sustainability in LICs” may have been true of the past, the claim that the 2017 DSF is a “significant overhaul…brining significant advantages to all stakeholders” falls short.

The first problem is that the 2017 DSF works within the confines of the inherited DSF, which by its nature precludes a significant overhaul. The 2017 Review needed to revisit the history behind the introduction of the LIC DSF in 2004-5 and ask whether the original reasons still applied, along the lines of a zero-based budgeting approach. It needed to ask what the fundamental causes of XDD episodes are. These are unlikely to be low remittances or FX reserves or world growth, variables included in the probit regressions discussed above. The following hypothesis would have been worth investigating: the vast majority of XDD episodes among African LIDCs are driven by unsustainable public finances.

There is no more eloquent testimony supporting this hypothesis than the executive summary of the IMF’s own October 2017 Regional Economic Outlook report on Sub-Saharan Africa (IMF 2017b): “The number of low-income countries in debt distress or facing high risk of debt distress increased from 7 in 2013 to 12 in 2016, and all of the region’s frontier markets or other countries with credit ratings, except Namibia, have been downgraded below investment grade. The debt increase has been driven by a widening in fiscal deficits, slow growth, the slump in commodity prices, and exchange rate depreciations in some countries. While current accounts have improved and exchange market pressures eased somewhat, international reserves are below adequacy levels in many countries.”

The idea that XDD is typically driven by fiscal imbalances and unsustainable public debt is supported by EM experience, where most of the sovereign debt crises have been caused either by unsustainable public debt trajectories leading to eventual defaults on external debt (and possibly even on domestic debt) or by bailouts of the private sector (see for example, Pinto 2014
chapter 8). It is also supported by the country case studies in Annex II of IMF (2017a). In the three examples given of missed crises in Ghana, Malawi and Mozambique, primary fiscal deficits, public debt, terms-of-trade shocks (tobacco prices for Malawi) and optimistic growth forecasts all play major roles.

Similarly, corrective policy is almost always likely to hinge on the public finances and better growth policy. This is likely to be the case even when the immediate cause of the XDD episode is purely exogenous, such as a ToT shock. On the other hand, apart from growth and the CPIA, the policy implications of the other control variables in the probit model in section III are hard to fathom.

**Second, IMF (2017a) could have benefited from a more systematic cost-benefit analysis of implementing the DSF.** One gets the impression that performance was not great; but this could have been better documented. Besides, one would have liked to know what the average cost of producing a DSA is in terms of staff weeks and costs. Has it been worth the effort? These questions are important because the LIC DSF has been on a course towards obsolescence ever since the completion of the HIPC-MDRI process some 10 years ago for three reasons: (i) the continued emphasis on PPG XD to the neglect of total public debt; (ii) the slow recognition that, after HIPC-MDRI debt relief, governments have been relying on heavily on market finance (not just Eurobonds but also domestic debt, the latter possibly applying to the fragile countries as well); and (iii) the continued reliance on CPIA-linked debt burden thresholds without paying attention to market signals on default and devaluation risk.

**Third, the 2017 DSF fails to address the shortcomings identified in section I and conveys the impression that the DSF is an end in itself.** This can be demonstrated in two ways.

- The disconnect between the risk ratings for XDD and market assessments of risk. For example, Rwanda, a top performer based on the CPIA and which carries a low risk of XDD, has only a B sovereign credit rating from S&P, 5 levels below investment grade on account of its growing CAD necessitated by imports for meeting infrastructure and other development needs.
- An almost exclusive emphasis on crisis avoidance, as illustrated by the discussion on page 17 of IMF (2017a) and especially footnote 10 on the distress signals used, which are evidently geared to the interests of external official creditors.

**Fourth, the orientation of the DSF should be radically altered to make it more development-relevant.**

- **The first change should be to make public debt and its dynamics the central focus.** The reason is that most of the XDD risk probably emanates from the public sector (government plus SOEs) for ADF countries. There could be a much shorter horizon, say 5 years, for discussing public debt dynamics supplemented with a discussion of CADs and FXRA. At the same time, risks from the private sector’s balance sheet should be managed and monitored by restricting external private borrowing as well as currency mismatches on banks’ balance sheets. This needs to be done proactively based on EM experience: prevention of debt crises is far less costly than the cure.  

11 Aizenman and Pinto (2013).
exporting (NRX) countries and the rest owing to the existence of the NR curse in SSA, as argued in FP 2017. This is a major topic given the prevalence of hydrocarbons as well as other exhaustible NR such as copper and iron ore in SSA, but has tended to be soft-pedaled in recent years. NRX countries should face a much higher bar for access to development finance to create an incentive for them to use their own wealth well. Indeed, as shown in FP 2017, countries rich in NR tend to headline groups that are marked either by unsustainable public debt dynamics (such as Ghana, Mozambique and Zambia) or poverty and fragility (of the 9 ADF countries in the Lab study with a per capita less than $500, FP 2017 notes that 5 are NR-rich and all 9 have public debt sustainability problems).

On the positive side, the emphasis on judgment as part of the 2017 DSF reforms is welcome. As a practical matter, exercising judgment rests on two premises: thorough familiarity with the nuts-and-bolts of the underlying algebraic equations of the model and the ability to modify flexibly to highlight country-specific aspects; and experience, including a thorough understanding of how a particular country’s economy works. The discussion at the bottom of page 15 of IMF (2017a) shows that discretion is rarely used. Unfortunately, templates like the DSF tend to become substitutes for thinking and this risk increases the more sophisticated the template is.

