

Why Economists (and Economies) Should Love Islamic Finance

Willem H. Buiter and Ebrahim Rahbari

Willem Buiter CBE, FBA, is Global Chief Economist of Citigroup since January 2010. He has a BA from Cambridge and a Ph.D. from Yale. He has held academic appointments at Princeton; the University of Bristol; the LSE; Yale; and Cambridge. He is an Adjunct Senior Fellow at the Council on Foreign Relations and Senior Research Fellow (part-time) at Columbia University's School of International and Public Affairs. He has published on macroeconomics, monetary and exchange rate management, financial markets and institutions, fiscal policy, social security reform, economic development, emerging markets and transition economics. He was a member of the Monetary Policy Committee of the Bank of England from 1997 till 2000 and Chief Economist and Special Counselor to the President at the EBRD from 2000 till 2005. He is a frequent contributor to the public policy debate and an avid blogger.

E-Mail: whb1002@gmail.com

Ebrahim Rahbari is a Director in the European and Global Economics Teams of Citi Research in London. Ebrahim mostly focuses on economic developments in the Eurozone, including the ECB, other policy issues and general economic developments, is Citi's lead economist for Germany and was Citi's lead economist for Spain in 2012. In addition, Ebrahim works closely with Citi's Chief Economist Willem Buiter on global economic developments, themes and trends, including trends in debt and deleveraging, monetary policy, global investment and the longer-term growth prospects of world output and trade. Ebrahim holds a Master's degree and Ph.D. in Economics from London Business School and a BA (Hons.) in Economics and Management from Oxford University (Balliol College).

E-Mail: ebrahim.rahbari@citi.com

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1. Introduction

The world has too much debt and too little equity.⁽¹⁾ This circumstance cost it dearly; glaringly during the great financial crisis (GFC) between late 2007 and 2010 and the European sovereign debt and banking crises that started in 2010. The prevalence of debt financing and the decades over which debt, both public and private, increased in nominal terms, as well as in real terms and relative to some reasonable metric of ability to service debt, such as income (personal, corporate or national), owe much to the fact that debt can be perceived as safe to the owner, while offering leverage to the borrower. The fact that this is a logical impossibility was ignored or willfully concealed by a wide variety of financial intermediaries, governments, regulators, supervisors, analysts as well as many borrowers and lenders. During periods of optimism, confidence and trust, like the Great Moderation from the early 1980s till 2008, rational appraisal of risk went out of the window for many ultimate savers and investors, and financial intermediation fed the fires of excessive risk-taking, through excessive leverage, through badly structured reward contracts and regulatory arbitrage. Of course, the self-interest of all parties involved was, at least in the near-term, fully aligned with such a flattering portrayal of the merits of debt. The academic literature, which stressed debt's main advantage as allowing a 'quiet life' for creditors (i.e., no need for costly, ex-post monitoring of borrowers by risk and return-sharing investors), probably contributed to the relaxed attitude many lenders and analysts took toward the serious risks that

(1) Henceforth, 'debt' will mean the standard or classic debt contract. The borrower promises a repayment that, in any given period, is constant over states. If the borrower does not make the promised repayment, he is in default and the lender can invoke a state of bankruptcy for the borrower that permits the lender to seize all or part of the cash flow accruing to the borrower and/or specific assets pledged by the borrower as collateral. In an equity contract, each participant receives a given share of the cash flow or profits of some underlying project.

excessive debt entails – for those that had entered into debt contracts as well as the rest of society. There may also have been a tendency to confuse the absence of any need for ex-post monitoring of the borrower by investors (except possibly in states where default occurs), with the absence of any need for careful ex-ante monitoring of the creditworthiness of the would-be borrowers. These risks that debt creates rise more than proportionally with the amount of debt taken on by individual borrowers and by the economy as a whole.

Seven years on from the beginnings of the GFC, the world economy continues to be weighed down by debt overhang in many sectors and in many countries. (Part of) the solution is obvious. In our view, the world must rely less on debt and more on equity. Certainly, future contracts should contain a much larger share of risk-sharing arrangements or be actual equity contracts. We also believe that restructuring excessive outstanding debt by equitising it (converting it into equity claims) would be instrumental in removing a major obstacle to the cyclical recovery and sustained growth in many overly indebted countries, especially in Europe. This is where Islamic finance, and the principles that underlie it, can make a major contribution to the stability and prosperity of the world. This includes the principle of sharing of profit and loss, and the prohibition of charging interest, which imply that equity and equity-like financial instruments naturally have a much greater role in Islamic finance than in conventional Western finance. The prohibition of “unfair gains” and of “speculative activity” is harder to define, operationalise and verify, but the many transgressions committed in the run-up to the global financial crisis suggest that these would also be principles that Western finance would be wise to incorporate more prominently in regulation and practice.

