

WILLEM H. BUITER

JOYS AND PAINS OF PUBLIC DEBT^{1 2}

July 13, 2004

Abstract

This lecture reviews some of the key fiscal sustainability issues faced by developing countries and early emerging market economies. The key conclusions and recommendations include the following.

- Fiscal sustainability should focus on the fiscal-financial-monetary programme of the sovereign (the state), that is, the consolidated general government and central bank.
- It should include all present and future contingent claims owed and owned by the state. In addition to these contractual obligations, non-contractual current and future outlays and revenues must be accounted for exhaustively and comprehensively: nothing is off-budget or off-balance sheet. The special purpose vehicle veil must be torn away.
- For countries with weak economic and political institutions, the safe level of the net public debt to GDP ratio is likely to be low. If there is a history of sovereign default, the safe level of public debt is likely to be even lower. Weak borrowers will have to generate primary surpluses earlier than more credit-worthy borrowers.
- The attractions of hard currency borrowing during normal times are apt to turn into major disadvantages during periods of financial turmoil.
- Privatisations should be undertaken primarily for efficiency reasons rather than for deficit financing or debt reduction reasons.
- The permanent balance rule for government deficits, where the state raises its net debt to GDP ratio when spending (of any kind) is temporarily high and lowers it when spending is temporarily low, has much to recommend it.

¹ The view and opinions expressed are those of the author. They do not represent the views and opinions of the European Bank for Reconstruction and Development.

² © Willem H. Buiters, 2003, 2004. Forthcoming in P. de Gijssel and H. Schenk eds. *Multidisciplinary Economics: the Birth of a New Economics Faculty in the Netherlands*. Kluwer Publishers, 2004.

1. Introduction

If public debt did not exist, it would most certainly be invented soon. Whether it ought to be invented depends on one's view on the objectives pursued by those who determine the path of public debt issuance, their competence, their capacity for making binding credible commitments (or its counterpart - their proclivity for indulging in opportunistic behaviour) and the institutional (including cultural), political and economic constraints they face.

The Ultimate Welfare Rationale for Public Debt and Deficits.

The normative case for government borrowing and lending, as for all borrowing and lending, ultimately rests on consumption smoothing in a market economy. Often, income and/or non-consumption expenditures (investment, military expenditure³) vary significantly over time. People prefer a more even pattern of consumption over time. They can achieve this by building up financial assets or paying down debt during periods of exceptionally high current income or exceptionally low non-consumption expenditure. And by running down financial assets or increasing their debt during periods of exceptionally low current income and/or exceptionally high non-consumption expenditure.

Ultimately and fundamentally, all loans are consumption loans. Loans can be direct private consumption loans among heterogeneous private consumers, generally intermediated through specialised financial institutions. The Allais-Samuelson's pure consumption loans model (Allais (1947, Samuelson (1958)) is an elegant early demonstration of both the benefits and limitations of intertemporal trade between households. Loans can also be indirect private consumption loans, when enterprises borrow to fund capital formation in excess or enterprise

³ In the national accounts, military expenditure and expenditure on public administration (law and order, the civil service etc) are classified as consumption. From an economic point of view these are expenditures on intermediate public goods and services, not spending on final goods and services. However valuable or essential they may be, they should not be counted as part of value added or GDP. Their contribution to GDP is already counted in the true consumption and investment totals.

saving and households benefit as owners of these enterprises. Or they can be public consumption loans. The public authorities can borrow to smooth public consumption directly, or to smooth public consumption indirectly by financing public sector capital formation.⁴ If some (but not all) private agents face binding liquidity constraints at some point in their life cycle, the public authorities can also can borrow to smooth private consumption indirectly by using public debt issuance and retirement together with taxation and transfer payments, to smooth private consumption across the lifetime of one or more generations or to redistribute resources (and thus consumption) across generations. Public sector deficits and surpluses can be used to smooth the excess burden of distortionary taxes over time, thus minimizing the aggregate social welfare loss inevitably associated with the need to use distortionary taxes: few governments attempt to finance wars with a balanced budget.

The issuance of financial claims permits both consumption smoothing over time and across states of nature. I will focus on trading over time, although risk trading is often inextricably tied up with intertemporal trade.

2. Sustainability: the feasibility of the fiscal-financial-monetary programme of the state.

It will come as no surprise that I will not attempt to develop here a general framework for optimal dynamic fiscal policy – spending, taxation, borrowing and monetary issuance over time. Optimality is beyond me. The subject matter I will address is feasibility – a logical prerequisite for optimality. I will, from time to time, make reference to properties or attributes of the fiscal-financial-monetary-programme of the state that I consider to be sensible or desirable, but that is as close to optimality as I shall get in this lecture.

Consider first, consumption smoothing over time. Government borrowing permits government saving to be uncoupled from government investment. Of course, government

⁴ I have often wondered how the construction of the pyramids was financed. There must be a Ph.D. topic there somewhere.

borrowing, that is, a government's ability to run a financial deficit, requires the existence of other economic agents - the domestic private sector, the foreign private sector, foreign governments or international financial institutions - willing and able to lend, that is, to run a matching financial surplus. A basic premise of finance theory is that there is no Santa Claus. Lenders lend because they expect to be compensated for giving up, for a while, the command over the resources they part with.