V. AN ALTERNATIVE FRAMEWORK FOR AFRICAN LIDC DEBT SUSTAINABILITY

The alternative to DSF 2017 proposed here should be seen not as a fixed template but an approach allowing for country specificity that responds nimbly to changing circumstances. In this spirit, the alternative approach rests on a few principles which are motivated by macroeconomic basics and lessons from EMs, and the particular circumstances defining the debt situation in Africa today:

**Principle 1.** Based on development theory/empirics and macroeconomic accounting 101, one can set out the following "causal hierarchy":

Weak leadership and governance (low transparency, high corruption) plus weak institutions (especially fiscal and financial) => unsustainable public finances =>unsustainable spillovers into current account deficits and external debt dynamics.

**Conclusion:** The attention in DSAs must shift from debt distress associated with PPG external debt to distress linked to public debt and its dynamics, corresponding to a shift from symptom to malady.

**Principle 2.** Evidence from FP 2017 and IMF (2018a) indicates deep-seated public debt sustainability problems among African LIDCs. The underlying factors include slowing growth, a weak private investment climate, large primary deficits with bad expenditure composition and exchange rate collapses linked to weak macro management and political instability. These factors are not going to be alleviated by an insistence on concessionality in ODA, which has failed to prevent the re-emergence of unsustainable public debt in the post HIPC-MDRI era or to contribute to a strong foundation for long-run growth. Moreover, most African countries are natural-resource rich but have a weak track record in using this wealth to support development.

**Conclusion:** Concessionality is overrated in the sense that it will not compensate for the fundamental problems African LIDCs face and could dilute the incentives for difficult reform.
The African LIDC-donor relationship needs to be revisited with a more focused and tougher policy dialogue with the onus shifting to African leaders.

**Principle 3.** Debt sustainability is not an end in itself but a platform for the sustainability of long-run growth and development. Even the best-governed African LIDC is going to face considerable tension between public debt and CAD sustainability on the one hand and the vast investments needed in infrastructure and human capital to meet the SDGs on the other. At the same time, ODA is dwindling with the market now defining the marginal cost of borrowing for a significant set of African LIDCs.

**Conclusion:** The biggest challenge for African LIDCs today is reconciling debt sustainability and development. This would require a combination of: (i) re-pricing ODA to reflect the new market realities, (ii) finding mechanisms to frontload ODA without increasing the fiscal burden on donors, and (iii) launching an Enhanced Policy Dialogue conducted collaboratively across the AfDB, IMF and WB to maximize the impact of analytical and policy work.  

*Simplifying the Public DSA*  

In line with principles 1 and 2, the DSA should concentrate on the variables driving public debt dynamics in a manner that is transparent. This means highlighting the three variables driving dynamics: the primary fiscal deficit (total revenue minus non-interest spending), the interest rate on public debt and the GDP growth rate. These variables determine the trajectory of the public debt to GDP ratio (the “debt ratio”). For example, if the government is running a primary deficit and interest rates exceed growth rates, the debt ratio will grow without limit in the absence of corrective fiscal policy, eventually resulting in a crisis. Similarly, a rise in the ratio of the primary deficit to GDP, or an increase in interest rates or a collapse in growth rates or some combination of these outcomes will worsen debt dynamics and could precipitate a crisis.

In addition, the exchange rate is a key variable impacting public debt dynamics in ADF countries: the average share of public debt denominated in foreign currency (“forex debt”) is close to 70%. Large currency depreciations such as we have witnessed over the past few years quickly increase the burden of forex debt and the debt ratio. Therefore, the framework should incorporate calculations that enable the impact of currency volatility on forex debt to be captured by separating interest rates on local currency and forex debt.

Similarly, debt ratios can be adversely affected by contingent liabilities from state-owned enterprises and commercial banks. If the state-owned energy company, or a failing bank, needs a bailout, this will add to the public debt burden. More systematic information is needed on SOE debts and related solvency issues, as emphasized in IMF (2018a).

**Making debt dynamics transparent means the following:**

**Shift attention to Nominal Public Debt:** The 2017 DSF like its predecessors sets risk thresholds for the ratio of the PV of public debt to GDP (see for example Table AIII.8 in Annex III of IMF 2017a). The PV of public debt (defined by the IMF as the PV of PPG external debt plus nominal domestic debt) is appealing when most debt is from official sources and is concessional, that is, contracted at below-market interest rates. Using a discount rate higher than the official interest rate then enables a grant element to be calculated as the difference between the nominal value of the debt and its PV. However, for Eurobonds or commercial local currency debt, such a...
calculation would yield a negative grant element (because the interest rate on such debt would typically be higher than the discount rate). For this reason, the IMF includes such debt at its nominal level. But this creates an inconsistency because it understates the true burden of market debt assuming that 5% is indeed the appropriate discount rate and not arbitrary. Using nominal debt avoids this problem and enables us to easily interpret \( r-g \), the interest rate-growth rate differential.

**Levels versus dynamics:** The level of public debt and its dynamics both need examination. This would enable early warning by getting away from the binary classification inherent in the LIC DSF (some degree of debt distress versus no distress based on some threshold being breached) based on debt levels: once a debt distress episode takes place, it is already too late. On the other hand, looking at public debt dynamics over a historical period and how these are likely to evolve over a short projection period, say 5 years, provides ample opportunity for discussing corrective policy. This no doubt happens in the case of IMF-supported programs. But it does not flow from the core 2017 DSF.

