# On debt sustainability, functional finance, and the transfer problem

HOW OUGHT sustainability of public debt be assessed? And how should this assessment inform public taxation and spending decisions now and in future?

There are few questions of greater import in macroeconomics today. Yet answers remain elusive; often, discussions of fiscal policy are anchored by the need to attain a 60 percent debt-to-GDP ratio—or, more simply, the notion that public debt is too high. But why? What grounds are there for any debt target?

More worrying, perhaps, is the fact the international community struggles to understand lessons from the past decade. What is the correct stock of public debt? Why exactly was it necessary for Greece to default, but not Portugal? Is Argentina's public debt today sustainable? We'll get these questions.

Yet upon the opportunity to rethink debt sustainability analysis (DSA) in 2011, IMF staff acknowledged previous analysis "often turned into a routine exercise, with mechanical implementation of the DSA template, little discussion of DSA results, and limited linkages between the DSA and discussion of macroeconomic and financial policies" (¶2). At this crucial opportunity to fundamentally challenge and rethink sustainability—including key metrics such as the 60% debt-to-GDP target, the meaning of fiscal space, and the link between fiscal and external sustainability—the Fund doubled down on the pre-existing framework. We are stuck in the same old grooves of pre-crisis thinking.

That the framing of public debt and fiscal policy has barely moved on from a decade ago is a matter of *huge* concern. Absent policy tools following any near-future macroeconomic malaise, we ought carefully reassess our thinking. It is crucial we do not succumb to irrational fear of public debt; we need to sustain the flow of aggregate spending in the years ahead. We ought also educate the public against the false notion that public debt is always a burden—in fact, it can be a public good.

Unfortunately, economics lacks fresh thinking—groping in understanding, deflationary in mindset, atavistic in morality-of-debt thinking.

Fortunately, a conference in Washington, DC tomorrow offers an opportunity to set the record straight. Let's pre-empt therefore *five messages* on public debt that *ought* emerge from this conference.

**First, public debt need never be repaid**. Unlike a household of finite horizon, a State or government can reasonably be thought to exist forever. Thus, ridiculous in other contexts, the infinite horizon budget constraint for the government is not an unreasonable analytical device. And with this, standard analysis implies public debt need never be "repaid."

Recall the public debt dynamic expression, that which underlies official assessments of sustainability:

$$b_t = -pr_t + \left(\frac{1+i_t}{1+g_t^Y}\right) b_{t-1}$$

where debt-to-GDP at time $t$ ($b_t$) is decreasing in the primary surplus-to-GDP ($pr_t$) but increasing in the "snowball effect" whereby the nominal one-period interest ($i_t$) on existing debt-to-GDP ($b_{t-1}$) exceeds the growth of nominal GDP ($g_t^Y$).

This equation can be solved forward, with assumed steady-states for macro variables, if the interest on public debt is above the nominal growth rate ($i > g^Y$), thus:

$$b_{t-1} = \left[1 - \left(\frac{1+g^Y}{1+i}\right)^{N+1}\right]\left(\frac{1+g^Y}{i-g^Y}\right) pr + \left(\frac{1+g^Y}{1+i}\right)^{N+1} b_{t+N}$$

which gives today's debt stock as the arithmetically weighted average of, on the one hand, the net present value (NPV) of the entire future of primary surpluses and, on the other, the time $t+N$ outstanding debt-to-GDP. Under certain "rationality" conditions, the latter expression shrinks to zero as the time horizon extends to infinity. Sustainability thus hinges alone upon the flow of future primary surpluses.

A sustainable fiscal path—for pre-existing debt stock—in this way comes to resemble the standard bond pricing formula in finance. A string of primary fiscal surpluses serve as "coupon payments," with the residual stock of debt remaining at time $t+N$ being the bond's "principal" repayment.

But for a government existing "forever," debt will be rolled over to infinity. As such, taking the limit of the above expression requires us to impose a no-Ponzi condition (NPC)—that the terminal NPV of the debt stock is zero. This NPC implies the government cannot capitalize interest forever, rather must generate primary surpluses over the infinite horizon sufficient to service the face value of debt in full. And a sustainable fiscal plan is like providing coupon payments in perpetuity through primary surpluses. It is as if the government issues a perpetual bond with primary fiscal surpluses as coupons.

For example, any fiscal rule of the following form can be shown the be "sustainable":

$$pr_{t+N} = \gamma \left( \frac{i - g^Y}{1 + g^Y} \right) b_{t+N-1}$$

providing $\gamma > 0$—where $\gamma$ reflects the extent to which the fiscal authority capitalizes interest or meets the (growth adjusted) interest rate in full (i.e., when $\gamma = 1$). The problem with such a rule is that although the NPC is met, for $0 < \gamma < 1$ the debt stock increases exponentially:

$$b_{t+N} = \left( \frac{1 + (1 - \gamma)i + \gamma g^Y}{1 + g^Y} \right)^{N+1} b_{t-1}$$

requiring the primary surplus to likewise increase through time because the government is not servicing the interest on debt in full, instead growing the debt stock. It is unrealistic, however, to think the community will devote an intolerable share of national income to service public debt; thus, while theoretically "sustainable" such a fiscal rule is practically unworkable.