In our view, the “equitisation of excessive debt” and a lesser reliance on debt for new external financing is desirable for pretty much all sectors of the economy, even for the household sector and for sovereign debt, where there is no tradition of equitisation. For households, the greater use of Islamic mortgages, whereby resident households and banks become joint owners of the house until it is fully repaid by the resident, would be particularly desirable, given the size of residential mortgage debt in many countries, and the havoc that an overhang of mortgage debt has wreaked on people’s lives, banks, and

taxpayer. Equitisation of public debt could be achieved through the addition of real GDP growth warrants or through the issuance of floating rate debt where the interest rate is some constant plus the growth rate of nominal GDP. This would also bring a desirable measure of risk-sharing to public finances. Of course, the principle of debt equitisation can also be usefully expanded and further developed for those sectors (banks, other financial institutions and non-financial enterprises) for which they are a more familiar instrument.

2. The Classic or Simple Debt Contract

The interest prohibition in Islam (as in traditional Judaism and Christianity) amounts to a rejection of the classic debt contract of conventional finance. A classic one-period debt contract specifies a constant (state-independent) payment by the borrower to the lender in all states of nature where the borrower is able and willing to make the (constant) payment. When the borrower is unable or unwilling to make the state-independent payment to the lender, the borrower is in default and a bankruptcy procedure is initiated that permits the lender to recover some or all of the debt due to him and may be associated with the transfer of control rights over an asset from the borrower to the lender. In a multi-period debt contract, the payments due can vary over time, but in any given period we again have a state-independent (constant) debt service payment in all states of nature in which no default occurs. When default occurs, a bankruptcy process is initiated.⁽²⁾

Of course, in today's financial universe, the definitions of 'default' or trigger points for state-contingent payoffs vary widely and a variety of financial instruments exist that have some debt-like features, but also contain some state-contingent payoffs with a different payoff trigger than bankruptcy (such as convertible debt, mezzanine debt, and many others). For the purpose of this study, we will focus on the classic or simple debt

(2) The variation over time of the debt service payment in a multi-period classic (but no longer simple) debt contract can only be a function of possibly time-varying future one-period interest rates. The interest rate (or coupon payment) on a multi-period debt contract can, therefore, vary over time, as with a variable interest rate long-term debt, where the coupon payment in future periods is a function of some short-term interest rate set in those future periods - a short-term rate that can in turn ultimately be reduced to a function of future non-state-contingent (except for default/bankruptcy) one-period interest rates.

contract (SDC), where there is only one type of state-contingency or default.

2.1 Do Debt and Capital Structure Matter at All?

Capital structure or financial structure is irrelevant for resource allocation and the distribution of income and wealth in a world with a complete set of contingent forward markets (or a world equivalent to that, like the sequence economies studied by Hahn and Arrow). Capital structure is also irrelevant in a (slightly) less esoteric imaginary universe: the Modigliani Miller world. No costly bankruptcy; unrestricted home-made arbitrage (anything the government can do, corporates and households can do and undo; anything corporates can do, households can do and undo; no monopolistically supplied base money exists with unique liquidity properties that cannot be replicated by the private sector; no limited liability for some only; no asymmetric information; no distortionary taxes; there is competitive behaviour by firms and households).

2.2 Why Debt May Make a Lot of Sense in Theory

There are a number of theoretical reasons why an SDC may be a useful instrument to raise funding for an entrepreneur or firm with limited resources. One reason is that the simple debt contract outside of default leaves the entrepreneur with the entire marginal return of the project and, therefore, provides potentially powerful performance incentives (Jensen and Meckling, 1976).

The second, and perhaps the most prominent, theoretical reason why SDCs can be an efficient financial instrument is that they can economize on monitoring costs of investors. The issue of monitoring costs is intrinsically linked to the issue of asymmetric information between entrepreneurs and borrowers. The seminal work in this area is Townsend (1978). In his setup, information is asymmetric, as only the entrepreneur observes the state of the world (the success of his investment project) as a matter of course and provides the investor with a report. The outside investor has to pay a (fixed) monitoring cost to learn the state (in Townsend, 1978, this monitoring cost is deterministic, given a state), which is why this manifestation of asymmetric information is referred to as ‘costly state verification.’ Monitoring here can be thought

of as the time, resource and opportunity cost of observing the actions of the firm, its financial position as well as the environment within which the firm operates. Monitoring costs can indeed be high as effective monitoring may require financial as well as operational expertise. But monitoring costs also include the costs associated with bankruptcy.

Townsend (1978) showed that in such a setting a contract that features constant, state-independent payments from the entrepreneur to the investor and no monitoring in the 'good states' and a state-contingent payoff (equal to the value of the project minus the cost of monitoring) in the 'bad states' is 'optimal', defined as maximising the payoff or utility of the entrepreneur, subject to satisfying a reservation (or participation) constraint for the investor. Such a contract, therefore, has the features of an SDC. The logic for the optimality of the SDC is quite intuitive: the objective is to minimize the number of states where the monitoring cost is incurred. This is achieved by paying out a relatively high amount (equal to the total proceeds from the project) in the 'bad states' where monitoring happens, which means that the fixed payment required to sustain a no-audit state is correspondingly lower – which increases the range of outcomes where no audit is needed.