The fiscal-financial-monetary programme of the state is sustainable if the implementation of the programme does not threaten the solvency of the state, now or in the future.⁵ The definition of (in)solvency of the state is, in principle, no different from that of the (in)solvency of any other economic agent. It is true that, if we restrict ourselves to natural persons, the state is longer-lived than most private agents, but private institutions with legal personality like firms or charities can have a lifespan exceeding that of natural persons. It is also true that the state has revenue raising instruments that are (or ought to be) unique within a given national jurisdiction. The state can raise taxes and it can declare some of its liabilities to be legal tender. Both these powers are a reflection of the state's unique position as the repository of the legitimate use of coercive power in a society. If one private person tried to tax another one, that is, if he tried to extract a *quid* from the other party without offering in exchange a *pro quo* deemed to be of at least equal value by the other party, it would be considered theft or extortion. If legal tender – generally a monopoly of the state, often issued by its agent the central bank - has been accepted in settlement of a financial obligation, there is a strong presumption that this is the end of the matter – the seller or creditor retains no further claim on the buyer or debtor. The capacity to tax and to issue legal tender makes the

⁵ In an uncertain world, nothing can be taken for granted, and there can be no absolute certainty that the state will not become insolvent. A strict but rather pedantic restatement of the sustainability criterion is therefore that an FFMP is sustainable if the implementation of the programme does not result in an unacceptable risk of insolvency for the state.

state an unusual borrower, but below the surface, it is subject to the same pains and joys of borrowing experienced by private sector borrowers.

2a. What are the right boundaries of the public sector for analysing fiscal sustainability?

In principle, the answer to this question should be clear. We are interested in the solvency of the state, that is, the sovereign – the agent with the power to tax and to declare one or more of its financial liabilities to be legal tender. At the very least, this includes the consolidated general government sector and central bank. It is important that the central bank be included. The central bank may be operationally independent, that is, it may not be an agent of the government of the day in the setting of the short nominal interest rate, it is always an agent of the state. General government includes the central or federal government, state or provincial government and local or municipal government. The question of the inclusion of an economic agent, organisation or entity in a fiscal sustainability analysis arises if the answer to at least one of the two following questions is ‘yes’: (a) is the state ultimately responsible for its debt? and (b) does the state appropriate the profits of the entity and make up its losses? If the answer to at least one of these two questions is affirmative, the income-expenditure and profit and loss accounts and balance sheet of the entity in question must be consolidated with that of the state for the purpose of sustainability analysis. If only one of the boxes is ticked, or if there is uncertainty attached to the answers, judgement enters. The central bank qualifies on both criteria. So do the social security and state pension, health and disability funds.

A further advantage of considering the consolidated general government and central bank is that this ensures that the quasi-fiscal deficit of the central bank is fully included in the fiscal sustainability analysis. The central bank has many instruments at its disposal, including multiple exchange rates, reserve requirements, subsidised borrowing rates; *de facto* grants to state enterprises or private enterprises that, for a while, masquerade *de jure* as loans. If a

'loan' is economically equivalent to a grant or a subsidy, the formal, legal niceties are irrelevant.

It is key that the fiscal sustainability auditor see through off balance sheet items and special purpose vehicles. The public sector has had, and continues to have, too many Enrons of its own. The auditor must see through legal and accounting veils to get to the economic substance underneath. Everything goes in the pot.

2b. What financial instruments should be included in the fiscal sustainability assessment?

The simple answer is: all of them, that is, all contractual liabilities and assets of the state must be included. This includes, on the liability side, such familiar instruments as Treasury Bills or Bonds and other foreign currency-denominated, domestic currency-denominated or index-linked instruments. These liabilities should be valued at their 'default-risk free values'. For variable rate government bonds (with a fixed notional value), that would simply be the face value of the bond. For fixed-interest longer maturity bonds whose default risk-free value can vary as the level of current and anticipated future risk-free interest rates varies, an estimate must be made if either there is no readily available, deep and liquid secondary market on which the bond is traded, or if the price in such a market reflects the presence of default risk. For concessional debt, the present discounted value of all future debt service (interest and repayment of principal) should be included. This can be significantly lower than the notional or face value of the debt.

The net debt figure also includes a fair valuation of any exchange-traded, OTC or non-traded contingent contractual liabilities the government may have. The words 'off balance sheet' (of 'off budget') are irrelevant. For fiscal sustainability, everything is 'on balance sheet' and 'on budget'. Of course, the valuation of non-market-traded contingent claims is often non straightforward. How does one value such commitments as the government's

support for a deposit insurance scheme, government guarantees and other types of government support, or different types of ‘comfort’ offered to domestic or foreign investors?

On the asset side, a comprehensive fiscal sustainability analysis includes the valuation of state owned assets such as natural resources, infrastructure and other state property. These assets should be ‘marked to market’, and where no market exists, they should be valued by the estimated present discounted value of the future net cash flows they will generate for the government. The historical cost of these assets is irrelevant in this valuation, as is the valuation of the non-cash social benefits these state assets may produce. It follows that, from the point of view of fiscal sustainability, some state ‘assets’ must be assigned a negative value. A public road or railway system that does not cover even its running cost (let alone its total cost) would be an example. They may be useful and their social benefits may well far exceed their costs, but for sustainability only pecuniary returns and outlays matter.

In a study of fiscal sustainability in 10 transition economies (Buiters (1998)), I adopted the convention to treat all loans from the central bank to the state enterprise and private sector as grants. The stock of such loans was therefore valued at zero: there would be no collection of interest due nor any recovery of principal. I believe this was a wise valuation, and the subsequent (non)performance of these loans bore this out.