**Concentrate on history with a short projection period:** The reason for concentrating on history is a high degree of path dependence: the next few years are likely to be similar to the past few. Based on EM experience, we know that growing out of a debt problem is extremely rare. Instead, countries usually have to make hard decisions to reduce primary fiscal deficits and lower country (macroeconomic and political) risk. Long lags may be involved before reforms are seen as credible and growth resumes. Moreover, serious debt data gaps argue in favor of simpler approaches and shorter projection periods.

**Shift the onus for reform to African country governments:** Instead of building in optimistic fiscal consolidation and growth scenarios into DSA projections that seldom materialize—see the excellent account in Mooney and de Stoyres (2017)—the approach should shift to taking a hard look at history and, where applicable, asking country governments how they intend to restore sustainable debt trajectories. This is extremely important in cases of poor track records on using public resources well and where the probability of difficult reforms being implemented is low. In such cases, a simplified DSA followed by country visits to ascertain the government’s own strategy is likely to be more effective than continuing to insist on concessional borrowing that could dilute incentives for difficult reform. A tougher dialogue and higher bar for access to ODA are needed.

**Development and Debt Sustainability**

In spite of a fall in the percentage of the population living in poverty, 50 million more people were added to the poor in Africa during 2000-15 owing to rapid population growth. In 2015, 420 million Africans were living in absolute poverty based on the World Bank’s 2011 yardstick, more than half the world’s poor. People under the age of 25 make up 60% of the continent’s population. With 500 million more people expected by 2030 and another 250 million going into the workforce, the restoration of fast growth is essential to avoid a socio-economic disaster. Even if growth were to average 6% during the 2020s, this would still leave 400 million poor people in 2030; if growth were to stagnate in the 3-4% range, the numbers of the poor would swell to 500 million, putting the first SDG to “eradicate extreme poverty for all people everywhere by 2030” out of reach (HLP 2017).

**Two observations are paramount in this connection.**

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15 See for example Annex II in IMF (2015).
First, ADF countries need large amounts of frontloaded development finance to plug the infrastructure deficit if they are to grow fast enough to meet the SDGs, continue to alleviate poverty and create jobs for Africa’s burgeoning youth population. UNCTAD (2016) estimates that the SDGs could require investments of between $600 billion and $1.2 trillion per year. Recent work by the African Development Bank indicates that infrastructure alone require $130-170 billion per year, leaving a financing gap of as much as $108 billion (African Economic Outlook 2018). These needs exist at both at the national and regional levels to integrate several small economies together given the arbitrary carving up of the continent. The market is clearly not a viable source for such financing on volume, cost and maturity grounds, making the frontloading of ODA the only remaining alternative.

**Box 1: Africa’s Development and Debt Sustainability Challenges**

**Lessons from EMs and the Transition Countries of Central and Eastern Europe:** Fast-growing countries tend to self-finance their capital accumulation with high savings rates and relatively low current account deficits and even surpluses. In addition to strong fiscal and financial sector institutions, countries have espoused hard budget constraints for the public and private sector, competition including from imports, and competitive real exchange rates. Following the spate of EM crises in the late 1990s and early 2000s, these countries have self-insured by strengthening public sector balance sheets, increasing FX reserves and better regulation of capital flows and external borrowing by the private sector.

ADF countries are not in a position to self-finance their growth because of their relatively low incomes and massive development financing needs. Their special development challenges are set out below in three modules: growth; debt sustainability; and development finance.

**Growth:** This requires a combination of capital deepening (increase in capital-labor ratios) and a fast rate of total factor productivity (TFP) growth to support economic growth and overall welfare. In principle, Africa should benefit from a high rate of return to capital given its scarcity there and its distance from the global technological frontier. Here are the special challenges it faces:

1. Lowering country risk through better governance and institutions, improved volatility management (especially from domestic corruption and political shocks) and ensuring sustainable public finances to raise risk-adjusted returns
2. Engineering a big push on infrastructure and skills
3. Promoting regional integration of infrastructure and trade given small average country size and fragmentation of the internal market.

**Debt sustainability:** A constant tension exists on the continent between public debt and CAD sustainability and financing infrastructure (nationally and regionally) and the SDGs, even for the better performing countries. The market is unlikely to be an appropriate financing source on volume, cost and maturity grounds. A strong case exists for frontloading ODA, even on moderately concessional terms, which will remain far superior to the market alternatives now being pursued. But countries must demonstrate their willingness and ability to strengthen fiscal institutions and public finance management and show that resources can be used well, including those from NR wealth.

**Development finance:** ADF countries need large amounts of frontloaded development finance to plug the infrastructure deficit and meet the SDGs. This is both at the national and regional level. Donors can help without increasing their fiscal burden by adopting the triple package of securitizing part of the annual flow of grants via a Big Bond, moderately concessional loans and an enhanced policy dialogue (see text for details). Some countries will still need access to highly concessional ODA, calling for a two-tier approach as outlined in HLP (2017) and FP 2017. The biggest challenge is to achieve greater collaboration across MDBs and bilateral donors.

Second, even the best-governed country has vast public investment needs without which it will be hard if not impossible to create a foundation for long-run growth and development. But borrowing to finance these investments, especially from the markets with their relatively high interest rates and short maturities relative to the long payback periods for infrastructure investments, will further exacerbate the already worsening public debt sustainability in Africa. Box 1 above summarizes the nexus of debt sustainability and development challenges in Africa.