A more reasonable rule-of-thumb for sustainability requires $\gamma = 1$, meaning the fiscal authorities generate a primary surplus equal to growth-adjusted nominal

interest payments in each period. This implies debt-to-GDP remains constant through time—and the face value of outstanding debt grows in line with NGDP. Most importantly, such fiscal policy is not sustainable simply because the debt-to-GDP ratio remains constant—a logic sometimes applied during practical assessments of sustainability—rather because the NPV of future primary surpluses *exactly* equals the debt stock initially outstanding. Today's debt conforms exactly with the NPV of the government's fiscal plan—ergo, it is sustainable.

Regardless, notice no talk here of the debt stock being repaid. It remains constant as a share of GDP. It is perpetual. Those who state "the problem with government debt is that at some point it has to get repaid" are scaremongering. Government debt never has to be repaid. Only serviced.

**Second, a 60% debt-to-GDP target is unnecessary, and for the public misleading.** Indeed, what stock of debt ought policy makers seek to attain? One answer might note the primary surplus that can be sustained in a steady state, while plugging in expected nominal interest and growth rates to the solution to the government's intertemporal budget constraint. The sustainable, steady-state debt stock corresponds to:

$$b = \left(\frac{1 + g^Y}{i - g^Y}\right) pr$$

Imagine a primary surplus of 1½% of GDP while nominal GDP growth of 5% is typical—think 3% real growth and 2% inflation. And imagine the average nominal interest on government debt is 7½%—so about 5½% real. Then a debt-to-GDP ratio of 63% is indeed sustainable, equal to the NPV of future primary surpluses. If the debt stock were higher than this, debt would not be sustainable and fiscal adjustment needed *at some point*.

So, a 60% public debt-to-GDP ratio would be a reasonable target. But notice how outlandish are the assumptions needed to generate this result. Times have changed. Imagine instead a primary surplus of ½% attained in perpetuity. But let nominal GDP growth slow

to 3%—say 1% real and 2% deflator growth. And let the average nominal interest rate fall to 3½%—say 1½% real. Then the sustainable debt-to-GDP ratio, the NPV of future primary surpluses, is 103%.

This latter calculation makes the sustainability of recent post-crisis debt ratios appear much less foreboding. With lower nominal and real interest rates, even with less-ambitious primary surpluses, notions of sustainable public debt should be correspondingly adjusted. Or, at least, they should be flexible.

Yet analysts and politicians are spellbound by metrics such as a 60% public debt target. Where did this number come from? Why is it sacrosanct? In the context of the Maastricht Treaty negotiations it was rationalized thus: "the debt reference value is very close to the average value of this indicator for the EC [European Community] in 1991" (Buiter, Corsetti, and Roubini.)

Are we really basing objectives for fiscal policy for many countries today on the arbitrary historical happenstance that the average public debt stock of a subset of countries in 1991 was roughly 60 percent of then-GDP? Basically, yes.

A reasonable counterargument might note nominal interest rates can be expected to normalize at some point. The debt stock should be adjusted down in anticipation. The answer to this, of course, is that during such normalization the economy will accelerate through increased private consumption or investment—in which case the primary surplus should adjust *upward* in lock-step to assure sustainability of this stock.

Let's build on our previous assumptions uncovering a 103% of GDP sustainable stock with ½% primary surplus and 3½% average nominal interest rate. If the nominal interest on public debt here increased to 4%, with unchanged NGDP assumptions, the primary surplus would have to reach 1% instead of ½% to assure sustainability. If the interest rate reached 5%, the primary surplus needed would be 2%. As the economy recovers and private activity accelerates, driving up the interest rate, it becomes incumbent on the government to accrue

increased tax revenues as higher primary surpluses. But there is no *need* to drive down the stock of outstanding debt at all—unless, of course, the boost to fiscal revenues presents an opportunity not be missed.

In other words, it is more logical to adjust the primary balance up in good times—during the acceleration of private activity and normalization of interest rates—than pre-emptively drive down the debt stock in vain hope that good times lie ahead.

It is worth noting, however, —as some will have noticed—that even the above narrative runs into problems. How so? The average interest paid on government debt often—perhaps typically? —falls below the nominal growth rate. Further fiscal freedom reveals.