Current and future income and expenditure streams that are non-contractual will be considered in Section 2c.

2c. What is the meaning of solvency and sustainability when the state and its financial assets and liabilities live on, even though governments may come and go?

If the world were known to come to an end at some fixed future date, solvency for the state would be easy to define. When the last trumpet sounds, the state cannot leave any net debt. It is less straightforward to define solvency when there is no obvious terminal date. Things are further complicated by the fact that solvency assessments require one to reduce

current and future expenditures and revenues to a common denominator. When markets are incomplete, as they are, pricing uncertain future payments and receipts requires a lot of hand waving. When there is no finite terminal date, solvency is conventionally defined by the requirement that the state cannot engage in Ponzi finance. Ponzi finance means always borrowing at least as much as is required to service the debt (interest plus repayment of principal). The growth rate of the debt will be at least as high as the (average effective) interest rate on the debt. The commonly accepted concept of solvency rules out such everlasting pyramid schemes. The finite-horizon solvency criterion requires the terminal debt to be non-positive. The infinite-horizon concept of solvency requires that the present discounted value of the terminal debt be non-positive in the limit as the terminal date retreats infinitely far into the future.⁶

Let us begin with a little bit of accounting arithmetic. We distinguish between the contractual obligations and claims of the state and its non-contractual or discretionary expenditures and revenues. Contractual obligations include the net domestic currency-denominated non-monetary debt of the consolidated general government and central bank, B , its net foreign currency-denominated debt, B^* (which is net of the official foreign exchange reserves held by the central bank) and the monetary liabilities of the central bank, the stock of base money, M . Let the nominal exchange rate (the spot price of foreign currency in terms of domestic currency) be S . Domestic currency debt has a nominal interest rate i and foreign currency a nominal interest rate i^* . Base money has a zero nominal interest rate. Non-contractual or discretionary expenditures as a share of GDP are denoted g and ρ denotes non-contractual revenues as a share of GDP. Real GDP is Y and P is the GDP deflator – the general price level. The difference operator Δ is defined by $\Delta x = x - x(-1)$. The

⁶ This definition of solvency is not as self-evident as it may seem. Buiter and Kletzer (1998) show the kind of limitations that must be imposed on the government's ability to tax for the conventional solvency constraint in an infinite-horizon economy to be rationalisable from acceptable primitive assumptions.

budget deficit of the consolidated general government and central bank, as a fraction of GDP, is given by:

$$\frac{\Delta M + \Delta B + E\Delta B^*}{PY} \equiv g - \rho + i \frac{B}{PY} + i^* \frac{EB^*}{PY} \quad (1)$$

The primary surplus of the state, as a fraction of GDP, denoted σ , is the excess of non-interest revenues over non-interest expenditures (as a fraction of GDP), that is, $\sigma \equiv \rho - g$. Let r be the domestic real interest rate, π the domestic rate of inflation, n the growth rate of real GDP, ε the proportional rate of depreciation of the nominal exchange rate. Total (domestic and foreign currency-denominated) debt as a share of GDP is b , base money issuance as a share of GDP is μ and the share of foreign-currency non-monetary public debt in total non-monetary public debt is denoted α .⁷

It follows that

$$\Delta b \equiv -(\sigma + \mu + [i - (i^* + \varepsilon)]\alpha b) + (r - n)b \quad (2)$$

I will define the augmented primary surplus, $\hat{\sigma}$ as the conventional primary surplus, σ , plus monetary base issuance as a fraction of GDP, $\mu \equiv \frac{\Delta M}{PY}$ (which I will refer to as seigniorage) plus the stock of net foreign currency-denominated debt (as a share of GDP), αb , times the deviation of the domestic interest rate from the level it would be at if uncovered interest parity (UIP) applied, $i - (i^* + \varepsilon)$, that is,

$$\hat{\sigma} = \sigma + \mu + [i - (i^* + \varepsilon)]\alpha b \quad (3)$$

The change in the public debt to GDP ratio can therefore be written as

$$\Delta b \equiv -\hat{\sigma} + (r - n)b \quad (4)$$

⁷ $\pi = \frac{\Delta P}{P}$; $n = \frac{\Delta Y}{Y}$; $\varepsilon = \frac{\Delta E}{E}$; $b = \frac{B + EB^*}{PY}$; $\mu = \frac{\Delta M}{PY}$; $\alpha = \frac{EB^*}{PYb}$. The formulae are exact only in continuous time. The correct discrete time analogues are slightly messier. The proper discrete time analogues should be used, however, whenever π, ε, n, i or i^* are large, as the continuous time approximation becomes very bad.

Note again the net public debt is the net non-monetary public debt of the consolidated general government and central bank. Government debt held by the central bank is netted out: it is irrelevant from the point of view of fiscal sustainability analysis, as it is a claim of one agency of the state on another agency of the state. Likewise, state revenues do not include any payments made by the central bank to the government or any payments or capital transfers going the other way when, say, the government recapitalises the central bank.

Consider (3) and (4). From the point of view of the state, seigniorage is like other current revenue, like taxes. Base money is viewed as a financial asset by the private sector, but since base money is irredeemable, it is not, in any meaningful sense a liability of the state: it creates no future debt servicing obligations: it bears a zero nominal interest rate and the principal never has to be repaid.