Reconciling debt sustainability and development with ODA dwindling calls for hard decisions. First, ODA needs to be priced and allocated better and there is clear scope for this given the fact that the market defines the marginal cost of borrowing for a growing number of ADF countries and heterogeneity among countries in using public resources well. Second, a mechanism has to be designed to frontload ODA without increasing the burden on donors. HLP (2017) recommends this be done by converting a portion of the grants now going to Africa into a “Big Bond”. For example, if approximately $5 billion of the $45 in the annual grants to Africa is set aside, this could support the issuance of a 30-year $100 billion bond by donors: the present value of an annual stream of $5 billion for the next 30 years is $100 billion when discounted at 3%, which is approximately equal to the prevailing yield on the US 30-year bond. The proceeds of this Big Bond could be disbursed through moderately concessional 40-year loans at 3-4% (MCLs), which would be superior to market borrowing on cost and maturity considerations. Third, such front loading would need to be accompanied by an enhanced policy dialogue to ensure that public resources are used well, with access to frontloaded finances providing the carrot. Fourth, the focus of the existing system on highly concessional finance should shift to the more vulnerable and fragile ADF countries.

A pragmatic way of proceeding would be to classify countries according to two criteria: whether the marginal cost of borrowing determined by non-concessional borrowing (including the market) or official creditors; and whether public debt sustainability problems more likely to be linked to poor resource use and weak PFM systems or massive public investments in infrastructure, as shown in the matrix below.

<table>
<thead>
<tr>
<th>Marginal cost of borrowing determined by:</th>
<th>Unsustainable Debt Dynamics driven primarily by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Poor resource use and weak PFM</td>
</tr>
<tr>
<td></td>
<td>Large public investments in infrastructure</td>
</tr>
<tr>
<td>Official creditors</td>
<td>D</td>
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<td></td>
<td>C</td>
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Ghana and Mozambique are examples of countries which would be in quadrant A. These countries would need to meet stringent criteria in order to qualify for access to any kind of ODA, given the growing scarcity of the latter and the inability of these countries to use public resources, including from their NR wealth, well. Countries classified as falling into quadrant B in
the matrix would be ideal candidates for frontloaded ODA through MCLs: they would benefit from MCLs relative to the costs of market finance and provide some assurance public resources will be used well, thereby potentially igniting a race to the top through signaling effects. An illustrative list of countries for Quadrant B is Ethiopia, Kenya, Rwanda, Senegal, Cameroon, Côte d’Ivoire and Tanzania. Similarly, countries in quadrant C could be candidates for such finance: they may not have issued Eurobonds, but their marginal cost of borrowing could be determined by domestic borrowings or loans from commercial banks.

Quadrant D would probably include most of the fragile countries. While it may seem logical to restrict highly concessional finance to these countries, the incentive effects may pose a dilemma. The results in FP 2017 indicate that these countries typically have the lowest CPIA scores and are often NR rich, suggesting the fragility could be self-inflicted. Nor is it obvious that the marginal borrowing cost of countries in quadrant D is determined by official creditors: Chad, which is classified as ADF-only and as a “fragile and conflict-affected state”, borrowed USD 1.45 billion in 2014 from Glencore and four banks to be repaid with crude oil shipments. This loan had to be restructured in 2015 when oil prices fell as repayments were absorbing a growing fraction of fiscal revenues, as reported in this Reuters article.

The discussion in the context of the matrix stresses the need to move away from a one-size-fits-all DSA template and to think of hardening access criteria for dwindling ODA. The ADF Lab’s visits to 5 countries in the context of its debt sustainability work indicate that such “hardening of budget constraints” would not come as a shock to African LIDCs. The sentiment was often expressed that ODA is not last forever and that what is paramount is how public resources used, not whether loans are highly or moderately concessional.

For each ADF country, the following information would need to be gathered:

1. Understand the SDG and development finance needs of the country well: what are the priority public investments to reduce (if not close) the infrastructure gap in power and transport? Is there a roster of properly vetted available flagship public investment projects? What are the needs for investing in human development and skills? An unsettling disconnect is the shortage of bankable infrastructure projects in a continent where the infrastructure deficit is massive.

2. Attempt to define the marginal cost of government borrowings, not just from Eurobonds and through domestic T-bills, but also using information on bridge loans from commercial banks and loans from China, the terms of which are often not transparent.

3. Understand contingent liabilities better as well as the role of SOEs in the provision of infrastructure services.

4. Prepare a roster of key regional infrastructure projects that can be funded by part of the proceeds from the Big Bond, as noted in HLP (2017). Such projects could change the narrative about Africa by signaling it is open for business and attracting the interest of infrastructure companies worldwide. To get an idea of the impact: a recent story in India’s Economic Times noted “nearly 15 global players, including Samsung Construction and China Construction” are competing with domestic companies to secure a contract for an INR26,000 crore international
convention and expo center.\textsuperscript{16} INR26,000 crore translates to $4 billion. Think of what even a $20 billion Big Bond could achieve for Africa.