Even though Townsend (1978) illustrated the logic of SDCs in reducing monitoring costs intuitively and persuasively, the set-up had a number of limitations. In particular, the SDC is not efficient ex-post: in the default region, both entrepreneur and investor could potentially be better off, if they renegotiated in a way that would potentially avoid incurring the monitoring or bankruptcy cost (i.e., the entrepreneur pays the investor the cash flow of the project minus epsilon, where epsilon is smaller than the monitoring cost, and the residual payoff to the entrepreneur is greater than zero). Furthermore, once the probability of monitoring is endogenized (given a particular state), it turns out that the SDC is no longer even optimal or ex-ante efficient, as the optimal contract would feature a positive probability (between 0 and 1) of auditing in the 'default' region. The enormous subsequent literature has clarified the circumstances under which simple debt contracts can be optimal and potentially ex-post efficient and its limitations (including Gale and Hellwig (1985); Williamson (1986), and Krasa and Vilamil (2000)). Given the simplicity of the SDC, it is perhaps not surprising that SDCs in most general set-ups do not achieve the first-best allocation, but in a fairly large

range of cases studied in this literature, they can be at least constrained-efficient or achieve second-best allocations.⁽³⁾

In a world of incomplete markets and incomplete contracts and with hard budget constraints (including credible enforcement of debt contracts), debt can also have a disciplining influence on managers (as agents for the shareholders in one of the corporate principal-agent relationships). When there are hard budget constraints, debt can act as a bonding mechanism because the debtor exerts additional effort to avoid the personal costs of default and bankruptcy. Of course, this only works if the budget constraint is hard. With soft budget constraints – the situation of banks that are bailed out by the taxpayer when their debt threatens to go into default – debt has no incentive-improving and effort-enhancing impact on the agent.

2.3 Debt and (Lack of) Trust

A key assumption underlying the entire asymmetric information literature is that the entrepreneur (borrower) is either unable or unwilling to convey his superior information to the creditor costlessly (or at the lowest possible cost of transmitting the private information). This could occur even if the borrower is always truthful (and is known to the creditor) to be so, if conveying or communicating private information is inherently costly. This reason is not emphasized in the literature. Instead, the debt contract literature, like most of the non-cooperative game theory and contract theory literature, assumes that truth telling is no more than a tactical or strategic option. The borrower will keep his private information private and will lie about the state that has actually occurred, or about his (unobservable to the creditor) efforts or costs, whenever this is in the financial interest of the borrower. The borrower is an opportunistic liar and is known to act in this manner by the creditor. There is therefore no trust between creditor and borrower other than ‘opportunistic trust’ based on repeated interactions between the same borrower and creditor, when the borrower can develop a reputation for truth telling that derives from the financial value to the borrower of his

(3) We cannot do the enormous literature review in financial contracting justice that has blossomed over the last 35 years. For a more detailed discussion, see Hart (1998), Bolton and Dewatripoint (2004), and Tirole (2005).

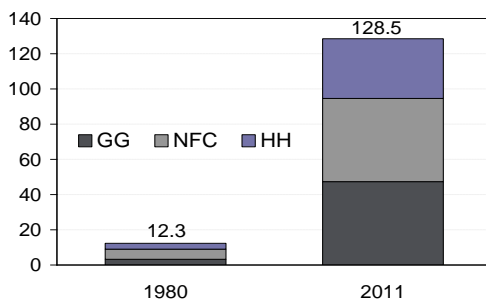
reputation or when the creditor can punish the borrower ex-post for not telling the truth.⁽⁴⁾

The assumption that there is no intrinsic value to the borrower of truth telling – independent of the present or future monetary rewards that may be associated with telling the truth – is clearly not universally correct. Many persons don't take an opportunistic or purely instrumental view of lying versus truth telling. George Washington's "I cannot tell a lie" tale is (or was) a staple in the moral upbringing of most American children. Evolution may well have favored mutations that make truth telling a 'compulsion' - the natural course of action in exchanges of private information that is abandoned only when the cost of truth telling become unbearable. The deviation of the outcome under the SDC from the first-best, full information sharing equilibrium can be viewed as an economic metric of the cost of the absence of trust.

2.4 Why Debt Made a Lot of Sense in Practice

As it turned out, debt has proved an immensely popular financial instrument in recent decades. Buiters and Rahbari (2012) showed that in a sample of 17 advanced economies gross debt in the non-financial sector (NFS, the combination of the household, non-financial corporate and general government sectors) rose more than tenfold in current US dollar terms from \$12.3 trillion to \$128.5 trillion in 2011 (see Figure 1). Relative to GDP, gross debt of non-financial sector roughly doubled from 168% of GDP to 315% of GDP. A recent study (Buttiglioni et. al., (2014)) shows that the global ratio of gross non-financial debt as a share of annual GDP has risen every year since (at least) the beginning of this century from just over 160 percent to just under 215 percent.

