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THE DESIRE FOR FINANCIAL SECURITY AS A CONTRIBUTOR TO SYSTEMIC INSTABILITY

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ABSTRACT

The human desire for security is innate, and the desire for financial security is an important part of that. Savers would like to see their savings remain intact until the time of need, but beyond that they would like to see those savings grow. While it is perfectly natural to wish to combine capital security with some kind of profit, realizing this wish is not as easy as it may first appear. It can be argued that the objective of combining capital security with profit tends to lead to systemic instability in the financial system and the economy at large. This paper attempts to identify the ways that policies intended to achieve this objective have led to recurring financial crises, most recently in the United States and Europe. To do so, it examines the role of key features of the banking system and capital market, including the lender of last resort, deposit insurance, collateral for loans, mark to market, and the inflexibility of securitized mortgages, along with the role of international trade imbalances. It also calls attention to other manifestations of unenlightened self-interest that ultimately harm the persons pursuing it. This is measured against the higher objectives of the Shari'ah, and some suggested remedies are discussed. The paper uses a qualitative methodology, employing a critical, comparative and analytical survey of the literature on the topic.

Keywords: Shari'ah Compatible Futures, Islamic Banking, Risk

SİSTEMİK İSTİKRARSIZLIĞA KATKIDA BULUNAN BİR ÖĞE OLARAK FİNANSAL GÜVENLİK İSTEĞİ

ÖZ

İnsanın güvenlik isteği doğuştan gelmekte iken finansal güvenlik isteği bunun önemli bir parçasıdır. Tasarruf sahipleri tasarruflarının ihtiyaç zamanına değin el değmeden kalmış olmasını arzu ederler. Fakat bunun ötesinde tasarruflarının büyümesini de isterler. Sermaye güvenliğini bir tür karla birleştirme isteği tamamıyla doğalken bu isteği gerçekleştirmek göründüğü kadar kolay değildir. Sermaye güvenliğini karla birleştirme finansal sistemde ve ekonomide sistematik istikrarsızlığa yol açma meylindedir. Bu makale, politikaların bu amacı gerçekleştirirken son dönemlerde ABD ve Avrupa'da finansal krizlere nasıl yol açtığını tanımlama gayretindedir. Bunu gerçekleştirmek için bankacılık sisteminin ve sermaye piyasasının son kredi mercii, mevduat sigortası, krediler için teminat, piyasaya göre değerleme ve menkul kıymetleştirilmiş ipotekleri içermek üzere temel özelliklerinin rollerini uluslararası ticaret dengesizliklerin rolü ile birlikte incelemektedir. Ayrıca, onu amaç edinen insanlara nihai anlamda zarar veren cahilce çıkarcılığın diğer tezahürlerine de dikkat çekmektedir. Bu, şeriatın daha yüksek amaçlarına karşı ölçülmekte ve buna dair önerilen bazı çareler incelenmektedir. Makale kalitatif metodolojiyi takip etmekte ve eleştirel, karşılaştırmalı ve analitik bir literatür taraması kullanmaktadır.

Anahtar Kavramlar: Şeriata Uyumlu Future, İslami Bankacılık, Risk

This paper is a layman's attempt to identify patterns in issues raised by a number of heterodox explanations of the financial crisis of 2008; this is combined with insights gleaned from discussions with Islamic finance practitioners in Malaysia and contextualized by relating them to Shari'ah insights on human nature, the nature of wealth and how people should deal with it. Heterodox economists generally identified the most important cause of the 2008 crisis to be an unsustainable pattern of private debt generation. That problem is, however, embedded in a larger matrix of moral hazard and other problems arising from earlier attempts to solve problems with the financial system. The following questions arise in attempting to understand this phenomenon:

1. What is the difference between saving tangible assets and saving money?
2. What is the nature of growth in nature as opposed to the growth of debt?
3. How does the desire to combine safety and growth of savings destabilize the economy, society and the environment?
4. How do rational microeconomic considerations lead to macroeconomic irrationality?
5. What can be done to mitigate the destabilizing influence of the desire to combine safety and growth of savings?

The methodology used for addressing these questions is a comparative and analytic reading of selected texts on financial crises along with texts of the Qur'an and Sunnah as well as writings on the higher objectives of the Shari'ah (*maqasid al-Shari'ah*) and discussions with Islamic finance practitioners. The analysis is combined with a synthesis of the insights derived from this reading.

Tarek Diwani's *The Problem of Interest* (2009) is an important predecessor in this effort. His linkage of the issue of *riba* to the thinking of ecological economics is particularly fruitful. His citation of Frederick Soddy insights on the nature of *money* as virtual wealth is immensely useful.