VI. ETHIOPIA: A CONCRETE ILLUSTRATION OF THE ALTERNATIVE APPROACH

The Ethiopian vignette in section II demonstrates conclusively that high public sector deficits, linked to large public investments in infrastructure, have spilled over into current account deficits and external debt dynamics. This calls for a deeper examination of Ethiopia’s public debt dynamics, which were examined in FP 2017 using data from the October 2016 IMF Country Report 16/322, the one immediately preceding the January 2018 report (IMF 2018b) that downgraded Ethiopia to high risk of debt distress. The assessment in FP 2017 made three points:

1. Public debt dynamics were masked by financial repression (issuing birr debt at highly negative real interest rates) and real overvaluation. Both improve the appearance of public debt dynamics but the sustainability of such policies is questionable and involves serious distortions (including misallocation of investment) while potentially hurting competitiveness and growth.

2. Ethiopia epitomizes the constant tension between the need for large, upfront public infrastructure investments in ADF countries and public debt sustainability. The immediate effect of the investments is to raise public indebtedness (albeit artificially lowered in Ethiopia’s case through financial repression and real overvaluation of the birr) and current account deficits: Ethiopia’s CAD in 2016/17 was 8.2% of GDP in spite of significant remittances. However, the public investments will pay off only over the long run.

3. The crucial question is whether the public investments will indeed pay off: have they been carefully selected and do they have sufficiently high economic rates of return to boost future growth and taxes thereby ensuring solvency via adequate primary fiscal surpluses in the future? This vital question needs an answer.

The big question therefore is whether the Ethiopian public sector is facing a liquidity or a solvency problem. While it does not explicitly address this question, IMF (2018b) appears to think the problem is liquidity, not solvency. This can be inferred from the reason for the downgrade: the maturity reduction of one particular bilateral deposit at the central bank from 8 to 6 years tipped the ratio of debt service on PPG external debt to exports (DSE) over its threshold, triggering the downgrade (see footnote 7 in the DSA in IMF 2018b). Also mentioned are falling FX reserves and “widespread foreign exchange shortages”.

The IMF report is also sanguine about prospective returns on the large public investments made. Box 1 in the DSA notes: “The commencement of the Addis-Djibouti railway line will improve trade logistics and reduce the transportation cost of moving goods in and out of the country. It will take only 10 hours for the new railway to take goods between Ethiopia and Djibouti, a significant improvement over the 3-4 days by truck currently. Further, the Hawassa Industrial Park and second phase of the Bole-Lemi Industrial Park have started operations and are set to

\textsuperscript{16} The Economic Times November 29, 2017. “Global firms line up for India’s largest convention centre; Rs 26,000-cr project may create 5L jobs”. 

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increase manufacturing exports and contribute to the diversification of exports. Investments in hydro-power, industrial parks, export processing zones, and public policies to encourage FDI and private investment in light manufacturing industries are expected to support export growth and diversification." While encouraging, this assessment comes across like a best-case scenario.

Two steps are involved in the solvency versus liquidity determination. The first is a deeper dive into public debt dynamics. The second is to establish that the big public investments that have been made are likely to pay off.

**Ethiopia’s public debt dynamics recast**

To be confident that Ethiopia does not face a solvency problem, one would need to examine public debt dynamics. All that IMF (2018b) says about this in the context of the downgrade is that public debt stays below its threshold and does not "flag additional risks". However, the real question is what public debt dynamics would have looked like in the absence of financial repression and real overvaluation. This question can be answered better by following the simplified alternative DSA approach referred to earlier in this section. Table [xx] uses exactly the same information as in IMF (2018b) to recast the public DSA in a way that makes the dynamics more evident.17

| Table [xx]: Ethiopia’s Public Debt Dynamics 2015-17 Based on IMF (2018b) |
|-----------------|-----------------|-----------------|
|                | Ethiopia        |                |
| Public Debt/GDP % | 61.20           | 59.60           | 53.80           |
| Forex share %    | 51.31           | 54.53           | 54.65           |
| Primary deficit/GDP % | 9.50          | 5.90            | 5.20            |
| Nominal GDP growth % | 22.32         | 22.32           | 37.70           |
| Composite Nominal Interest rate % | 5.60          | 5.13            | 9.51            |
| of which: local currency % | 4.58          | 3.49            | 3.53            |
| of which: Forex % | -               | 6.70            | 14.50           |
| Real GDP growth % | 10.30           | 10.40           | 8.00            |
| Composite Real interest rate % | -4.78         | -5.11           | -14.11          |
| External debt/GDP % | 35.10          | 35.60           | 31.60           |
| of which: public share % | 89.46          | 91.29           | 93.04           |
| Non-interest current account deficit/GDP % | 11.40         | 9.60            | 7.70            |

Source: Computations by author based on data from Table 3 of the DSA in IMF (2018b).

The formulas for the implied composite interest rates shown in Table [xx], which include the impact of exchange rate movements on the stock of forex debt, are derived in Appendix 1. Take 2016/17 as an example. The nominal interest rate on local currency debt was 3.5% while that on forex debt was 14.5%, giving a composite nominal interest rate of 9.5%. This was far lower than nominal GDP growth of 37.7%! The same applies to the two earlier years, resulting in real growth rates far above real interest rates for all three years. As a result of this massive

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17 Appendix 2 sets out a few questions needing clarification with regard to the DSA in IMF (2018b).
differential, the public debt-to-GDP ratio fell from 61% in 2014/15 to 54% in 2016/17 in spite of large primary fiscal deficits. Debt dynamics are therefore being driven by rapid growth connected to massive public infrastructure investments combined with exceptionally low interest rates on account of currency overvaluation and financial repression.