Over the past 50 years, for example, CBO data reveals the average interest rate paid by the Federal government in the United States has been below the nominal growth more than half the time. Roughly speaking, only in the 1980s and early-1990s, following the Volker deflation and high prevailing interest rates, did Federal interest outlays drift above NGDP growth—suggesting imperative for primary surpluses. Over the past 20 years, nominal interest paid in the US only exceeded NGDP growth during slowdowns in activity and unwinding of private imbalances—i.e., precisely when public deficits were needed to offset private pullbacks.

The same observation applies to most major economies today—China, euro area, Japan, and UK, for example.

With this, the government *need not generate primary surpluses* at all, with the caveat related to the balance of payments below. Our bond pricing parallel has run its course. We are unanchored, in need of another way of framing sustainability.

**Third, public debt reflects private savings.** How then should we proceed? Observe how, in a closed economy, government debt provides—for now at least—the only "outside" asset available to the private sector, intermediated normally through the financial sector. In this closed system, the sum of private and general

government saving-investment balances must equal zero—they are mirror images. Therefore, set the fiscal balance ($fb_t$) plus the private saving-investment balance ($psib_t$) equal zero: $fb_t + psib_t = 0$.

Make the appropriate substitutions into our debt dynamic expression, we now get:

$$b_t = psib_t + \frac{b_{t-1}}{1 + g_t^Y}$$

With this we unveil an alternative way think about public debt—as an outlet for private saving absent other "outside" financial assets. The stock of debt-to-GDP at time *t* is that carried into the period—past private savings, adjusted for growth—*plus* that needed to supply net financial assets commensurate with flow of surplus private sector saving today. In other words, fiscal policy might just as well adjust to private sector saving-investment proclivities as the other way around.

This somewhat resembles Abba Lerner's notion of functional finance. And it suggests an alternative way of framing "fiscal space"—as the surplus of private saving, changing organically with aggregative private consumption and investment choices.

What debt stock might thus emerge? In steady state, we can write public debt-to-GDP as a function of the private sector saving-investment and growth of nominal GDP:

$$b = (1 + g^Y)\frac{psib}{g^Y}$$

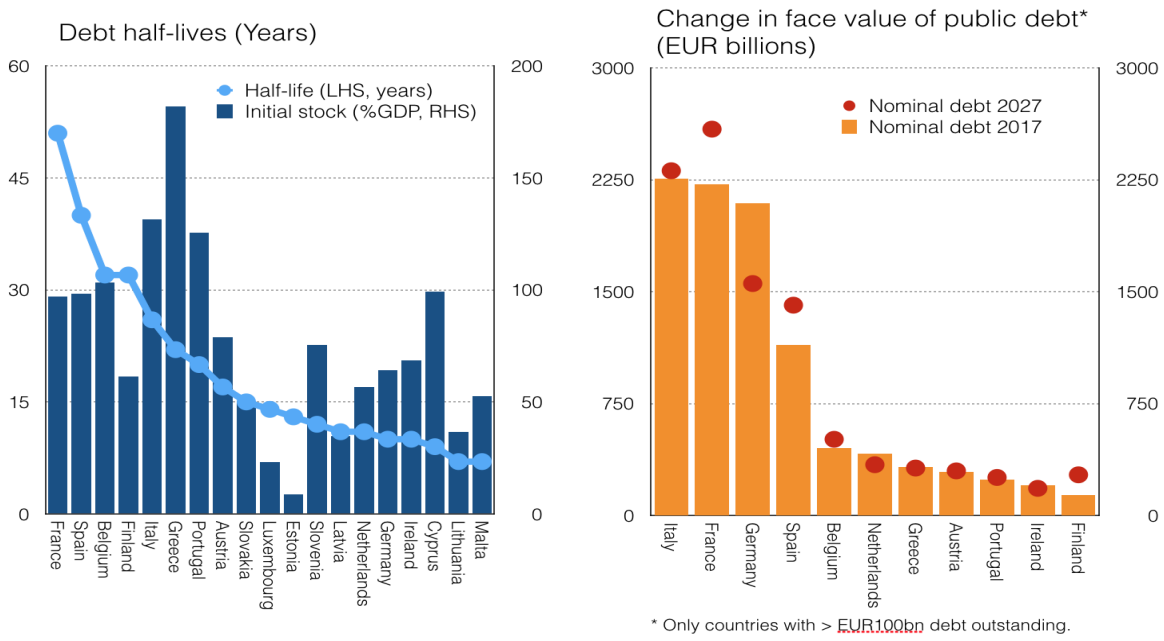
Consider Japan. Over the past 30 years, the average surplus of private saving over investment has been about 7½ percent of GDP, while nominal GDP has grown on average 1½ percent. If fiscal policy adjusted in full to net private saving, very slowly it would reach perhaps 500 percent of GDP. It seems likely, however, that nominal GDP growth would be more rapid as a result, the actual outcome lower than this. And such levels might never be reached once private saving-investment balances in any case adjust. But there is no reason to be concerned for sustainability here, Imagine a

flight by residents to foreign assets—the exchange rate depreciation and resulting inflation will erode the real value of debt, restoring sustainability still.