Much of the initial writing on the financial crisis of 2008 focused on the greed and moral failings of bankers and the special treatment they received from governments. The more interesting works, however, tackled the failings of mainstream neoclassical economics, which has served to legitimize the status quo in the name of efficiency. Many of the small number of economists who had accurately predicted the crisis before 2007 used models that owed a great deal to the theories of Hyman Minsky (d. 1996). One criterion of the validity of a scientific theory is its usefulness as

a predictive tool. The crisis laid bare the inadequacy of neoclassical economics in this regard and raised the stock of Minsky's theoretical model. He thought of capitalism as a system that goes through a cyclical pattern of expansion and crisis driven by the extension of credit.

The most famous of the predictors of the 2008 crisis is probably Nouriel Roubini, a professor of economics at New York University. His warnings of a housing crash and ensuing recession at an IMF meeting in 2006 were met with derisive scepticism and earned him the nickname of "Dr. Doom". Minsky's ideas are central to Roubini's 2010 analysis, *Crisis Economics: A Crash Course in the Future of Finance*. He also draws heavily on Kindleberger's *Manias, Panics and Crashes: A History of Financial Crises*.

Another economist made prominent by the crisis is Australian Steve Keen, who has attempted to mathematically model Minsky's ideas. He stated in 1995, "Chaotic dynamics...should warn us against accepting a period of relative tranquility in a capitalist economy as anything other than a lull before the storm" (Keen, 1995: 634). His 2005 warning of an impending crash of the housing bubble garnered him numerous interviews on international news channels at the peak of the crisis. His *The Debtwatch Manifesto*, published on his blog details his analysis and prescriptions in non-technical language.

Dirk Bezemer (2009) identified the British economist Wynne Godley as particularly prescient in this regard. Godley provided a detailed model of flow of funds that prompted him to issue a warning in 1999 about the unsustainability of economic growth predicated on ongoing high levels of private debt growth.

Ann Pettifor, a leader of the Jubilee 2000 campaign to write off the debt of the world's poorest nations, published *The Coming First World Debt Crisis* in 2006. She detailed the history of the international banking system, its inequities and the reasons why the so-called Great Moderation would be unsustainable, including money creation through the extension of credit. She also linked the pathologies of the financial system with environmental and broader ethical issues.

George Cooper is a financial practitioner. His *The Origin of Financial Crises*, published in 2008, lucidly points out the flawed assumptions of the Efficient Market Hypothesis. His discussion of the money creation function of banks is, according to Keen, flawed.

John Cassidy, the economics reporter for *The New Yorker*, has written what may be the single best introduction to economics for the layman, *How*

Markets Fail (2009). He explains both the strengths and weaknesses of classical and neoclassical economics. Their strengths lay in recognizing the superiority of markets over centralized bureaucracies in processing certain kinds of economic information and allocating resources for the production of consumer goods. The main weakness of the neoclassical school, besides the failure to deal with the market's indifference to externalities, lies in its failure to acknowledge the impact of behavioral psychology on markets. By contrast, crowd psychology plays an integral part in the thinking of Keynes and Minsky. Cassidy's greatest contribution is the systematic detailing of how the rational choices of individuals striving to maximize their own interests lead to irrational outcomes for the economy and society as a whole.

Another book written by a financial practitioner is Richard Duncan's *The New Depression: The Breakdown of the Paper Money Economy* (2012). He does a good job of demonstrating how different the current economy—which he calls "creditism"—is from 19th-century capitalism. He points out the twin dangers of debt deflation and of quantitative easing that does not result in real economic activity.

Mian and Sufi, in *House of Debt* (2014), conduct a masterful analysis of economic data to tease out causal links in the 2008 crisis between the terms of debt contracts—particularly in the context of securitization—and the housing crisis and the rise in unemployment. They also offer some interesting prescriptions for making debt contracts more flexible.

An interesting addition to the literature is Benes' and Kumhoff's *The Chicago Plan Revisited* (2012). It tackles the underlying monetary problem that drives the boom-bust cycle. The proposal for full-reserve banking is by no means new, having been first proposed by Frederick Soddy about 90 years ago. Benes and Kumhoff have, however, modelled the effects of the plan's implementation on the modern US economy to test its proponents' claims regarding its economic effects. They conclude that full-reserve banking would have positive effects on growth and stability. It is particularly interesting that such a paper would be published by the International Monetary Fund, given its neoclassical orientation.