As it turns out, the birr was devalued by 15% in October 2017 (the exchange rate went from 23.4177 to 26.9215 birr per USD, a rise of about 15%, on Oct 10 2017 according to Reuters). Furthermore, according to IMF 2018b, the government has been taking steps since October 2016 to curb borrowing by the government and SOEs. This indicates concerns about competitiveness and the CAD as well as restrictions on fiscal space given all the borrowing and investment that have already been undertaken. On the impact of the devaluation, Table 3 of the DSA in IMF (2018b) shows a 11.3% real depreciation in 2017/18 compared to a cumulative real appreciation of some 17% over the previous three years. This will add 3.1 percentage points to the public debt-to-GDP ratio in 2017/18 (in contrast to a reduction of 3.1pp in 2016/17, a swing of over 6pp of GDP).

On financial repression, the central bank, NBE, requires banks to purchase NBE bills equal to 27% of their loan issuance (IMF 2018b paragraph 20) carrying 3% interest (inflation is projected at 12% in 2017/18) in order to fund the Development bank of Ethiopia. The IMF is arguing for a more competitive banking system and a move towards market-determined interest rates, which are clear steps in the right direction (according to Reuters, the interest rate on deposits was raised from 5% to 7% in October 2017 along with the devaluation). Similarly, a move towards a flexible, market determined exchange rate would be a step in the right direction, as noted in IMF (2018b) (according to internet reports, the black market rate was 31.80-33 birr versus the official rate of 27.22 per USD in early 2018).

This move towards market-determined interest and exchange rates, which would probably be needed to improve the investment climate especially for FDI, could have a significant impact on the debt trajectory. For example, suppose the composite real interest rate were 3% for each of the years 2015/16 and 2016/17--a reasonable level for a LIC--instead of the -5.1% and -14.1% respectively shown in Table [xx]. Then given the actual real growth rates and primary deficits for these years shown in Table [xx] above, the debt-to-GDP ratio would have been 65.3% of GDP at the end of 2016/17 instead of the 53.8% shown in the table. This is a large difference.

Microfoundations for growth

The second step in the solvency versus liquidity determination calls for more insight into the prospective returns on the public investments in infrastructure and the microfoundations for growth. Doing so would require attempting answers to the following types of questions:

1. What are Ethiopia’s remaining priority public investments in infrastructure and human capital?
2. What specifically are the FDI and private sector investments that are anticipated? The private investment rate is shown as over 20% of GDP in IMF (2018b), which is relatively high. In what sectors is it investing? Also note that (Ethiopia is ranked at 161 among 190 countries on the Doing Business Index). What lessons can Ethiopia learn from other countries on the success factors for Industrial Parks and EPZs?
3. What is the plan for moving to market interest rates and exchange rates and what will the impact be on public debt and its dynamics?
4. Is the birr a credible store of value (note that there is a black market for the USD and a deeper understanding is required of whether currency substitution exists and whether people prefer to hold their savings outside the banking system on account of negative real interest rates)?

5. What are the key structural reforms pending (including in increasing competition, privatization, pricing of power and other infrastructure services)?

6. Is there a strong framework for managing volatility from exogenous sources (including drought) and domestic sources (including social instability and corruption)? In this context, encouraging moves have started in pursuit of national reconciliation after the installation of a new Prime Minister in April 2018.

These questions could be pursued jointly by the IMF, WB and AfDB in the context of an enhanced policy dialogue with the Ethiopian government. If such a dialogue establishes that Ethiopia indeed faces only a liquidity problem, then it would be a solid candidate for the 40-year moderately concessional loans in the context of frontloading ODA through the Big Bond discussed in section V.

VII. CONCLUSIONS

Even though the 2017 LIC DSF has been approved by the IMF’s Board with implementation set for the second half of 2018, the arguments advanced here indicate it is obsolete for the following reasons:

1. A continued focus on PPG external debt in spite of growing market borrowings, domestically and externally, with the market now defining the marginal borrowing cost for a growing number of ADF country governments

2. A treatment of total public debt that does not recognize the causal flow from unsustainable public finances to external debt distress and simply tags on domestic public debt to PPG external debt. Besides, retaining the concept of the present value of debt is unhelpful because of the arbitrary discount rate of 5%, the inconsistent application with market debt being included at face value and the obscuring of debt dynamics, in particular, the impact of (r-g), the interest rate-growth rate differential

3. Insufficient prominence given to market signals on default and devaluation risk and ignoring lessons from EMs in the DSF’s prescriptions, for example, focusing on financial engineering instead of fiscal fundamentals as in the case of Ghana and generally being excessively optimistic about prospects for fiscal consolidation and growth going forward

4. The tendency to treat debt sustainability as an end in itself and the unsuitability of the LIC DSF for reconciling debt sustainability and development at a time when public debt problems have re-emerged and investment needs for the SDGs remain vast.

The paper provides evidence from recent DSAs on Ghana, Ethiopia and Rwanda in support of the preceding claims. It then recommends an alternative, simpler framework that uses the same data as in the LIC DSF but starts with a detailed examination of public debt dynamics that is based on nominal debt and permits an easy interpretation of the key variables driving debt dynamics. This could and should be complemented by an analysis of current deficits, external debt and foreign exchange reserve adequacy. The focus would be predominantly on history with a short projection period and the goal of identifying key reforms to be discussed with the government. This could be done in the context of an enhanced policy dialogue, recognizing that
the onus for positive change rests with the government and cannot be dictated by the donors, with a higher bar being set for access to dwindling ODA.