Of course, in fact, the absence of domestic financial assets means this saving finds expression through Japan's current account surplus—resulting in, at times, sustained JPY appreciation, requiring either other governments run a fiscal deficit where Japan's won't, or insisting upon private deficits, not necessarily sustainable, elsewhere.

Which leads us naturally onto Germany, where over the past 15 years the private sector surplus of savings over investment has averaged around 7 percent of GDP with nominal growth of about 3 percent (excluding the years surrounding GFC). Were Germany's fiscal policy to adjust in full to private sector saving, then debt to GDP could reasonably—and quite sustainably—approach 240 percent of GDP. Instead, this private surplus is passed on through the external accounts, forcing other governments or private agents into deficit.

**Figure 1: Euro area**: Half lives of public debt (LHS) and changing stock of nominal debt over the next decade (RHS)




This creates challenges elsewhere. Consider the remarkable situation unfolding across the euro area due to Germany's fiscal policy, Figure 1 (left side) shows the "half-life" of debt for each sovereign across the euro area. This back-of-the-envelope calculation uses the latest IMF

WEO database; not country specific, bottom-up analysis, rather top-down projections, using recent average interest rates, growth, and primary balances. It calculates *roughly* how many years it will take for each country to halve their 2017 stock of government debt-to-GDP.

The half-lives revealed in Figure 1 vary greatly, with France at nearly 50 years, Italy about 25 years, and Germany only 10 years. Given that Germany's debt stock is about 60 percent of GDP already, this means it is headed to 30 percent in a decade—unless policy adjusts. And whereas other countries will likely see an increasing stock of nominal debt through time, eroded by expanding denominator, Germany is apparently committed to reducing also the face value of debt!

Consider then right side of Figure 1, showing the likely face value of outstanding debt in a decade for all euro area countries with current debt above €100 billion. Most countries will see euro debt remain roughly constant in nominal terms—with France, Spain, and Finland seeing small increases, though decreasing relative to GDP. However, total German government debt outstanding will fall by close to €500 billion—on top of erosion relative to GDP. Whereas the stock of outstanding German debt today is close to that issued by Italy and France, in 10 years it will be less than ¾ the amount despite that outsized German economy. And the Bund is the reserve asset of choice for non-residents.

As a result, fiscal policy today requires German private savers take ever-greater risk through the accumulation of external assets. Yet forcing unknown and mostly-unknowable non-residents into deficit only creates the risk of disorder and default at some point along the chain of financial transactions in the future—risking the very savings which the German people and companies have worked hard to accumulate. It's likely, if not inevitable, that such pockets of borrowing will result in potential default—witness Turkey and Argentina today.

But default, in sufficient size and concentration, will impact German savers directly, creating distrust of the monetary system—as with the euro area periphery in recent years. Or, if it results in financial instability in

Germany or elsewhere by impacting bank solvency, will result in pressure for government bailout. Today's fiscal prudence is tomorrow's fiscal burden. It's simply a question of passing the hot potato of risk.

This unveils a seldom-spoken aspect of bank-sovereign links and public debt sustainability. Local sovereign assets serve as typically safe, coupon-bearing instruments for the domestic banking system. Government debt becomes a stabilizer of credit creation. Once removed from the banking system, risk-taking increases through credit creation and the potential for disruption grows. It would be superior for the German saver and financial system to be offered ample local government assets—and coupon payments to service those of abstemious disposition as well as welfare-enhancing public consumption and investment—than creating financial instability elsewhere and the clean-up operation that inevitably results.

Let's also note here a strange feature of public debt. It is considered a liability to the taxpayer, but seldom a vehicle for private savings. In juxtaposition, high-powered, central bank money is often taken to be a private asset, but overlooked as public sector liability.

Yet the important role of public debt as private asset ought inform discussion of austerity—if the community prefers the government to issue less debt, other things equal, they ought to hold: fewer "outside" assets in aggregate; assets abroad of *potentially* lower quality; or the community might cut back spending—thus income—to restore original portfolio preferences.

Perhaps the reason for this misunderstanding is that government debt is often indirectly held—via financial intermediaries. Thus, the illusion is created that public debt represents a taxpayer liability but not taxpayer asset—while cash is considered an asset but overlooked as consolidated government liability.

