

Background paper for the panel discussion on “Debt sustainability and the future: Rebooting development finance”

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There are four sets of macro points that are relevant for today's discussion: (a) remind ourselves of the backdrop in an interconnected – geographically and functional – pandemic-ravaged world; (b) constraints on EMs in their respective (evolving) responses to the Covid-induced macro challenges; (c) the comparative outlook for the fiscal situation, including cautious observations on definitions of public debt aggregates that are deployed for assessing fiscal sustainability; and (d) a brief look ahead to the risks as the exit from (unprecedented) ultra-loose monetary policy by systemic central banks will inevitably cast its shadow.

There are some overarching considerations that inform/affect the discussions around the policy questions that are the subject of the panel today:

1. First, to what extent, realistically, can demand-side measures offset the ongoing Covid-induced shock, which is first and foremost a supply shock?
2. A second consideration is to what degree central banks can substitute for governments who have primary responsibility for addressing the public health-related risk. The share of increased direct expenditure on public health in overall increases in official expenditure has been relatively small. Worker/consumer risk aversion on the public health front will influence current and future work-choice, consumption and investment decisions.
3. Third, the world is in the midst of elevated and possibly even increasing trade tensions. (The WTO still appears to be dysfunctional.)
4. Last, but not the least, in some parts of the world, notably Asia, national security aspects have reared up in a very serious manner since 2020.

This means that prioritisation, and timelines of policy support are important, especially given the uncertainty on the duration and, concomitantly, the depth of the public-health shock. EMs have made choices regarding macroeconomic management keeping in mind 5 things:

1. 'Initial conditions' with respect to availability of policy space, viz., monetary policy, fiscal policy and strength of bank balance sheets pre-Covid, that is before March 2020.

2. They have to keep some ammunition dry due to uncertainty over the evolution of the pandemic and the consequent implication of keeping economic sectors going. In 2020, EMs could not have thrown the fiscal kitchen sink to address the output losses.
3. Energy importing EMs did benefit from the collapse in oil price for about 12 months, and the choice governments have made is whether to pass on the benefit to consumers or tax away the difference and help alleviate pressure on the fiscal situation.
4. An EM currency is not a reserve currency, by definition. We know from experience that global flows are fickle; therefore, policy risk aversion is understandable.ⁱ
5. If reputation for prudent macroeconomic management wanes, then flows will be affected sharply – the ‘taper tantrum’ episode made all of us aware of the hazard.

EMs have relied relatively more on monetary policy as they entered this phase with limited fiscal elbow room. On balance, the success of keeping inflation more or less under control pre-Covid allowed EM central banks to aggressively cut policy rates, and in several economies real policy rates have been negative. Thus far, inflation seems to be relatively muted, but there are indications of change. EM central banks excluding China have expanded their balance sheets by about 5 percentage points of GDP, including some support for official spending – a limited/constrained/less pure form of so-called Modern Monetary Theory (MMT) has been meaningfully adopted (as it had been to different degrees and in diverse countries in the past).

Let us now broaden the discussion on the fiscal side. If we look at fiscal deficit data for groups of countries from 2020 to 2025, two things are apparent. One, countries that can afford to do so have borrowed more, and those that didn’t have the fiscal space coming into Covid, have been cautious. For example, the G7 increased the fiscal deficit by 9 percentage points of GDP in 2020 from the previous year,ⁱⁱ in contrast low-income countries increased by barely 1 1/2 percentage points of GDP, and emerging markets/middle income countries somewhere in between by 5 percentage points of GDP (see tables below).

General government overall balance (as percent of GDP)

	2019	2020	2025
AEs	-2.9	-11.7	-3.0
G7	-3.7	-13.2	-3.5
US	-5.7	-15.8	-5.0
EMs	-4.7	-9.8	-5.2
LICs	-3.9	-5.5	-3.7
China	-6.3	-11.4	-6.5
India	-7.4	-12.4	-7.7

General government gross debt (as percent of GDP)

	2019	2020	2025
AEs	103.8	120.1	121.4
G7	118.0	136.7	138.1
US	108.2	127.1	133.9
EMs	54.7	64.4	72.2
LICs	44.3	49.5	46.3
China	57.1	66.8	83.3
India	73.9	89.6	83.8

General government net debt (as percent of GDP)