(4) This of course only works if, with some delay, the creditor uncovers the truth.

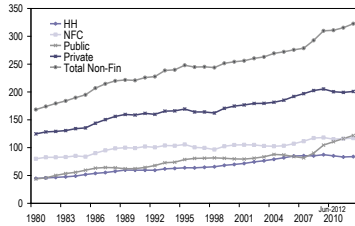
Figure(1): *Advanced Economies – Non-Financial Sector Gross Debt (USD trn)*

Note: HH = household, NFC = non-financial corporation, GG = general government. Non-financial sector gross debt equals the sum of HH, NFC and GG gross debt. Gross debt corresponds to financial liabilities for HHs and the GG, and financial liabilities excluding shares and other equity for NFCs. The countries covered are Japan, Italy, UK, Portugal, Spain, Belgium, Greece, France, Finland, Netherlands, US, Korea, Australia, Austria, Sweden, Germany and Canada.

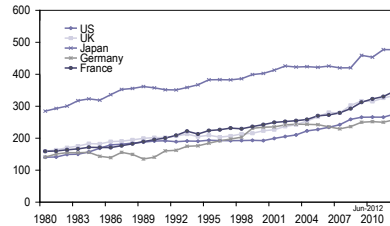
Source: OECD, National Sources and Citi Research

The increase in debt has been very broad-based, rising in most countries and in most sectors (see Figures 2 and 3). Of 26 advanced economies considered in Buiter and Rahbari (2012), all without exception saw an increase in NFS gross debt between 1995 and 2011. Household, non-financial corporate and general government gross debt all increased for the advanced economy aggregate, with private debt rising more strongly before the global financial crisis, whereas public debt rose sharply thereafter. Since 2009, emerging markets have been leveraging up rapidly, mainly in the corporate sector, but also, in quite a few countries, in the household sector, the banking sector and the public sector.

**Figure (2): Advanced Economies
Gross Debt by Sector (% of GDP)
1980-Q2 2012**



**Figure (3): Selected Countries
Non-Financial Sector Gross Debt
(% of GDP) -1980-Q2 2012**



Note: Advanced Economy gross debt by sector is constructed as gross debt weighted by the time-varying shares of nominal GDP in 17 countries (Australia, Austria, Belgium, Canada, Finland, France, Germany, Greece, Italy, Japan, Korea, the Netherlands, Portugal, Spain, Sweden, UK and US). NFS is the non-financial sector (sum of HHs, NFCs and the GG). Gross debt is equal to total financial liabilities for HH and the public sector, and to total financial liabilities fewer shares and other equities for NFC. Values are on a non-consolidated basis except for Portugal and Australia.

Source: IMF, OECD, National Sources and Citi Research

The extraordinary rise in debt levels was only loosely related to the theoretical benefits that debt offers, which we discussed above. Rather, increasing debt was the result of a complex economic, political, social and financial dynamic equilibrium, which seemed at least locally quite stable for as long as asset prices were rising. The attraction of the debt to its holders is, as noted earlier, that it offers, or appears to offer, a predictable, safe income stream. The perception of safety, or better the delusion of safety for the creditor, was systematically buttressed by rating agencies’, issuers’ and analysts’ wilful or clueless mischaracterisation (i.e., egregious understatement) of the riskiness of debt. The perception of safety and its representation, perhaps slightly encouraged by the theoretical argument that debt did not require much monitoring once it had been issued, left investors all too happy to ignore the risks and to skimp on the investigation of the creditworthiness of the would-be borrower before the debt contract was signed.

Debt is attractive to issuers because, among other advantages, it provides leverage, in the economic sense of the word, or in the words of the Counterparty Risk Management Group II (2005): “...leverage exists

whenever an entity is exposed to changes in the value of an asset over time without having first disbursed cash equal to the value of that asset at the beginning of the period.” For a corporate entity seeking external finance, leverage is nice if you can get it. It magnifies the range of potential returns and, with limited liability, the return prospects are asymmetric: I (the borrower) win - I keep the spoils. I lose - you (the lender) lose too. For households and non-financial businesses, borrowing allowed an increase in current spending, for consumption or capital expenditure. Raising equity could in principle do the same, but was much harder, perhaps because it is much more difficult to pretend that equity investments are safe, particularly after the dotcom bust of the early 2000s. And debt also often provides tax benefits that equity funding does not, as many countries then (and still many, but slightly fewer countries today) allow interest and sometimes even part of the principal payments of debt to be deducted from taxable income.

But debt was not only attractive to private lenders and borrowers. Governments have, of course, also been enthusiastic borrowers in recent decades, particularly so after the GFC. Governments, regulators and supervisors were also first-order cheerleaders for the safety of debt, starting with government debt (including the notorious zero capital risk weights for certain sovereign exposures for banks under the Standardised Approach of the Basel capital framework and the endless proclamations that sovereign debt was safe that have been made by government officials over the years). But governments not only promoted their own debt, as Rajan (2010) highlighted so persuasively, politicians did their utmost to encourage the cult of debt, particularly for households.⁽⁵⁾ One major motivation has been that growing access to debt for lower-income households in the advanced economies allowed these households to sustain or even boost, for many years, their consumption levels and home purchases, despite the fact that their incomes stagnated and inequalities of income, wealth and opportunity were widening for much of the past four decades. In such a set-up, light-touch financial regulation and the various tax subsidies governments introduced adopted for debt over the years can hardly be called a surprise or a coincidence.