Regardless, any act of public sector abstemiousness ought to trace through which sectors' portfolios are expected to offset any retrenchment—lest falling income result for the community. Recall then the

discussion of the need for austerity in the United Kingdom in 2010. At that time, the newly-formed *Office for Budget Responsibility*, in the context of their forecast for the UK economy, projected household debt-to-income to increase from 160 percent in 2010 to 175 percent in 2015 as an implicit offset to government austerity. In other words, government policy would reduce financial assets available for private savings, while assets and liabilities were created *inside* the private sector—through household borrowing, expected to reach record levels—for the macroeconomic forecasts to hang together. Of course, households were not content with this—as was obvious at that time, not least because of ongoing balance sheet repair. Thus, macro forecasts proved hopelessly optimistic—until austerity was ended at last.

Imagine if the austerity debate had been cast in a different way: we are going to cut back on spending to generate fewer assets for the community's collective saving—but we expect households to borrow more to increase spending on consumption and housing wealth as offset. That is, you borrow so we don't have to! Isn't it better for the sovereign to provide assets than private ebullience of dubious progeny?

**Fourth, the complete, consolidated state balance sheet matters**. Let's be brief. Government debt is not the only domestic "outside asset" available for the private sector. In a fiat currency, closed economy, central bank reserve assets—typically, though not always, backed by purchases of government debt — provides an alternative outside asset for cumulative past and current private sector saving. In addition, the accumulation of assets by the government can make the net debt position of the government substantially different from gross debt—normally the focus of policy.

And so, the preponderance of central bank balance sheet operations now and likely in future imply government debt can be effortlessly replaced by zero coupon, high-powered money as alternative outside asset for the private sector. While hopefully driving the nominal growth rate of the economy above the average interest on government debt, this seigniorage also contributes further to debt sustainability. Moreover,

interest bearing government assets reduce the primary balance needed to simply keep debt to GDP constant.

For Japan, these factors are particularly important today—on top of noted private sector saving proclivities. It thus becomes difficult to imagine Japan's public debt as problematic once visualized through the right spectacles. Very roughly, a third of Japanese debt backs interest bearing assets of higher yield, a third is held by the Bank of Japan, the rest is serviced at interest below the nominal growth rate of the economy. What's not to like?

**Fifth, sometimes the balance of payments matters most**. Most of the above implicitly imagines a closed economy, fiat currency issuing sovereign. However, such abstraction is of limited use for many countries. Indeed, perhaps the most frustrating aspect of existing debt sustainability framework is the feature that all debt—regardless of holder—is measured relative to GDP. This allows the assessment of fiscal sustainability to abstract from the balance of payments (BOP) constraint.

Treating BOP separately conveniently allows a partial equilibrium viewpoint. However, since at least Keynes' concern for the German transfer problem in the 1920s, sophisticated analysis of public debt sustainability has understood both fiscal flows and the means of servicing the external component of this debt.

We need to adjust our thinking to integrate BOP concerns explicitly, therefore. To this end, contemplate a simple—yet meaningful—adjustment: while still evaluating the stock of domestically held debt relative to GDP, instead measure non-resident debt against the flow of exports of goods and services.

In other words, while public debt, $B_t$, is the sum of that held domestically, $B_t^D$, and by non-residents, $B_t^E$—or $B_t = B_t^D + B_t^E$—we postulate a new debt metric as $\tilde{b}_t = B_t^D/Y_t + B_t^E/X_t = b_t^D + b_t^E/x_t$, where lowercase letters represent ratios to nominal GDP ($Y_t$) and where nominal exports of goods and services are given by $X_t$. The "tilde" over $\tilde{b}_t$ recognizes this is no longer the standard debt-to-GDP ratio, rather a hybrid.

This new metric contemplates that while nominal GDP might be the appropriate flow for measuring the sustainability of debt held by residents, *only exports of goods and services* can be used to service the non-resident-held component of debt—making $X_t$ the appropriate base for judging sustainability of the externally held component. It might be better to use total tradeable goods production as the denominator here, but such data is more difficult to come by. It becomes a matter of judgment to assess fungiblity of production between that for local use as against export.

With this sleight of hand, new visas emerge when surveying sustainability. The reader is invited to confirm that the evolution of our new debt metric, combined with the BOP, becomes:

$$\tilde{b}_t = -(pr_t + (1 - x_t)\, tb_t/x_t) + \left(\frac{1 + i_t^D}{1 + g_t^Y}\right) b_{t-1}^D + \left(\frac{1 + i_t^E}{1 + g_t^X}\right) b_{t-1}^E/x_{t-1}$$

where we use a simplified BOP constraint is used: current account given by the goods and service balance less interest on external government debt, financed by new government debt: $CA_t = TB_t - i_t^E B_{t-1}^E = -\Delta B_t^E$.

Our alternate debt metric ($\tilde{b}_t$) is now decreasing in the primary surplus-to-GDP ($pr_t$) *as well as* the goods and service balance-to-GDP ($tb_t$)—with the weight on the latter determined by the ratio of exports of goods and services-to-GDP ($x_t$). The smaller are exports-to-GDP, the smaller is the base for servicing the external government debt, regardless of the primary fiscal balance, placing a larger weight on the trade balance.