This alternative approach is illustrated with Ethiopia’s recent downgrade to high risk of external debt distress in January 2018 and the logical questions that this raises with public debt considered as not posing any risk according to IMF (2018b). The alternative approach would take a hard look at public debt and its dynamics as the driver of external debt distress, thereby shifting attention from symptom to malady. This approach will also be helpful in attempting to reconcile debt sustainability and development.

In considering the alternative approach to DSA, it becomes abundantly clear that the whole framework for ODA to African LIDCs may have to be revisited. In particular, reconciling debt sustainability and development in an environment of growing debt vulnerability and decelerating growth with ODA dwindling calls for hard decisions. First, ODA needs to be priced and allocated better and there is clear scope for this with the market defining the marginal cost of borrowing for a growing number of ADF countries and heterogeneity among countries in using public resources well. Second, a mechanism is needed for frontloading ODA without increasing the burden on donors. HLP (2017) recommends this be done by using a portion of the annual grants now going to Africa to support the issuance of a “Big Bond”, as discussed in section V. Third, frontloading ODA would need to be accompanied by an enhanced policy dialogue to ensure that public resources are used well, with access to front loaded finances providing the carrot. Fourth, highly concessional finance should be strictly restricted to the most vulnerable and fragile ADF countries.

To sum up, for the LIC DSF to serve as a genuine “cornerstone” for debt sustainability assessments, an urgent shift in emphasis towards public debt and its dynamics is needed. This is required both for economic reasons (unsustainable public finances are likely to be the main factor behind external debt distress episodes) and development reasons (economic governance, which is crucial for long-term development, is liable to find its most immediate expression in the management of the public finances, including equitable revenue mobilization and transparently vetted public investments). Besides, massive public investments are needed to meet the SDGs. Both reasons make a compelling case for the shift towards public debt.

In parallel, HLP (2017) has recommendations on attempting to better reconcile debt sustainability and development with front-loaded ODA based on securitizing a portion of annual grants, moderately concessional loans and an enhanced policy dialogue. There could also be a focus on funding potential success stories to ignite a race to the top, as discussed in the context of the matrix in section V. These are simple and logical ideas. The big challenge is how to get acceptance for these ideas given the current ODA architecture. As Keynes noted in the preface to his General Theory, “The difficulty lies, not in the new ideas, but in escaping from the old ones.”
References


Felino, Luisa Teixeira and Brian Pinto. 2017. Debt Sustainability and Development Implications of Moderately Concessional Lending Terms for ADF Countries. ADF Lab WP 3, June.


Appendix 1: Computation of Interest Rates on Public Debt

This annex contains the derivations for the three nominal interest rates included in the debt sustainability component of the country tables in Felino and Pinto (2017). These are (i) the composite nominal interest rate, (ii) the interest rate on domestic (local currency) debt and (iii) the interest rate on forex (foreign currency) debt. As the name suggests, the composite nominal interest rate on public debt is a weighted average of the other two rates, after converting the interest rate on forex debt into a local currency-equivalent using ex post interest parity, that is, by taking into account the impact of nominal exchange rate movements. A depreciation means a capital loss on forex debt, increasing its burden in local currency terms, while an appreciation means a capital gain, lowering the burden of forex debt in local currency terms. The weights used are the shares of domestic and forex debt at the end of the previous year.18

The preceding description suggests that the interest rates on domestic and the local currency-equivalent interest rate on forex debt need to be computed before the composite rate. To do so, one would need the precise currency composition of forex debt: how much in USD, how much in EUR, JPY etcetera. This currency breakdown is typically not available. The procedure developed for this report sidesteps this problem by reversing the order: it first calculates the composite interest rate on public debt and then obtains the local currency-equivalent rate on forex debt using the information provided on the interest rate on domestic debt and the weights of forex and local currency debt in total public debt. All the data come from the joint IMF-World Bank DSA for each country.

Composite Nominal Interest Rate on Public Debt

The IMF-World Bank Public Debt Sustainability Analysis table has, for each year, the "identified debt-creating flows" during that year. This has two components: the primary deficit; and the so-called "Automatic Debt Dynamics" or ADD. Together, the primary deficit plus ADD capture the impact of the fiscal deficit (primary deficit plus interest payments on debt), GDP growth and the impact of exchange rate movements on the forex component of the public debt.

By itself, ADD captures the impact of interest rates, exchange rates and growth rates on debt dynamics. In the IMF’s public debt table, ADD is given by the equation:

\[ \text{ADD} = \text{Contribution from interest rate/growth rate differential} + \text{Contribution from real exchange rate depreciation}. \]

In turn, the first term on the right hand side of the above equation is given by:

\[ \text{Contribution from interest rate/growth rate differential} = \text{contribution from average real interest rate} + \text{contribution from real GDP growth}. \]

In discrete time, the decomposition, into various components, of the increases in the debt-to-GDP ratio from year to year is given by the equation:

\[ (1) \quad d_t - d_{t-1} = pd_t + \frac{(r - g)}{1 + g_t} d_{t-1}, \text{ where:} \]

\[ d \text{ denotes the public debt-to-GDP ratio, } pd \text{ is the ratio of the primary fiscal deficit to GDP, } r \text{ is the composite real interest on domestic and forex debt, including the impact of real exchange rate changes, } g \text{ is the real growth rate and } t \text{ denotes the year.}^{20} \text{ In terms of the discussion above, the second term on the right hand side of equation (1) equals ADD.} \]

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18 For the technically inclined: the derivations follow from the discrete-time difference equation for public debt expressed as a ratio of GDP. The change in the debt-to-GDP ratio relative to the previous year is determined by the primary deficit, the GDP growth rate, interest rates and exchange rate movements during the year in question. The interest rate calculation implicitly assumes one-year debt as a simplification.