(5) Rajan (2010) did so mostly with reference to the US, but his point applies more broadly.

There was thus an extraordinary confluence of interests between borrowers and lenders in the private sector, the financial sector, and governments to encourage ever more debt issuance. Since the start of the Great Moderation, rising asset prices (increasing the value of homes and stocks as collateral) and the absence of deep and long recessions that could have impaired debt service capacity provided the last two missing pieces of the puzzle which allowed everyone involved to believe, or pretend to believe, that all was well, even though debt levels continued to rise, seemingly without limit.

3. The Problems of Debt in Theory

We noted above that the contracting literature has pointed out various limitations to the view that debt contracts may help achieving efficient and perhaps even first-best allocations. But far from stopping there, even the theoretical literature has been well aware for decades that debt can be positively harmful. There are three (related) costs and risks of debt that are particularly notable: i) the fact that debt, particularly when it is large, gives rise to behavioural distortions, ii) the fact that bankruptcy costs are typically large, and iii) the fact that behavioural distortions, large bankruptcy costs and the high interconnectedness of modern societies and financial systems can create the potential for “chains of default”, with often devastating consequences.

The academic literature has emphasized that debt, particularly when it is relatively large, can cause either underinvestment (the debt overhang problem of Myers (1977) or excessive risk-taking. For the former (debt overhang), the presence of existing (relatively large) debt means an entrepreneur faced with a capital call for an investment project or considering a new (positive NPV) investment project, may refuse to invest because the capital injection (by reducing the probability of default) would also lead to a wealth transfer to the existing lenders. For the latter, the presence of debt coupled with limited liability aggravates the issue that equity has a convex payoff function: the equity owner is able to capture all of the upside (after costs, including debt service), but her losses are limited to losing her equity investment. Debt, particularly if it is large enough, can, therefore, systematically induce adverse behavioral distortions in the decisions of individual households and businesses.

The second issue concerns bankruptcy costs. The bankruptcy process is privately and socially costly. It involves a waste of real resources. The wasted resources include the costs of legal procedures, law enforcement and time and effort spent by the borrower and the lender during the bankruptcy process. In the case of corporate bankruptcy it also includes the likely real resource costs of interruptions to business continuity during the bankruptcy process and, should the bankrupt enterprise cease to function as a going concern, the likelihood that the value of the enterprise as a going concern is less than the value of the assets that can be realized when the enterprise is liquidated, broken up or sold. The costs of bankruptcy are, therefore, often large. They are partly a policy choice, and inefficient judicial procedures needlessly raise the bankruptcy costs further. Such inefficiencies should be eliminated where possible. But even the most efficient insolvency procedures are likely to involve significant disruption.

The resource costs of bankruptcy would be less of an issue if, as some of the academic literature had argued, the (private) costs of bankruptcy (to the entrepreneur) would be sufficient to provide incentives for entrepreneurs to avoid bankruptcy altogether. But in an uncertain world, even the right incentives do not rule out the 'bad' outcomes. Even worse, as noted above large existing debt may, in fact, encourage excessive risk-taking and thereby increase the incidence of bankruptcy.

Debt overhang and excessive risk taking imply that the actions of the debtors create negative externalities for the lenders, which suggests that the social consequences of too much debt can be very problematic. Bankruptcy costs are socially costly even if the bankruptcy only involves an individual entity (and perhaps an individual investor). But the problem of excessive debt in the aggregate is generally much more serious than in the individual borrower-lender relationships. One reason is various feedback loops associated with debt, default, large bankruptcy costs and illiquid asset markets, that can aggravate individual manifestations of insolvency (or, in the absence of an effective lender of last resort, may even be triggered by lack of market or funding liquidity) into systemic crises, as fire sales push down the value of asset prices and the potential for chains of default arise, whereby the insolvency of one institution causes the potential default of many others. Excessive debt can,

therefore, cause systemic crises, and such systemic crises can have very large and potentially long-lasting effects on actual and potential output, unemployment, and capacity use.

The second reason why excessive aggregate debt is socially costly is that if debt is considered excessive by public or private economic actors, the process of bringing down debt can be long-lasting and painful, even if it does not create a financial crisis, or even after the crisis phase has passed. Coordination problems in the process of debt reduction often substantially increase the private and social cost of debt reduction, as agents attempt to raise their saving rates in response to the excessive level of their debt without a matching increase in planned investment (capital expenditure) by either the agents planning to raise their saving rates or by other agents at home or abroad. This can give rise to Keynes' so-called 'paradox of thrift'. We consider this in the next Section.