This debt metric is also increasing in two separate "snowball effects" related to the nominal one-period interest on debt held domestically ($i_t^D$) providing this exceeds the growth of nominal GDP ($g_t^Y$), and the nominal one-period interest on debt held externally ($i_t^E$) providing this exceeds the growth of nominal exports ($g_t^X$). It now becomes crucial to monitor the source of growth—whether externally driven or the result of

domestic demand. Note, the trade balance is implicitly a function of domestic demand versus export growth.

Observe how this new debt dynamics relation contains the standard metric as a special case—when the exports-to-GDP ratio equals unity ($x_t = 1$).

Imagine a world—not unlike Greece in the mid-2000s and Argentina recently—where nonresident inflows into the government debt market loosen domestic financing conditions, causing an acceleration in growth through domestic demand and real exchange rate appreciation. The traditional debt metric will show the stock of past debt falling relative to GDP, creating the illusion that fiscal policy is sustainable with, say, a balanced budget—as debt-to-GDP perhaps levels out. But this new metric, which penalizes external debt when exports are only a small share of GDP, highlights vulnerability of a growing external deficit.

In other words, simply by measuring externally held debt relative to exports, we are forced to explicitly address the transfer problem facing the economy—to track *both* the primary fiscal and the trade balance consistent with sustainability.

**Figure 2: Argentina, Greece, and Portugal:** Public debt-to-GDP (left) and alternate debt metric (right)

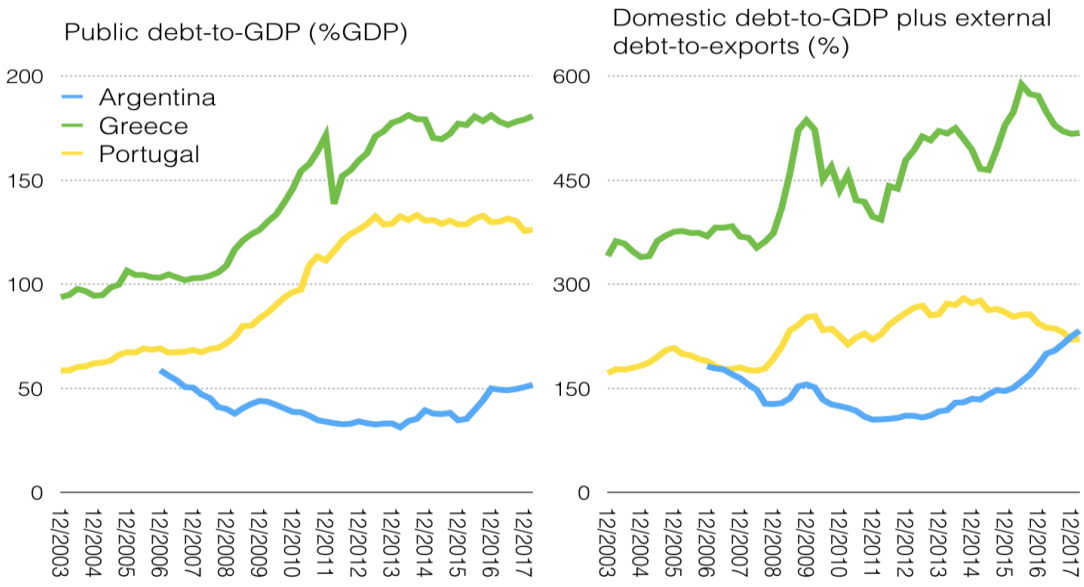


Figure 2 shows debt-to-GDP ratio for Argentina, Greece, and Portugal (left side) and our alternative stock metric (right scale). Figure 3 shows exports of goods and services relative-to-GDP (left side) and the goods and service balance-to-GDP (right side). There are some problems with the data—total debt is measured at face value and external debt at market price, exports of goods and services uses balance of payments data not allowing for national accounts adjustments—so some care is needed in interpretation. But it is indicative.

Two observations.

First, while Greek debt-to-GDP was more elevated than Portugal's throughout, based on the new debt metric Greece is was, and is still, more fragile. This is because while at the end of 2009, for both, externally held public debt was about ¾ of the total outstanding, total Greek debt was substantially higher *and* Greek exports-to-GDP were about 8 percentage points lower than Portugal. The base upon which Greece was expected to service this larger external debt was smaller. In other words, the external component of Greek debt was about 400 percent of exports in 2009 but only 275 percent for Portugal.