	2019	2020	2025
AEs	75.2	90.8	95.4
G7	86.9	104.9	109.8
US	83.0	103.2	113.2
EMs	38.7	46.0	51.6
LICs	44.3	49.5	46.3
China	n/a	n/a	n/a
India	n/a	n/a	n/a

Source: IMF Fiscal Monitor, April 2021

The second point is that projections indicate that by 2025 this will be pulled back. So, for instance, for the G7, general government fiscal deficit in 2025 will be 3.5 percent of GDP, which is lower than the number in 2019. (Even if the 'flow' fiscal deficits are reversed,

there still will be a larger stock of public debt outstanding.) It is not unreasonable to take this pull-back with a pinch of salt. In addition to Covid, two more drivers have assumed importance in discussions around public expenditures, specifically redistribution, which will entail some form of higher social spending, and climate change. Both are medium- to long-term commitments by governments for higher public spending. (Fiscal deficits will likely be impacted if commensurately revenues don't increase or budgetary savings are not made elsewhere.) On climate change there has been little said about spending on *adaptation*, which is, by definition on public goods – which, *inter alia*, cover protection against flash floods (witnessed in Europe recently, and during the monsoon season every year in Asia), strengthening of river embankments and extending sea walls; these will be required *now*, not in some distant future, in addition to climate *mitigation* investments.

The third reason why these projections of relatively quick and deep fiscal correction may not come to pass is that Covid itself is not yet done in respect of disrupting economic activity so growth recovery may end up being lower than envisaged this year and next.

One conceptual change for calculating debt and assessing sustainability of fiscal programmes is the modification that seems to be gaining traction, namely, moving from looking at gross general government debt to net general government debt aggregates. While this change is qualitatively an improvement and useful, we need to be careful that the consolidation and netting out is done correctly; in a manner that is complete so that is progress, and does not smack of 'heads I win, tails you lose' to record and highlight 'convenient' numbers. In brief the following illustrative list may be useful in the interest of comprehensiveness, uniformity, consistency and comparability even as important judgment calls have to be made (including in the list below):

1. The measure should be the net non-monetary debt of the consolidated general government and central bank (see truncated formal treatment of deficits, debt and sustainability below). General government should capture all levels of government (Federal/central, provincial/state and county/local authorities) except for the central bank.

2. Domestic and foreign currency debt of government-sponsored enterprises and public sector units should be included.
3. Debt on the books of SPVs that are majority owned by government to build infrastructure and other projects.
4. A measure of contingent liabilities that take the form of financial guarantees given by governments.
5. Perhaps, a quantitative evaluation of unfunded pension liabilities of the defined-benefit kind promised and underwritten by the government.
6. Lastly, in some countries the government owns banks and other financial institutions that take deposits from the public – to what extent these can become sovereign responsibility in the event of stress is a judgment call that may also need to be made.

The consolidated public sector budget identity is given in eq. (1).ⁱⁱⁱ It consolidates general government (central, state and local) with the public enterprise sector and the central bank.

$$\frac{MB_t - MB_{t-1}}{P_t} + \frac{B_t - B_{t-1}}{P_t} + \frac{V_t(\tilde{B}_t^* - \tilde{B}_{t-1}^*)}{P_t} - \frac{V_t(CBFER_t^* - CBFER_{t-1}^*)}{P_t}$$

$$\equiv C_t + A_t - T_t - PRIV_t + i_{t-1} \frac{B_{t-1}}{P_t} + i_{t-1}^* \frac{V_t}{P_t} (\tilde{B}_{t-1}^* - CBFER_{t-1}^*) - \rho_{t-1} PSK_{t-1} \quad (1)$$

Where,

MB is nominal stock of base money;

B is the stock of domestic currency denominated public debt;

\tilde{B}^* is the stock of foreign currency denominated public debt;

$CBFER^*$ is the stock of central bank foreign exchange reserves;

PSK is the public sector capital stock valued at current reproduction cost;

C is government consumption;

A is public sector gross domestic capital formation;

T is taxes net of subsidies and transfers;

$PRIV$ is privatisation receipts;

i is the domestic nominal interest rate;

i^* is the foreign nominal interest rate;

V is the foreign exchange rate;
 P is the domestic price level;
 ρ is the cash return on public sector capital.

The formal discussion, for the sake of simplicity, is cast in terms of one-period public debt, and the interest paid on foreign debt is assumed to be the same as that earned on CBFER*.

Let $B^* \equiv \tilde{B}^* - \text{CBFER}^*$ be net official foreign debt.