Savings and Money

The human need for safety is deeply rooted in biology. Every animal strives to survive; thus, exposing oneself to life-threatening risk is normally avoided by most creatures. In Qur'anic terms, this desire for safety can be understood as *fitrah*. Allah implicitly acknowledges this feature of human

psychology by reminding people of His favor upon them in keeping them safe and sustaining them:

فَلْيَعْبُدُوا رَبَّ هَذَا الْبَيْتِ (3) الَّذِي أَطْعَمَهُمْ مِنْ جُوعٍ وَآمَنَهُمْ مِنْ خَوْفٍ

"Therefore, let them worship the Lord of this House, who fed them against hunger, and secured them against fear" (106:3-4).

Likewise, exposing oneself to the loss of wealth is contrary to *fitrah* and Sharīʿah. Allah says:

وَلَا تُؤْتُوا السُّفَهَاءَ أَمْوَالَكُمُ الَّتِي جَعَلَ اللَّهُ لَكُمْ قِيَامًا

"Do not entrust your properties - which Allah has made a means of support for you - to the weak of understanding..." (al-Nisa' (4): 5).

Contrary to popular Muslim understanding, Prophet Muhammad (peace be upon him) did set aside some wealth for future needs. ʿUmar ibn al-Khaṭṭāb reported that Prophet Muhammad (peace be upon him) used the proceeds from the lands forfeited by the tribe of Banū Naḍīr when they went into exile for the annual expenses of his family (Muslim, n.d.: 3/1376, no. 1757).

"كَانَتْ أَمْوَالُ بَنِي النَّضِيرِ مِمَّا أَفَاءَ اللَّهُ عَلَى رَسُولِهِ مِمَّا لَمْ يُوجِفْ عَلَيْهِ الْمُسْلِمُونَ بِخَيْلٍ وَلَا رِكَابٍ، فَكَانَتْ لِلنَّبِيِّ ( ) خَاصَّةً، فَكَانَ يُنْفِقُ عَلَى أَهْلِهِ نَفَقَةَ سَنَةٍ..."

Al-Nawawī (1392: 12/70) explained that he would set that amount aside, but that would not prevent him from spending from it for charitable purposes. This amount would be exhausted before the end of the "fiscal year", which is why the Prophet (peace be upon him) died with his armor mortgaged for grain he had purchased for his family on deferred payment. Although the Prophet (peace be upon him) did not personally choose to save wealth above his basic needs, the Qur'an clearly indicates the permissibility of saving "for a rainy day". In the Qur'anic example, however, the saving was actually for a drought, and it lasted for years, as is well known from the story of Yusuf. He interpreted the king's dream to mean that seven years of regular harvests would be succeeded by seven years of drought. He therefore advised that granaries be established to store the surplus grain during the good years, and he volunteered to administer the savings system.

It is worth noting that the saving here was of physical wealth and that saving physical wealth always entails costs. Silos must be built to hold grain, for example. But even in a silo, grain is vulnerable to fungus, insects and rodents. In the modern era, grain is fumigated with carcinogenic chemicals

to protect against fungus. Despite that, an expert estimates that ten to 18 percent of stored grain is lost to pests (phys.org, 2015).

Entropy is a fundamental law of nature that applies to all physical goods. Iron rusts, wood rots, asphalt and cement crack; bridges that are not properly maintained collapse. One of the attributes of gold that made it an ideal choice for commodity-based money was that it does not rust. Despite that, gold's high value means that it must be guarded around the clock against theft. The bottom line is that saving tangible assets entails costs.

Gilbert Rist (2011) argues that one of the huge deficiencies of classical economics (and its neoclassical descendant, which has maintained many of its key axioms) is its blindness to entropy. Classical economics developed in the 18th century, when Newtonian mechanics represented the epitome of science. Economists who wanted their field to be considered a science modeled economies using Newtonian concepts. Newton's laws were developed to explain movements in space, and any such movement is theoretically reversible. The second law of thermodynamics, which states that the universe is moving inexorably toward a state of increased disorder, was not formulated until the 19th century. Mainstream economics has ignored the concept. The only real exception to that is the recognition of depreciation in accounting. Only ecological economics recognizes that human economic activity cannot be properly understood without recognizing that it occurs within ecosystems. The rules of ecology impose limits upon it and impose penalties when they are ignored.