In equation (4) the domestic real interest rate, r , is imputed to the entire public debt, regardless of whether that debt is denominated in hard currency or in local currency. The term $(r - n)b$ will therefore overstate (understate) the true real interest burden on the state if the domestic nominal interest rate exceeds its UIP level, given by the foreign interest rate plus the expected proportional rate of depreciation of the domestic currency. The term $[i - (i^* + \varepsilon)]ab$ corrects for this. It is often the case in developing countries and emerging markets, that the domestic interest rate is much higher than its UIP level. In that case, switching from domestic currency denominated debt to hard currency debt would be attractive to the state as a borrower. However, for many developing countries and emerging markets, the interest rate on its outstanding stock of foreign currency debt will often be a highly concessional one. The government will be rationed at that rate, that is, it will not be able to borrow more at anything like that rate, which therefore does not represent (and understates) the true opportunity cost of foreign borrowing.

It follows from (4) that the public debt–GDP ratio will be constant when

$$\hat{\sigma} = (r - n)b \quad (5)$$

If the real interest rate is, say, 8 percent, the real growth rate 5 percent and the debt to GDP ratio 50 percent, then an augmented primary surplus of 2.5 percent of GDP will stabilise the debt GDP ratio.

The solvency constraint that the present discounted value of the terminal government debt goes to zero as the terminal date recedes into the future implies that the present discounted value of current and future augmented primary surpluses be at least as large as the (default-free or notional) value of the state's outstanding debt. This intertemporal budget constraint of the state can be rewritten in a form that is very similar to the condition for a constant public debt to GDP ratio, given in (5). It is

$$\hat{\sigma}^p \geq (r^p - n^p)b \quad (6)$$

Here $\hat{\sigma}^p$ is the permanent (augmented) primary surplus as a fraction of GDP, r^p is the permanent or long-run domestic real interest rate and n^p is the permanent or long-run growth rate of real GDP. 'Permanent' is used in the sense of 'permanent income', that is, it means, roughly, 'average (long-run) expected'.⁸

Equation (6) tells us that any given debt to GDP ratio can be sustained with a lower permanent surplus to GDP ratio, the lower the long-run real interest rate and the higher the long-run real growth rate. Conversely, for any given permanent surplus to GDP ratio, a higher debt to GDP ratio can be sustained the lower the long-run real interest rate and the higher the long-run real growth rate.

Note once more that these accounts must be comprehensive and transparent.

⁸ Strictly speaking $\hat{\sigma}^p(t) \equiv \left(\int_t^\infty e^{-\int_t^v [r(u)-n(u)]du} dv \right)^{-1} \int_t^\infty e^{-\int_t^v [r(u)-n(u)]du} \hat{\sigma}(v) dv$ and

$$r^p - n^p \equiv \left(\int_t^\infty e^{-\int_t^v [r(u)-n(u)]du} dv \right)^{-1}.$$

2d. What is a safe level of the debt to GDP ratio?

While something less than rocket science must be used to try to answer this question, the key point for a developing nation or early emerging market economy is that the maximum public debt burden that can be carried safely is likely to be a much lower figure than one might think by contemplating the debt burdens carried by developed nations. Italy, Belgium and Greece had (gross) public debt-to-annual GDP ratios near and often above 100 percent for the past 10 years.⁹ The EU has a ceiling (more often violated than not) of 60 percent for the general government gross debt to GDP ratio, for countries wishing to join the EMU. The only known rationalisation for this 60 percent number is the fact that this was the historical average figure for the EU at the time the debt ceiling was promulgated in the Maastricht Treaty (in 1992). Why the criterion involves gross rather than net debt remains a mystery.

In a recent paper, Reinhart, Rogoff and Savastano (2003) argue that developing countries and emerging markets with a poor track record as borrowers, that is, with a history of default, have but a very limited capacity for carrying public debt, internal or external. For external debt, they calculate that the “safe” threshold for highly debt intolerant emerging markets may be as low as 15 to 20 percent of GDP. While such countries may be able to borrow more (even significantly more) at times, when the markets suffer one of their episodes of collective euphoria and selective amnesia, the risk of a loss of confidence, a sudden sharp reversal in capital inflows, a debt rollover crisis and a rollover, standstill, moratorium or default by any other name, is uncomfortably high. Fear of default will raise sovereign risk premia and with it the risk of actual default.

A government’s capacity to carry debt is determined by the assessment of existing and potential lenders of that government’s capacity and willingness to generate future primary

⁹ These figures refer to gross General Government debt, not to the net debt of the consolidated general government and central bank, but the difference is not very large for the countries in question.

budget surpluses, $\hat{\sigma}^p$, and by the prevailing views about future real growth potential, n^p , and the path of future real interest rates summarised in r^p . Generating primary surpluses is painful and politically challenging because it involves some combination of public spending cuts, tax increases and increased monetary financing.

Lest anyone believes that increased recourse to the printing presses is the obvious way out of what would be a painful dilemma, let me point out that the extraction of additional real resources through increased growth in the nominal money stock will be subject to rapidly diminishing real revenue returns and rapidly increasing inflationary costs. Unanticipated increases in inflation can be used in the short term to make large real resource transfers to the state, especially if there is domestic currency denominated fixed rate debt outstanding, but once the surprise element is gone, the monetary authorities are fighting against the seigniorage Laffer curve: higher monetary growth leads to higher expected inflation, which leads to currency substitution out of domestic money into domestic inflation-proof assets or foreign currency-denominated assets. This undermines and ultimately destroys the inflation tax base (see Buiter (1983, 1985, 1990, 1998) and Buiter and Patel (1992)). It is a fight the authorities cannot win.