It is sometimes helpful, albeit without behavioral significance, to rewrite this identity in terms of the behavior over time of stocks and flows per unit of GDP:

$$b_t + b_t^* \equiv b_{t-1} \frac{(1 + i_{t-1})}{(1 + \pi_{t-1})(1 + n_{t-1})} + b_{t-1}^* \frac{(1 + i_{t-1}^*)(1 + \theta_{t-1})}{(1 + \pi_{t-1})(1 + n_{t-1})} + c_t + a_t - \tau_t - \text{priv}_t - \frac{\rho_{t-1}}{1+n_{t-1}} \text{psk}_{t-1} - s_t \quad (2)$$

Lower-case stocks and flows are the corresponding upper-case quantities expressed as a proportion of GDP:

$$\pi_{t-1} \equiv \frac{P_t - P_{t-1}}{P_{t-1}}$$

$$n_{t-1} \equiv \frac{Y_t - Y_{t-1}}{Y_{t-1}}$$

$$\theta_{t-1} \equiv \frac{V_t - V_{t-1}}{V_{t-1}}$$

$$s_t \equiv \frac{MB_t - MB_{t-1}}{P_t Y_t}$$

Y denotes real output. $c_t + a_t - \tau_t - \rho_{t-1} \text{psk}_{t-1} - \text{priv}_t \equiv \text{ppd}_t$ is the primary public sector deficit per unit of GDP. It is the conventionally measured consolidated public sector deficit net of any interest payments or interest income.^{iv} Total public debt as a fraction of

GDP will be denoted $d \equiv b + b^*$. s_t , the increase in the nominal stock of base money as a fraction of GDP, is seigniorage. Eq. (2) can be rewritten as

$$d_t \equiv (1 + \tilde{r}_{t-1})d_{t-1} + ppd_t + \frac{b_{t-1}^*}{1+n_{t-1}} [(1 + r_{t-1}^*)(1 + dep_{t-1}) - (1 + r_{t-1})] - s_t \quad (3)$$

where dep is the proportional depreciation rate of the real exchange rate; r the domestic real interest rate; r^* the foreign real interest rate; and $\tilde{r} \equiv (r - n)(1 + n)^{-1}$.^v

Defining the augmented primary deficit as:

$$\overline{ppd} \equiv ppd_t + \frac{b_{t-1}^*}{1+n_{t-1}} [(1 + r_{t-1}^*)(1 + dep_{t-1}) - (1 + r_{t-1})], \quad (4)$$

the following identity is obtained:

$$d_t \equiv (1 + \tilde{r}_{t-1})d_{t-1} + \overline{ppd}_t - s_t \quad (5)$$

This original budget identity can be rewritten as:

$$D_t \equiv D_{t-1} + \overline{PVppd}_t - S_t \quad (5')$$

where $D_t \equiv \delta_{t-1}d_t$ is the present value at time zero of public debt at time t ; $\delta_i \equiv$

$\prod_{j=0}^i (1 + \tilde{r}_j)^{-1}$ and $\delta_{-1} = 1$ is the discount factor from period zero to period $t + i$;

$\overline{PVppd}_{t+1+i} \equiv \delta_{t+i}\overline{ppd}_{t+1+i}$ is the present value at time zero of the primary deficit at time $t + 1 + i$; and $S_{t+1+i} \equiv \delta_{t+i}S_{t+1+i}$ is the present value at time zero of seigniorage at time $t + 1 + i$.

In a finite horizon economy with a finite terminal date T , the solvency constraint is the requirement that public debt in the last period be non-positive, i.e.

$$b_T \leq 0 \quad (6)$$

The terminal condition imposed to obtain the government solvency constraint or present value budget constraint is:

$$\lim_{i \rightarrow \infty} \frac{1}{\delta_{t-1}} E_t \delta_{t+i} d_{t+1+i} \leq 0 \quad (7)$$

When (7) holds with equality, and after some transformations, the following familiar government solvency constraint or public sector present value budget constraint is obtained^{vi}:

$$d_t = \sum_{i=0}^{\infty} \frac{E_t \delta_{t+i}}{\delta_{t-1}} [-\overline{ppd}_{t+1+i} + s_{t+1+i}] \quad (8)$$

The terminal condition (7) can be rewritten as

$$\lim_{i \rightarrow \infty} d_t E_t \prod_{j=0}^i \left(\frac{1}{1 + \tilde{r}_{t+j}} \right) \left(\frac{d_{t+j+1}}{d_{t+j}} \right) \leq 0 \quad (9)$$

With a positive initial stock of debt ($d_t < 0$) eq. (9) is satisfied only if ultimately the debt is expected to grow at a rate less than the interest rate $[1/(1 + \tilde{r}_{t+j})](d_{t+j+1}/d_{t+j}) < 1$.