19 Note that contribution from real GDP growth is given by \(-\frac{g}{1 + g})d_{t-1}, \text{ where } g \text{ is real GDP growth in year } t \text{ and } df_t, \text{ is the public debt-to-GDP ratio at the end of year } (t-1). \]

20 For a complete derivation, see Annex 2 in Pinto (2014).
Now the real growth rate, $g$, as well as inflation measured by the GDP deflator, $\pi$, are given in the “Key macroeconomic and fiscal assumptions” at the bottom of the IMF-WB’s DSA table for public debt. This can be used to compute the nominal growth rate, $G$, given by the equation: $(1 + G) = (1 + g)(1 + \pi)$.

The next step is to use the fact that the second term on the right hand side (which equals $ADD$) can also be written as:

$$(2) \quad \frac{(1-G_t)}{(1+G_t)} d_{t-1} = ADD.$$  

In equation (2), $i_t$ is the composite nominal interest rate on domestic and forex debt and also, by construction, captures the impact of exchange rate movements on the forex component of public debt. The formula used for the various country tables in this report to compute the composite nominal interest rate is obtained by rearranging equation (2):

$$(3) \quad i_t = G_t + \frac{ADD}{d_{t-1}} (1 + G_t).$$

**Nominal Interest Rates on Local Currency and Forex Debt**

The “Key macroeconomic and fiscal assumptions” at the bottom of the IMF-WB’s DSA table for public debt also include the real interest rate on domestic debt. Let us denote this as $r^d$. Then its nominal equivalent is given by the equation:

$$(4) \quad i^d = (1 + r^d)(1 + \pi) - 1,$$  

where $\pi$ is inflation once again measured by the GDP deflator.  

The final step is to calculate the local currency-equivalent of the interest rate on forex debt, which we denote $i^f$. This is given implicitly by the formula:

$$(5) \quad i = w^d_i + (1-w)i^f.$$  

In (5), $i$ is the composite nominal interest rate on public debt computed in accordance with (3) and $w$ is the weight of local currency (domestic) debt in total public debt at the end of the previous year. The only unknown is $i^f$, and it can be solved for using (5).

**Composite Real Interest Rate on Public Debt**

The composite real interest rate, $r$, is given implicitly by the equation:

$$(6) \quad (1 + r) = (1 + i)/(1 + \pi),$$  

where:

$i$ is the composite nominal interest rate given by equation (3) and $\pi$ is inflation measured by the GDP deflator.

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21 The reason for using the GDP deflator to obtain the nominal interest rate is that we are looking at the ratio of debt-to-GDP and the same price that is used to convert real growth into nominal growth should be used to obtain the nominal interest rate.

22 Note that $i^f$ is the local currency-equivalent interest rate on forex debt. To give an example: suppose all forex debt is in USD and carries a (dollar) interest rate of 2%. In other words, $i^d = 0.02$. Now suppose the nominal exchange rate, expressed as the local currency price of the USD, goes up by 10% during the year. Then $i^f$ would be 12% taking into account the currency depreciation (it would actually be slightly higher given the discrete time setting in which the formulas in this annex have been presented).
Appendix 2: A few questions on the Ethiopian DSA in IMF (2018b)

Before proceeding to the questions on the DSA in IMF (2018b) below, the serious discrepancies in debt data relative to the previous country report for Ethiopia, IMF Country Report 16/322, are worth noting. For example, the public debt-to-GDP ratio for 2014/15 is shown as 61.2% in IMF (2018b) whereas it was 50.7% in the previous country report. This illustrates the data challenges on public debt in ADF countries.

(i) More clarity is needed on the numbers in Table 3 of the DSA for public debt in IMF (2018b):

(a) Table 3 shows public debt-to-GDP at 53.8% in 2016/17 but paragraph 1 of the DSA puts the number at 57%.

(b) Table 3 shows the primary deficit at 5.2% of GDP for 2016/17. Text table 1 shows the fiscal deficit at 3% of GDP for 2016/17 while Table 3b on page 22 shows interest payments at 0.5% of GDP. This means a primary deficit of 2.5% for the general government. What does the balance of 2.7% of GDP represent? Are these losses of SOEs? How are the SOEs performing (apart from Ethiopian Airlines)? How effective have the steps to curb SOE borrowing been?

(c) How should one interpret the residual of 7.5% of GDP for 2014/15 in Table 3?

(d) Does the real depreciation of 11.3% for 2017/18 in Table 3 (under "Key macroeconomic and fiscal assumptions") incorporate the effect of the October 2017 15% devaluation?

(ii) What exactly is the bilateral deposit at NBE referred to in paragraph 12 and footnote 7 of the DSA? What is the size and what are the terms?

(iii) The numbers in Text Table 1 of the DSA don’t seem to mesh. For example, if the ratio of exports to GDP goes up from 8.3% in 2017/18 to 9.1% in 2018/19 and GDP grows at 8.5% in 2018/19, this would require exports to grow at over 18%; but the number shown for export growth is 13.4%. Perhaps different deflators are being used?