For the state to be able to borrow a significant amount, at home or abroad, it must be capable of credible commitment vis-à-vis its current and potential future creditors. A government that borrows must not only be able to commit itself to service the debt; it has to be able to commit its successors also. Unless the obligation to service the debt is assumed ('inherited') automatically by the successor government (regardless of whether this government is politically friendly or hostile towards its predecessor, and regardless of the modalities of the succession), there will be few willing lenders forthcoming. In many developing countries and emerging markets, such credible commitments cannot yet be made, because the institutions of the state are too weak. Indeed, as Reinhart, Rogoff and Savastano

(2003) speculate, a government's default may further weaken domestic institutions, making subsequent defaults more likely, and so on, in a vicious cycle of serial default. The likelihood of such a vicious cycle developing is enhanced by a factor not under the control of the borrowing government: the notable cycles in the cost and availability of foreign capital to emerging markets and developing countries, amplified by bouts of alternating euphoria and depression among the lenders.

For many developing countries and emerging markets without a long track record of successful debt servicing and fiscal and monetary restraint, borrowing is risky, even dangerous. There is no doubt in my view that time and again, and right into this new century, sovereign governments have been persuaded, seduced and sometimes almost cajoled to borrow too much. The persuaders are to be found in the private sector but also among the international financial institutions, including the multilateral development banks.

In the private financial markets, the half-life of the collective memory of a major sovereign debt default appears to be no more than three years. Five years after a major default on its GKO debt, the Russian sovereign obtains an investment grade rating! I would not be hugely surprised (although still somewhat surprised) if, despite finding itself, in 2002, at the debtor end of the largest ever sovereign default (and despite a long history of prior sovereign defaults), the Argentine sovereign were to regain an investment grade rating before the end of the decade. It is true that, from the point of view of the ability to pay, the best credit risk is a borrower who has just defaulted on all his debt. Of course, the default may convey information about unobservable characteristics of the borrower that determine his willingness to pay. One inference from the study of Reinhart, Rogoff and Savastano (2003) and from the more extensive IMF (2003) study that covers similar ground, is that past default is a very useful predictor of future default. This is consistent with the hypothesis that markets don't learn - ever.

As regards official lending to developing countries and emerging markets, the bureaucratic imperative - the organisational instinct for self-preservation and, where possible, self-aggrandisement - can drive private and national or international public bureaucracies to pursue size as a primary objective. When the institutionally relevant measure of size is the volume of new lending or the size of the loan portfolio, strong incentives are created for excessive lending, with the ordinary citizens of the borrowing countries and the shareholders of the lending institutions (that is, in the case of public lending institutions, the tax payers of the countries that provided their capital) footing the bill when things go pear-shaped.

The vast majority of the twenty-seven heavily indebted poor countries (HIPC) that have reached the decision point of the Initiative (out of 38 countries that potentially qualify for assistance under the HIPC) owe most of their external debt to bilateral and multilateral official creditors. None of the EBRD's countries of operation are among these HIPC Initiative eligible countries. However, each of the five EBRD countries of operation for whom poverty and high external debt pose especially acute problems and policy dilemmas, (the CIS countries Armenia, Georgia, Kyrgyz Republic, Moldova and Tajikistan) owes more than half its external debt to official bilateral and multilateral creditors (see Buiter and Lago (2001)).

When debt burdens become unsustainable, or sustainable only at an intolerable human cost, and when there have been no major adverse exogenous shocks that unexpectedly impaired the borrowers' ability to service the debt, it is clear that either both the borrower and the lenders have made mistakes, or that at least one side of the debt bargain has acted dishonestly. A resolution that is fair and provides the right incentives to prevent a recurrence of these debt sustainability problems should impose a cost on both the borrower and the lenders. Regrettably, the borrowing governments and the ruling elites that support them, are often able to pass their share of the cost on to the disenfranchised and often poor and

defenceless citizens of their countries. Those that were on the lending side of the bad loans have often moved on to pastures new and greener by the time the chickens come home to roost.

2e. What happens when fiscal sustainability is not achieved? Why do sovereign borrowers ever service their debt?

When *ex-ante* the government cannot satisfy its solvency constraint and intertemporal budget constraint one or more of the following will happen. (1) Realised public spending will be lower than planned public spending; (2) realised tax revenues will be higher than originally planned; (3) inflation will turn out to be higher than expected because the government tries to appropriate more resources through the anticipated and unanticipated inflation taxes; or (4) the public debt (domestic and/or external) will be defaulted on, in part or comprehensively.

The first three options are clearly painful and politically unpopular for the borrowing government. What is the cost of sovereign default to the borrower?

One reason why a borrower, private or sovereign, might service his debt on the originally agreed contractual terms, is that he believes it is the right thing to do. Paying your debts, like telling the truth, can be viewed not instrumentally as something that may or may not be individually rational, but as something intrinsically valuable – not a tactical or even a strategic option, but something worth doing for its own sake. I believe that societies and cultures where such norms predominate and prevail are likely to be both more pleasant and more prosperous than those where the citizens and the state take a purely instrumental view of honesty and commitment.