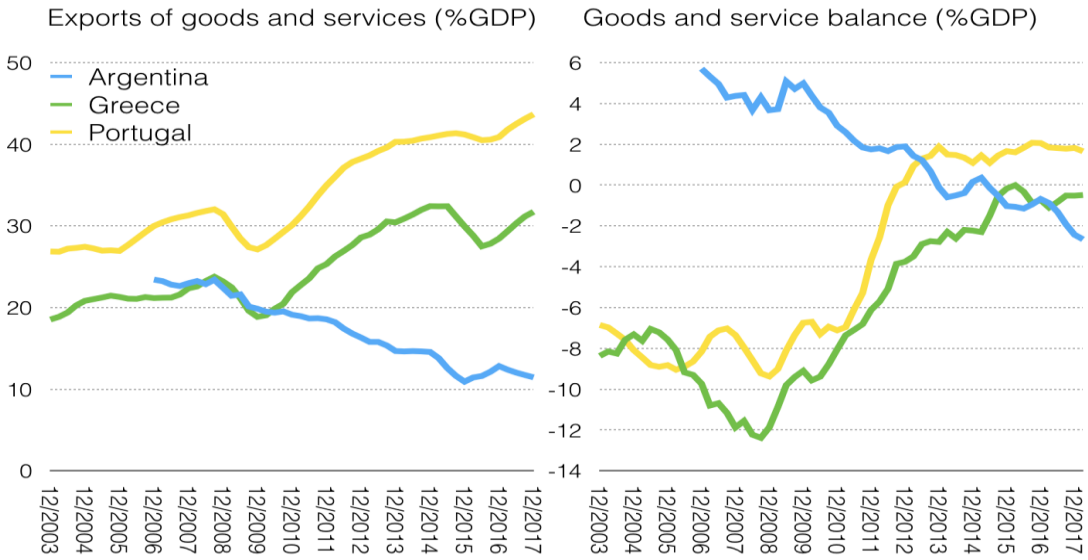
Still today Greek public debt is mainly externally held (88½ percent of total versus 58½ percent for Portugal.) Fortunately for Greece, the interest on that debt is extremely—indeed artificially—low. Any debt sustainability assessment for Greece ought to be less concerned less with the primary fiscal balance, therefore, but instead the *external* surplus that can might be sustained to meet interest payments on this debt. In short: assessing debt sustainability while abstracting from the BOP is nonsense.

For example, imagine a temporary inflow of private financing to Greece now the program is complete. This will spur domestic demand resulting in a trade deficit. The traditional sustainability framework would mistakenly point to a falling debt stock relative to GDP as signaling improving sustainability, arguing for growing fiscal space. Instead, this metric suggests the primary surplus should *tighten* to absorb the proceeds from inflows and keep domestic demand in check—otherwise

the space available to service external debt will be eroded and sustainability through external accounts called into question once more.

In other words, if growth is driven by domestic demand or exports is crucial for the assessment of public debt sustainability with integrated capital markets.

**Figure 3: Argentina, Greece, and Portugal:** Exports of goods and services-to-GDP (LHS) and goods and service balance (RHS)




More generally, this framework suggests the correct fiscal stance for members of the euro area should be set in relation to their *external* primary balance—a widening trade deficit should prompt fiscal tightening, a trade balance surplus looser fiscal policy. That is, absent fiscal transfers across the currency union—note, we are abstracting from secondary transfers here—the one-size-fits-all deficit targets make no sense. Only the government balance can serve as counter-cyclical tool to deliver fiscal-external sustainability—unless we are to rely on the flakey judgement of the private sector.

Second, this framework speaks loudly about Argentina's challenge today. While Argentina's debt-to-GDP, at roughly 50 percent, looks contained, the external share of this debt is reasonably high at about 46 percent of the total. Moreover, exports-to-GDP are very low, at 12 percent (again, balance of payments data). This means

the export base for servicing external debt is limited. Indeed, based on this alternative debt metric, Argentina looks a lot like Portugal today as well as in 2009. However, unlike Portugal today, though like 2009, Argentina has a goods and service deficit of close to 3 percent of GDP. Analyzing Argentina's fiscal sustainability without reflecting upon the external balance is therefore meaningless.

Table 1 computes the "flow metric" implied by this alternative metric, the combined primary fiscal and export-weighted external balance. Indeed, in terms of the flow metric, Greece was in much worse shape than Portugal in 2009—due to lower exports-to-GDP and larger goods and service deficit alongside the primary fiscal balance. But Argentina today has a metric slightly above, but comparable with, Portugal's in 2009. In other words, Argentina today resembles in both stock and flow considerations Portugal in 2009.