Since

$$\frac{d_{t+j+1}}{d_{t+j}} \frac{1}{1 + \tilde{r}_{t+j}} \equiv 1 + \frac{\overline{pp} \bar{d}_{t+j+1} - s_{t+j+1}}{(1 + \tilde{r}_{t+j}) d_{t+j}} \quad (10)$$

it is clear that solvency requires, eventually, positive values for the sum of seignorage and the augmented primary surplus. This is only a necessary condition, of course. The flows of seignorage and primary surpluses should satisfy (8).

Looking ahead

Markets have welcomed, indeed by drum beating have, perhaps, led central banks to slacken inflation mandates. The formal relaxation is designed to impart credibility to the ‘lower for longer’ policies that are being followed; real policy rates are significantly negative in many major economies. Without explicitly calling it that, some form of MMT(-*lite?*) is now *de rigueur* in a fair number of countries to support the ‘high-wire’ fiscal act of governments.

What are the risks, especially for developing economies?

At some point the same markets will demand a sharper spelling out of extant language as also explanation of related ‘technical’ mechanisms of the stance of central banks. One suspects that this will happen at the first signs of inflation picking up enduringly. But this is likely to be asynchronous as domestic rebound from the supply shock will vary from economy to economy according to the evolution of the pandemic within borders and the response to it by governments in terms of rolling lockdowns, pace of basic vaccination programmes, booster shots etc. (The asynchronous nature is a distinct risk in itself as this may contribute to confusion and contradictory language from the major central banks.)

The implications of ‘sudden stop’ in the ‘tsunami of global liquidity’^{vii} that started last year will likely be non-trivial. First the decrease in the rate of Quantitative Easing, then the

winding down, and finally the change in rates by the systemic central banks. The turbulence that came to be called ‘taper tantrum’ is fresh in the minds of EM policy makers.

Monetary policy globally (including in India) is accommodative; in fact, the forward guidance broadly suggests policy is ultra-loose. Under the guise of flexibility, communications have been akin to a ‘rope bridge’ across a valley that is allowed to leisurely sway. In other words, conducive to convenient hand waving for transitioning to policy normality, that is, reach the other side of the ‘valley’ without bothering about detail;^{viii} however, at some point, a ‘structure with secure guard rails’ may be more helpful to reassure markets and anchor expectations.

Finally, there is the collateral damage to the growth prospects, particularly of low-income countries and EMs, in the midst of global trade tensions between major trading blocs.

There is an African saying, ‘when elephants fight, the grass suffers’.

ⁱ ‘Going big’ can be costly.

ⁱⁱ For the broader group of advanced economies (AEs) the evolution in the general government deficit numbers are somewhat similar.

ⁱⁱⁱ The following three pages of the paper draw heavily from Willem Buiter and Urjit Patel “Debt, Deficits and Inflation: An Application to the Public Finances of India”, *Journal of Public Economics*, March 1992; and “Budgetary Aspects of Stabilisation and Structural Adjustment in India”, 1997, in *Macroeconomic Dimensions of Public Finance, Essays in Honour of Vito Tanzi*, Eds., M. Blejer and T. Ter-Minassian (Routledge, London). The interested reader can consult these two papers regarding intermediate steps and details therein for the derivations in this section.

^{iv} The accounting and recognition of privatisation receipts in the public sector deficit identity is slightly complicated but it is a matter of detail.

^v \tilde{r} is a measure of the real interest rate adjusted for the real growth rate of the economy.

^{vi} If $r_t < n_t$ for all t there is no case for (7) to hold. Ponzi games can be viable infinitely in a dynamically inefficient economy; the government can, each period, pay the interest on its existing debt by further borrowing.

^{vii} Term used by Guillermo Calvo.

^{viii} The most glaring is the FOMC’s press statement of August 27, 2020 that it ‘seeks to achieve inflation that averages 2 percent over time’. 2 percent may be clear enough, but average over how many years? 2, 3, 5, 10 years? And even flexibility requires tolerance bands for credibility.