Back in the economic textbook world of a-moral, selfish economic man and woman, borrowers honour their debt obligations because, if and when it pays to do so. In countries with a well-functioning judiciary and efficient law enforcement, private parties often choose

to fulfil their debt obligations because of credible ‘third party’ enforcement of debt contracts. The situation is less clear for sovereign borrowers. While governments explicitly forego key sovereign immunities when they enter into external debt contracts, taking a government to court is a costly and lengthy process. The kind of gun boat diplomacy that used to be a popular mechanism for sovereign debt collection by imperial powers on behalf of their creditor citizens, is no longer fashionable. Other sanctions against a defaulting government include the risk of attachment of the government’s assets located in foreign jurisdictions, and the need to engage in costly cash-in-advance international trading relationships because all trade financing dries up.

One reason a government may opt for servicing and paying down a debt today is the expectation that it may have to borrow again in the future, because desired public spending and domestic revenue bases are not well-aligned over time. Default means at least temporary loss of access to new external financial resources. Governments of export-dependent countries facing highly variable terms of trade will therefore be able to borrow more and on better terms than governments for whom future access to external finance is less valuable. Such self-enforcing, time-consistent or sub game-perfect debt contracts are undoubtedly part of the explanation of why sovereign debt gets serviced at all.

One cost of sovereign default, especially default which is viewed as ‘discretionary’ and ‘voluntary’ rather than an unfortunate but unavoidable consequence of bad luck, is the damage it does to respect for the law, to the ‘sanctity’ of contracts, and to trust among private agents and between private agents and the state. If the state, the ultimate arbiter and enforcer of contracts, can choose to play fast and loose with its own contractual obligations, why should ordinary citizens not try the same? Of course, such considerations are unlikely to weigh heavily with a government that chooses to default when alternative options remain

available, but it can inform our understanding of the wider economic and political pathologies that are often encountered in countries that have a history of public debt default.

2f. When should a borrower run the required primary surpluses?

The solvency criterion requires that the outstanding debt be no larger than the present discounted value of current and future primary (augmented) surpluses. It is silent about when in the future any future primary surpluses are to be run. When there is no terminal date (or even if there is one but it is far in the future), there is an obvious temptation for a debtor to put off the day of reckoning as long as possible. Even after 200 years of deficits, our debtor can always argue that he has all of the rest of eternity to run the necessary primary surpluses. Such a debt service strategy would lack credibility. Both creditors and debtors know that talk is cheap, that actions speak louder than words and that seeing is believing. Governments with either a very limited or a poor track record of debt servicing will be required to demonstrate early on the capability and willingness to service their debt by running primary surpluses.

The more recent the arrival of the government in the global capital markets or the more recent its latest encounter with problems servicing its debt, the earlier evidence of debt servicing ability and willingness will have to be provided to the markets, through the early generation of significant primary surpluses. Many developing countries and emerging market economies are in such a position. It inevitably reduces the value to the country of access to the capital markets.

2g. Domestic debt and external debt.

There is, in principle, a wide range of alternative public debt instruments available to governments. Debt can be denominated in domestic currency or in foreign currency, or it can be index-linked to some domestic price index. It can be fixed rate or variable rate. It can

come in different maturities. It includes bank loans and OTC or exchange-traded securities. Bonds may have collective action clauses attached to them. Any of these instruments can be held by domestic residents or by foreign residents or off-shore creditors.

Very few developing countries and emerging markets can borrow abroad using financial instruments denominated in their own domestic currency. The situation is different for the governments of many of the industrial countries. The world's largest international debtor government, that of the USA, borrows almost exclusively in US dollars. The world's creditors clearly trust Alan Greenspan and his eventual successors not to engage in any high-inflation experiments. The 'original sin' that prevents emerging market and developing countries from selling domestic currency debt to foreign creditors is a long history of unanticipated (hyper) inflation and its devastating effect on the real returns earned by the holders of such debt. Many of today's advanced industrial countries were a part of this history during past centuries. As regards today's emerging market economies, the markets' collective memory is often not discriminating enough to distinguish between countries with a penchant for inflationary financing and bastions of monetary rectitude; 'original sin' taints them all. This situation will change only if and when sustained low and stable inflation rates have become a familiar and natural part of the economic landscape also in the developing world and in emerging market economies.

When domestic and international financial markets are segmented, through capital controls and other man-made obstacles to cross-border capital flows, there are frequent and often quite sustained spells during which domestic real interest rates (real interest rates on domestic currency-denominated public debt held by residents) are significantly higher than on foreign currency-denominated external debt. This is especially likely to be the case if the domestic economy is booming, say because of a natural resource boom in a natural-resource-rich country or because of the introduction and implementation a set of business-friendly

reforms. If the government is not rationed in the external capital market, this creates strong incentives for borrowing abroad rather than at home, and even for retiring outstanding domestic debt and refinancing with a Eurobond issue.

Such a decision can turn out to be an expensive mistake. Servicing domestic public debt involves only an internal transfer, that is, a transfer of resources from the domestic private sector to the government, through higher taxes (including higher seigniorage) or lower public spending. Servicing external public debt involves a dual or double transfer: an internal resource transfer from the domestic private sector to the government (through the augmented primary surplus of the government) and an external resource transfer from the domestic economy to the rest of the world (through the nation's external primary surplus (the current account surplus exclusive of interest payments)). The external transfer often requires a worsening of the external terms of trade and a depreciation of the real exchange rate. For long periods, the external transfer may take place smoothly and in orderly fashion. If, however, there is a sudden loss of confidence in the domestic currency or in the fiscal probity of the government, there can be a run on the currency, a run on the public debt (that is, a refusal to roll over maturing debt and to provide additional external funds) and, often, a run on the domestic banking system. Real interest rates on both foreign currency- and domestic currency-denominated debt issued by domestic residents shoot up, and even at these much higher rates, very little refinancing or new lending takes place. Credit is rationed. A sharp depreciation of the nominal and real exchange rate is the result and the real burden of the external debt can more than double in a matter of days as ex-post real interest rates on foreign currency debt explode when the exchange rate collapses. Central banks can act as lender of last resort for domestic currency debt but not for foreign currency debt. This is the story of Argentina in 2002/2003, and the story of countless emerging markets before it.