4. Problems of Debt in Practice

The major problems of debt in practice are credit busts and slow recoveries in advanced economies. Excessive borrowing has been at the heart of a large number of financial crises, including the recent GFC that started in late 2007 and lasted into 2010, and the Eurozone sovereign debt and banking crises since 2010. The impact of the GFC and the euro area sovereign debt and banking crises on output and employment has been very large. And across countries, countries that had seen a larger build-up of debt prior to the crisis were hit harder during the crisis. Thus, Buiters and Rahbari (2012) note that for a 10pp larger increase in the pre-crisis non-financial sector gross debt-to-GDP ratio, the GDP loss (the difference between real GDP had it continued to grow at its pre-crisis trend and actual GDP) has been 2.2ppts higher, on average, in a sample of 30 advanced countries, and the increase in debt alone can 'explain' – in a purely statistical sense – almost 40% of the variation in GDP performance relative to trend.

Excessive debt causes financial crises and aggravates the resulting output and employment loss. It also tends to lead to slower recoveries. Recoveries in the advanced economies since the GFC have been disappointing across virtually all advanced economies, including the US. This is in line with historical evidence that suggests that deleveraging

episodes after financial crises result in slower recoveries, as the debt overhang hits both credit supply and credit demand and coordination failures prevent an orderly deleveraging process. In a closed system (like the world economy) it has to be the case that system-wide aggregate saving has to equal system-wide aggregate investment. Even though this relationship holds identically ex-post, that is, for realized saving and investment flows and for purchases and sales of financial instruments, it need not hold ex-ante, for planned investment and saving and for planned financial asset accumulation and decumulation. It can, therefore, be viewed, ex-ante, as a coordination constraint. Failure for it to hold ex-ante can result in the revenge of the ‘paradox of thrift’.

In the Keynesian textbook model, the paradox of thrift described a situation where a planned increase in saving by current-disposable-income-constrained households (that is, a planned or ex-ante reduction in household consumption demand at a given level of household disposable income) weakens output and employment to the point that actual, realized or ex-post saving instead of rising as planned, rises less, stays constant or even falls because lower consumption demand lowers production and thus household disposable income. We saw variants of these destructive feedback loops at work throughout the periphery of the euro area, in the UK and in core euro area countries like the Netherlands, where the realization in 2011 by households that they were excessively indebted contributed to a major slowdown in private consumption demand and a recession.

4.1 A Key Obstacle to Recovery, Growth and Prosperity in the Advanced Economies: Too Much Debt and Too Little Equity

The world continues to drown in debt, although the drowning process is now a gradual and protracted one rather than the fast and violent debt implosions of the GFC. Private sector debt- to-GDP ratios in most advanced economies are now coming down slowly or at least are no longer rising, but the levels are still dangerously elevated in most countries, including the US, the UK, Scandinavia, the euro area and Japan (see Buiter, 2011) and Buiter and Rahbari (2012a,b). In many advanced economies, including the US, the UK, Japan and most of the euro area member states, the public debt and the public debt to GDP ratio continue to rise. It is our view that it is only the extraordinarily (and probably unsustainably) low levels of nominal and real interest rates that

prevent acute sovereign and household debt crises in many advanced economies. If debt service does not create widespread problems at the moment, this is because of the extraordinarily (and unsustainably) low levels of official policy rates (which are at or near the effective lower bound almost everywhere), of long-term safe rates, term spreads and credit risk spreads. After all, it isn't too hard to stay current on interest obligations if the risk-free nominal interest rate is about zero at the short end and for 10-year maturities, around 0.60% in Japan, around 0.80 percent in Germany and around 2.02% in the US, with the associated real rates around zero at the long end and negative at the short end. If lender forbearance, backed up by regulatory forbearance, allows debt to be rolled over as long as the interest is paid, a financial crunch can be postponed for a considerable period of time.

The configuration of slow growth, subdued inflation and an excessive debt burden rendered manageable only because of the extraordinarily low interest rates in the advanced economies creates a stark dilemma. Demand-stimulating policies that would under normal circumstances promote faster growth (expansionary monetary and fiscal policies, say) would also likely raise nominal and real interest rates.⁽⁶⁾ If households, governments and in some cases also non-financial corporates are highly leveraged, the increased debt service burden caused by higher interest rates could create financial distress, depress private demand and force the fiscal authorities to forego their expansionary, debt-financed fiscal policies. We would be in an excessive debt trap, a self-sustaining dysfunctional equilibrium with low growth and low real and nominal interest rates, a situation characterized as secular stagnation by Lawrence Summers (2014) (see also Buiters, Rahbari and Seydl (2014)).