Table 1: Key metrics of combined fiscal and external sustainability (%GDP)

| | | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|---|
| Argentina | Fiscal primary balance | -1.3 | -0.6 | -1.6 | -1.7 | -2.6 | -3.5 | -4.4 | -4.7 | -4.5 |
| | Goods and service balance | 5.0 | 2.9 | 1.7 | 1.9 | -0.1 | 0.2 | -1.0 | -0.7 | -2.4 |
| | X of goods and services/GDP | 19.8 | 19.1 | 18.6 | 16.3 | 14.7 | 14.6 | 10.9 | 12.8 | 11.4 |
| | Flow metric | 18.9 | 11.7 | 6.1 | 8.0 | -3.3 | -2.6 | -12.8 | -9.3 | -23.3 |
| Greece | Fiscal primary balance | -10.1 | -5.3 | -3.0 | -1.5 | 0.4 | 0.0 | 0.7 | 3.8 | 3.7 |
| | Goods and service balance | -9.1 | -8.1 | -6.1 | -3.8 | -2.8 | -2.2 | -0.2 | -0.7 | -0.5 |
| | X of goods and services/GDP | 18.9 | 21.9 | 25.3 | 28.6 | 30.4 | 32.4 | 29.9 | 28.5 | 31.7 |
| | Flow metric | -49.3 | -34.1 | -21.0 | -10.9 | -6.0 | -4.7 | 0.3 | 1.9 | 2.6 |
| Portugal | Fiscal primary balance | -7.1 | -8.5 | -3.6 | -1.4 | -0.6 | -2.8 | -0.1 | 1.9 | 2.5 |
| | Goods and service balance | -6.7 | -7.1 | -3.7 | 0.1 | 1.9 | 1.1 | 1.7 | 2.1 | 1.8 |
| | X of goods and services/GDP | 27.1 | 30.1 | 35.0 | 38.2 | 40.3 | 40.9 | 41.2 | 40.9 | 43.7 |
| | Flow metric | -25.2 | -25.0 | -10.4 | -1.2 | 2.1 | -1.2 | 2.2 | 4.9 | 4.8 |

Source: World Economic Outlook and national authorities.

How far can we push this comparison between Argentina and Portugal? While often cited as a success, it's worth recalling how painful and difficult was the adjustment in Portugal—only eclipsed by the Greece. And three additional observations are worthwhile:

First, external liquidity. Gross international

reserves in Argentina at around USD50 billion (about 10 percent of GDP), provides a slender base upon which net external financial flows in current crisis conditions might rest. In contrast, Portugal could draw on cumulative EUR74 billion in eurosystem liquidity (44 percent of GDP) until the peak of crisis pressures in June, 2012. So, Portugal's integration with the euro system helped facilitate capital outflows on top of program support. Argentina doesn't have as such leeway. Asset prices are therefore more likely to overshoot.

Second, Portugal benefitted, eventually, from concessional interest rates and longer maturities on a large part of official support to ease the external constraint (i.e., better than offered by the IMF alone.) Moreover, "whatever it takes" and the promise and, eventually, realization of ECB asset purchases provided further *de facto* BOP support. These outlets are not available to Argentina.

Third, the political imperative of remaining part of the euro provided an anchor and incentive not to default for Portugal; the pain of adjustment was somewhat easier to bear. Recall, Portugal experienced a 7 percent reduction in GDP per capita in constant prices between 2008 and 2013 while the unemployment rate rose to 17½ percent so that domestic demand would restore external sustainability. Argentina's adjustment will likely be equally painful, but quicker to be felt as the nominal exchange rate overshoots, making demand compression front loaded. With elections next year and possible populist revival—alongside an IMF program of hopelessly optimistic assumptions—anyone bullish Argentinean assets today is taking a considerable risk indeed.

Some final parenthetical remarks on the role of the ECB's asset purchase program (APP) contributing *de facto* to debt sustainability in this context are worthwhile. The above abstracts from complete BOP stocks and flows by assuming only government debt will finance external imbalances. More generally, the complete balance sheet of the non-fiscal sectors of the economy should be included in the assessment of sustainability. The private net international investment position and average interest on external assets and liabilities will further

constrain or loosen the external balance, for example.

In the context of the ECB's APP, once consolidated with national central bank (NCB) balance sheet, the purchase of government debt from, say, nonresidents will therefore reduce the burden of external transfer payments to non-residents, replaced by an essentially zero interest rate external loan (TARGET2 debit balance.) Thus, there is not only the issue of traditional seigniorage here, but the *de facto* BOP support by reshaping the external stock positions of the periphery.

Moreover, once APP is unwound, the contribution to external sustainability of net interest flows will be impacted—making the external component of fiscal sustainability a difficult judgment for both policymakers and markets. Moreover, the external flow position will be further impacted by two known unknowns: the EU budget framework from 2020—with the periphery competing with Eastern Europe for net funding—as well as knock-on effect to market liquidity because of Brexit.

## Concluding remarks

There is a great deal indeed for the macroeconomics fraternity to contemplate in relation to debt sustainability. In a bid to escape the same old stale thinking, the above has hopefully provided an alternative vision to encourage the rethinking of our current approach to public debt and fiscal policy—for both reserve currency issuers as well as those constrained by the balance of payments.