Vulnerability to a sudden loss of confidence and reversal of capital inflows is greater when the maturity of the debt is short and when there is a bunching of debt repayments in a short period of time. This can become a natural focal point for a speculative attack. Crises and default can, however, occur even when the debt is optimally structured along all relevant dimensions.

2h. Asset sales, including privatizations

Asset sales (including *de facto* partial privatisations such as PSAs (Production Sharing Agreements) only improve the financial sustainability of the government if the proceeds from the sale exceed the present discounted value of the future cash income these assets would have produced for the government under continued public ownership (the assets' continuation value in the public sector). If the sale price equals the continuation value, asset sales are equivalent to borrowing; they neither add to nor subtract from the government's fiscal sustainability. Of course, if the government encounters temporarily unfavourable borrowing conditions in the markets, such short-term liquidity or debt roll-over constraints can be relaxed through asset sales.

As a rule, privatisation should be done for efficiency reasons rather than for deficit financing reasons. The fact that the sales price exceeds the continuation value in the public sector of a public sector asset may, but need not, reflect greater efficiency in the management of the asset in the private sector. It could also, wholly or in part, reflect a more intensive exploitation of monopoly or monopsony power by the new owners of the privatised assets.

3. What would a sensible state deficit rule look like?

As an example of an intuitive fiscal-financial rule that (a) guarantees fiscal sustainability and (b) makes sense under a number of practically relevant contingencies, I will,

immodestly, offer the Permanent Balance rule proposed by Clemens Grafe and myself (Buiter and Grafe (2003) and Buiter (2003)).

Total current revenues as a share of GDP, ρ , are the sum of taxes τ and other revenues, κ , which includes any capital income the state may receive, seigniorage revenue, μ , and the ‘deviations from UIP correction term’ $[i - (i^* + \varepsilon)]\alpha b$, all as shares of GDP. Government spending g is the sum of consumption spending g^c , gross capital formation, g^I , and transfers and subsidies, g^T , all as shares of GDP.

The permanent balance rule is a ‘tax-smoothing rule’ in the spirit of Barro (1979): tax revenues are planned to be a constant share of GDP, the permanent tax rate or share. This share is the lowest constant share of tax revenues in GDP that would, in the absence of news and surprises, ensure the long-run solvency of the government. It is given by sum of (1) the permanent share of non-interest public spending in GDP (roughly the long-run average share of non-interest public spending in GDP, looking forward) and (2) the permanent government interest bill, as a share of GDP, calculated as the product of the debt-to-GDP ratio and the excess of the long-run real interest rate over the long-run growth rate of real GDP. It is given in (7)

$$\tau \geq \tau^p \equiv g^p - \kappa^p + (r^p - n^p)b \quad (7)$$

Under the permanent balance rule, the public sector deficit, as a share of GDP, d , behaves as follows:

$$d \leq (n + \pi)b + g - g^p + \kappa^p - \kappa + \left[(r - r^p) - (n - n^p) \right] b \quad (8)$$

The permanent balance rule therefore implies that the permissible general government budget deficit as a fraction of GDP is the sum of four components. The first is the reduction in the debt-to-GDP ratio due to nominal GDP growth (inflation and real GDP growth), $(n + \pi)b$. For example, if annual real GDP growth and annual inflation are both 2.5 percent

and the debt-to-annual GDP ratio is 40 percent, this component would permit a deficit of no more than 2 percent of GDP. The second component is the excess of the actual share of government spending in GDP over its permanent share, $g - g^p$. The third is the excess of permanent non-tax revenue over current non-tax revenue (both as shares of GDP), $\kappa^p - \kappa$. The fourth is the excess of the actual (inflation-and-growth-corrected) interest bill over the permanent interest bill (which is itself (long-run) inflation- and – (long-run) growth-corrected).

The permanent balance rule has some key attractive properties. It ensures the solvency of the state and the sustainability of its fiscal-financial-monetary programme. It is ‘inflation and real growth corrected’, that is, the permissible deficit allows for the effect of inflation and real growth on the capacity of the economy to carry debt; it does not confuse issues having to do with deficit financing (intertemporal priorities) with issues having to do with the size of the public sector; it avoids pro-cyclical behaviour of the fiscal policy instruments; it allows for important differences in economic structure and initial conditions; it does not incorporate the ‘golden rule’ fallacy that borrowing for public sector capital formation is inherently more financially sound and safe than borrowing to finance public sector consumption or transfer payments. Borrowing to finance public sector investment is permitted, by the rule, if and to the extent that current public sector investment exceeds permanent (long-run average) public sector investment (as shares of GDP). But the same holds for public consumption and transfer payments. Any excess of current public spending over permanent public spending (all as shares of GDP) can be financed by borrowing, regardless of whether it is public consumption spending, public sector transfer payments or public sector investment. Any shortfall of current spending relative to permanent spending should be reflected in repayment of debt.