We have argued elsewhere that even if we choose not to equitize the excessive debt, or to restructure it and remove it as an obstacle to demand growth, secular stagnation of the kind described by Summers, driven by deficient aggregate demand (and possibly aggravated by the damaging effect of long periods of excess capacity and unemployment on

(6) Expansionary monetary policy would likely involve lower short-term nominal and real interest rates, higher longer-term nominal interest rates if it raises inflationary expectations with an indeterminate impact on longer-term real rates. Expansionary fiscal policy would raise nominal and real interest rates, in the short run and, if sustained, also in the long run.

the growth rate of potential output – hysteresis or path-dependence effects) is not an act of God or of nature, but a manifestation of policy failure: the inability or unwillingness to engage in a coordinated monetary and fiscal stimulus. A temporary fiscal stimulus, funded through a permanent increase in the monetary base can always be scaled up to a level sufficient to produce full employment, a high degree of capacity utilization and any desired rate of inflation. Why there has been no greater recourse to ‘helicopter money’ drops of this kind is an abiding mystery in a world with idle resources and below-target inflation. Clearly, such a coordinated monetary-fiscal stimulus will not raise the level and/or growth rate of the path of potential output significantly (except through hysteresis effects). Structural reforms or supply-side measures will be necessary to achieve that.

5. The Solution to Excessive Debt is Less Debt and More Equity

If too much debt and too little capital are (part of) the problem, then the conversion of existing debt into equity and a shift towards equity financing at the expense of debt finance for new investments is (part of) the solution. This is where the intrinsic attraction of Islamic finance lies for economists and everyone who attaches an appropriately large weight to financial stability.

5.1 The Equitisation of Bank Debt

We have on many occasions advocated the recapitalisation of banks through mandatory debt-to-equity conversions. Ideally this would occur through an expedited process of ‘insolvency lite’, through the special resolution mechanisms (SRR) that exist (or where they don’t exist ought to be created in a hurry) for banks and other systemically important institutions. Simply, the unsecured creditors of banks and similar institutions, starting with those holding subordinated debt and working up the seniority ladder until enough capital has been created, receive a letter in the mail saying: “Congratulations, you are now a shareholder. There will be no dividends or share repurchases for a while.”

This is fair - certainly much fairer than making the taxpayer shoulder the burden of recapitalizing systemically important financial institutions cough. We are not convinced by the argument that the need to recapitalize the banking sector (and other SIFIs) is due principally to

regulatory and supervisory failures; that these regulatory and supervisory failures are due to a failure of governments and parliaments to provide proper oversight; and that the tax payers and beneficiaries of public spending are ultimately responsible for having elected malfunctioning parliaments and governments. Unsecured creditor bail-ins are also efficient, properly aligning incentives for future risk taking. The unsecured creditors have had the benefit for many years of gratis default insurance. It is time they engaged in some true risk and profit-sharing.

5.2 The Equitisation of Mortgage Debt

Classic debt contracts are especially inappropriate for households, because the two main assets of households, human capital and owner-occupied property, are both illiquid. Human capital also constitutes bad collateral should a household be in need of external funds, because debt slavery and similar arrangements (like indentured workers) are illegal in most countries. But household mortgage debt could be turned into an equity claim. Many proposals for joint equity mortgage products have been floated in the US for quite a while now, and some have been implemented. It turns out that most of these proposals amount to a rediscovery of the traditional Islamic mortgage. For a new equity mortgage, the bank would start off as the owner of the property that secures the mortgage. The contract could take the following form. With a 20-year mortgage, say, the ‘borrower/tenant’ would pay the owner(s), initially just the bank, a rental to live in the property, plus a periodic payment transferring part of the equity in the property to the tenant, say 5 percent of the purchase price each year for a 100% mortgage to value ratio.

The initial value of the equity (the purchase price) is, if there is no speculative bubble, the present discounted value of the rentals expected not just over the 20 years of the mortgage contract, but over the entire economic life of the property. The actual rental payments could either be fixed in advance or be revised periodically in accordance with changing conditions in the local rental market. Each period the bank would only receive a share of the total rental income from the property equal to its remaining equity share, s_t , say, in period t . The tenant/mortgage borrower would pay a share $1-s_t$ of the total rental to himself. As long as the tenant/mortgage borrower meets the terms of the contract, he cannot be

forced to vacate the property. If the tenant does not pay the rental, he can be evicted following the proper legal processes. The bank could sell its share of the property (and the right to collect the rents for the remainder of the mortgage). It would have a stake in the upside (and the downside) of the property market.

If during a given year the tenant/mortgage borrower can pay the rental but does not have the resources to purchase the next 5% equity share from the bank (say because of unemployment, ill-health or some other misfortune), he can skip that payment. Indeed, if the tenant/mortgage borrower has acquired some equity share in the property he lives in, he can sell some or all of this equity back to the bank if he is strapped for money. The risk of eviction for non-performance is lower with a joint equity or Islamic mortgage than with a classical mortgage. Also, costly re-possession procedures are less likely.

A mortgage contract of this nature (suitably modified to allow for past interest and amortisation) could be offered to existing mortgage holders who are in default on their mortgages as an alternative to repossession. It could significantly reduce the socially wasteful repossession costs, which have been estimated for the US at between \$50,000 and \$80,000 per property repossessed. It could also be offered as an alternative to regular mortgages for new home borrowers.