4. Conclusion

Without fiscal sustainability, no economic development strategy can succeed. Unfortunately, in many emerging markets and developing countries, weak political institutions and incompetent and corrupt public administrations impose very strict limits on the amount of public debt, internal and external, that can be carried. In principle, tight constraints on a government's borrowing and debt capacity need not prevent it from reaping the benefits of consumption smoothing. A government could manage an on-average positive net financial asset position instead of an on-average positive net financial liability position. A government can smooth consumption over time by managing the liability side of its financial balance sheet: incurring debt when spending is unusually and temporarily high or when the tax base is unusually and temporarily depressed, and servicing and paying down the debt when spending is unusually low and the revenue base unusually strong. Or it can smooth consumption over time by managing the asset side of its financial balance sheet: by building up its stock of financial assets during unusually good times and running it down during unusually lean times. It is easier to be a credible manager of your own assets than of your own liabilities. Some of the natural resource-rich nations faced with both sharp high frequency fluctuations in their external terms of trade and the long-term problem of managing an exhaustible resource, have created national oil funds other stabilisation funds to smooth public and private consumption over commodity price cycles and across generations.

For the poorest countries, the challenge of first building up a sufficiently large stock of public sector assets is likely to prove too much. Countries that could, in principle, smooth consumption through the asset side of the public sector balance sheet rather than through the liability side, may find that having a sizeable stock of financial assets under public control may create irresistible pressures for wasteful expenditure, graft and corruption; an oil fund or gas fund may present a prime target for rent seekers and other predators. With weak domestic

political and judiciary institutions and a lack of effective accountability of the leadership to its citizens, a country's access to the global capital markets will remain highly restricted, and domestic markets for public debt will remain underdeveloped.

Once the body politic and the institutions of the state have become strong enough to permit the sovereign to enter into credible commitments over time, a nation, through its government, can experience the true joys and pains of public debt within a set of rules that ensures sustainability. The kind of 'Permanent Balance' rule I have sketched in Section 3 provides a useful benchmark.

Unless a government can stick to the rules of sustainable budget finance when it involves paying down debt and running (primary) surpluses, it should not venture anywhere near the internal or external debt markets. Many developing countries and even some highly touted emerging market economies have economic institutions that are so weak and political institutions and regimes that are so corrupt and oppressive, that sovereign borrowing is unlikely to increase and may well diminish the well-being of the vast majority of the citizens. This has not stopped their sovereigns from borrowing when they could; nor has it stopped the private and public lending community from extending the hand of finance. This combination of market failure and political failure should give us all pause for thought.

References

Allais, Maurice (1947), *Economie et Intérêt*, Paris, Imprimerie Nationale.

Barro, Robert J. (1979), "On the Determination of the Public Debt," *Journal of Political Economy*, October.

Buiter, Willem H. (1983), "Measurement of the Public Sector Deficit and its Implications for Policy Evaluation and Design", *International Monetary Fund Staff Papers*, 30, June 1983, pp. 306-49.

Buiter, Willem H. (1985), "A Guide to Public Debt and Deficits", *Economic Policy*, 1, November, pp. 13-79.

Buiter, Willem H. (1990), "Some Thoughts on the Role of Fiscal Policy in Stabilization and Structural Adjustment in Developing Countries", in W.H. Buiter, *Principles of Budgetary and Financial Policy*, MIT Press, pp. 407-448.

Buiter, Willem H. (1998), "Aspects of Fiscal Performance in Some Transition Economies under Fund-Supported Programs", Chapter 15 in Gary Saxonhouse and T.N. Srinivasan eds. *Development, Duality, and the International Economic Regime: Essays in Honor of Gustav Ranis*, University of Michigan Press, Ann Arbor, Michigan, 1998, pp. 398-451.

Buiter, Willem H. (2003), "'Ten Commandments for a Fiscal Rule in the E(M)U", *Oxford Review of Economic Policy*, Vol. 19, No. 1, Spring 2003, pp. 84-99.

Buiter, Willem H. and Clemens Grafe (2003), "Reforming EMU's fiscal policy rules; some suggestions for enhancing fiscal sustainability and macroeconomic stability in an enlarged European Union", in Marco Buti ed. *Monetary and Fiscal Policies in EMU: Interactions and Coordination*, Cambridge University Press, 2003, pp. 92-145.

Buiter, Willem H. and Ricardo Lago (2001), "Debt in Transition Economies: Where is it Heading, What can be Done About it?", *Revue D'Économie Financière, Special Issue, Ten Years of Transition in Eastern European Countries, Achievements and Challenges*, 2001, pp. 191-213.

Buiter, Willem H. and Urjit Patel (1992), "Debt, deficits and inflation: an application to the public finances of India", *Journal of Public Economics*, 47, 1992, pp. 171-205; also in Amaresh Bagchi and Nicholas Stern eds. *Tax Policy and Planning in Developing Countries*, pp. 94-131, Oxford University Press, 1994.

IMF (2003), "Public Debt In Emerging Markets: Is it Too High?", Chapter III, *World Economic Outlook 2003*, pp. 49-88.

Reinhart, Carmen M., Kenneth S. Rogoff and Miguel A. Savastano (2003), "Debt Intolerance", NBER Working Paper No. 9908, August.

Samuelson, Paul A. (1958), "An Exact Consumption-Loan Model of Interest with or without the Social Contrivance of Money", *Journal of Political Economy* 66, pp. 467-482.