5.3 The Equitisation of Public Debt

How can we turn public debt into something more akin to equity? One way would be to replace regular fixed or variable interest rate bonds by a security that would have the growth rate of nominal GDP (plus or minus some fixed number) as its interest rate. For simplicity consider the case where the nominal interest rate equals the growth rate of nominal GDP. With \$1 million worth of 10-year debt, for instance, there would be an amortisation of \$100,000 each year, unless the growth rate of nominal GDP that year were negative. With 5 percent nominal GDP growth in the first year, interest that year would be \$50,000. With minus 2 percent nominal GDP growth in year 1, interest payments would be minus 10,000, which could be paid as a reduction in principal repayments that year to \$90,000.

This way, with government revenues and deficits so closely coupled to GDP (as a measure of the effective potential tax base), weak growth would reduce the expansion of the public debt through the intrinsic debt dynamics that comes out of the product of the interest rate and the outstanding stock of debt.

Argentina issued real GDP growth warrants following its latest debt default in 2002. Of course, this could only work if the statistical office in the country were independent of the government and did not fiddle the GDP growth data to minimize the government's interest burden. A way to handle the long-lasting stream of GDP revisions would also have to be found, but such technical problems can surely be overcome. Even without fiddling the data, the fact that the growth rate of nominal GDP is, within limits, controllable by the government, could create worries about adverse incentive effects on the borrowing government. It is, however, hard to imagine a government that would slow down the growth rate of its economy just to reduce the interest rate on its debt.

This form of risk-sharing between the borrowing government and the investor would seem to be of interest not just in crisis situations but more generally. New government borrowing could take this form even for governments of undoubted fiscal rectitude. Governments threatened with the prospect of having to default on their debt because of unexpected weakness of GDP could try to restructure existing debt by offering to swap it, at a discount, for GDP growth warrants of the kind described earlier.

6. Conclusion

Debt, characterized by fixed financial commitments, can be a poor financing choice in a risky, uncertain world where the private and social costs of default are high. Many distortions, often created by policy makers, have contributed to the excessive use of debt in the private sector. There is the socially costly nonsense that (nominal!) interest is a deductible cost in the calculation of taxable corporate profits in many countries, but that dividends or retained earnings are not deductible. The deductibility of residential mortgage interest in the personal income tax system of many countries (although not in the UK) is another obvious

distortion. While it is true that, in the presence of asymmetric information lack of honesty and trust, certain agency problems can be mitigated if companies issue debt (as long as there are hard budget constraints), the highly leveraged state of many households, financial institutions and governments today would appear to be undesirable, preventable and remediable.

What we need is the application of Islamic finance principles, in particular a strong preference for profit-, loss- and risk-sharing arrangements and a rejection of ‘*ribā*’ or interest-bearing debt instruments. We are not talking here about the sham Sharī‘ah-compliant instruments that flooded the market in the decade before the crisis; these were window-dressing pseudo-Islamic financial instruments that were mathematically equivalent to conventional debt and mortgage contracts, but met the letter if not the spirit of Sharī‘ah law, as certified by some pliable Sharī‘ah scholar. We are talking about financial innovations that replace debt-type instruments with true profit-, loss- and risk-sharing arrangements.

Excessive and unsustainable debt should be restructured by converting all or part of it into risk-sharing, more equity-like products. The risk of future financial crises can be reduced by replacing new debt issuance with the issuance of more equity-like liabilities. Mandatory debt-to-equity swaps for the banking sector, conversion of defaulted residential mortgages into equity-sharing instruments for banks and households, and the replacement of traditional government debt by GDP growth warrants and similar social risk-sharing instruments could enhance both the ex-ante incentives for risk taking and the ex-post capacity of our economic system to respond to shocks.

The risk-sharing that is intrinsic in the conventional manifestations of Islamic finance, therefore, in principle has the potential to reduce the incidence of systemic financial crises and to reduce their costs. But that does not mean that Islamic finance is risk-free. Speculative bubbles do form without excessive debt and leverage (even though the consequences of their bursting tend to be less painful). Islamic finance, therefore, has a natural competitive advantage to conventional, more debt-reliant, versions of finance.

But to be more widely adopted, additional efforts are needed, including raising the transparency of the principles and the products. Joint ownership also implies decision-making costs and constraints that need to be taken into account and navigated. Two further and important caveats apply: first, it is important to note that Islamic finance implies the sharing of risk – which means realizing that there is risk in the first place. The riskiness of equity can be – and has, at times, been – underestimated and it would be ironic if the switch from debt- towards more equity-finance were mostly to result in an effort by the various interested parties (notably from the financial sector) to mischaracterise savers about the risks of investing in equity. Second, assessing risks can be complex and potentially resource-intensive. Greater reliance on equity finance should, therefore, be accompanied by efforts to provide a cheap and relatively safe savings product for the vulnerable. In our view, however, this can be achieved relatively easily if risk-sharing contracts for savers were to be combined with explicit insurance contracts.

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