Since saving tangible assets entails costs, the German economic thinker Silvio Gessell argued that it makes economic sense for a possessor of physical savings to lend such assets on a non-interest basis. Gessell coins a parable in which a shipwrecked sailor asks Robinson Crusoe, who has a surplus of grain, for a loan, promising to give him the same amount back after the next harvest. When Crusoe objects that there is no benefit for him in such an arrangement, the sailor uses the abovementioned argument to convince him that he would actually benefit greatly. Gessell observes that the difference between this arrangement and a loan of money is that money is not subject to decay. Real-wealth is constantly subject to the law of entropy while money is a mathematical concept for which rules can be—and are—contrived that ignore the constraints of the physical world.

In addition to its endorsement of saving physical goods, the Qur'an also approvingly reports the saving of money. In Surah al-Kahf, Musa suggests to Khadir that he could have asked for payment after Khadir had repaired a sagging wall in a village that refused them hospitality. Khadir informs him

that the wall belonged to two orphans whose father was a pious man. The father had buried a treasure for them beneath the wall. Allah wanted Khadir to repair the wall so that the treasure would be available for the orphans to use once they became old enough to defend it against the unscrupulous people of their village (al-Quran, 18:77-82). The primary explanation of the buried treasure is that it was gold (Ibn al-Jawzi, 1422, 3:103).

Savings in the form of stored value are, however, taxed by the Sharī'ah through the institution of *zakāh*, which reduces the amount at the rate of 2.5% annually. At that rate, an amount of, say GBP 10,000, would be reduced below the *nisab* (worth GBP 2228.31 as of 15 July, 2015) within a period of sixty lunar years. That is why 'Umar ibn al-Khaṭṭāb was famously quoted as advising the guardians of orphans to invest their wards' wealth so that it would not be consumed by *zakāh* (Mālik, A'zami, 2004: 2/353, no. 863):

"اتَّجِرُوا فِي أَمْوَالِ الْيَتَامَى، لاَ تَأْكُلُهَا الزَّكَاةُ".

This is an important point as it demonstrates the wisdom of the Lawgiver, who understood, long before John Maynard Keynes, that thrift can have negative macroeconomic effects. If everyone saves and consumption is reduced, aggregate demand drops. In a modern economy, companies reduce production and unemployment grows. That can create a positive feedback loop that, if left unchecked, could ultimately lead to depression.

In the modern world, savings are also "taxed" by inflation. The central banks of developed economies target an annual consumer price inflation rate of around two percent. Among the reasons given for this policy is that the measurements of inflation are not completely accurate so it is better to have a little inflation than a little deflation because deflation has been identified as a cause of downward spirals into depression A little inflation also provides leeway for central banks to intervene in the economy by adjusting the interest rate, and it provides a means to surreptitiously limit workers' real wages (Billi and Kahn, 2008).

Real inflation is probably higher than the official figures that measure it. The consumer price index in the United States excludes food and energy costs. If those were to be factored in, inflation would have been significantly higher than reported for most of the last few decades. Governments have an incentive to underreport inflation. The high inflation rates of developed countries in the 1970s created the expectation of inflation among workers/consumers as well as corporations. Every party routinely began seeking price and wage increases to defend themselves against falling real

income in the face of the rising price of everything. Despite Western economies having supposedly controlled inflation, the cumulative effect of acceptable inflation has meant that a US dollar in 2007 was only worth 69 percent of a dollar in 1992 (Chorafas, 2009: 63). It should also be noted that inflation in developing countries has tended to be higher than in the developed world.

In the face of pervasive and seemingly perpetual inflation, if money is saved in a way that does not increase its value, its actual value will steadily decrease over time. 'Umar's advice to invest savings in order to prevent capital erosion is more relevant today than it ever was. The problem with all real world investments, however, is that there is a risk involved, and that risk is inescapable. Any enterprise that seeks profit is also subject to loss. Savers would prefer to see their savings increase without risk, but that is not possible except by the rules of the game of interest. The desire for safe investment that yields an increase is universal. It is the goal not only of small savers but of pension funds, insurance companies, sovereign wealth funds, banks, hedge funds, etc. The list is virtually endless.

Money, debt and savings of money are all social constructs. That means that people devise rules for how these systems operate. Muslim jurists have always considered money a form of wealth, given the fact that it is universally preferred as counter-value in exchange contracts. Al-Jurjānī (1983) defined a sale (*bayʿ*) as

مُبَادَلَةُ الْمَالِ الْمُتَقَوَّمِ بِالْمَالِ الْمُتَقَوَّمِ، تَمْلِيْكًا وَتَمَلُّكًا.

"the exchange of any legally recognized property having financial value (*māl mutaqawwim*) for another legally recognized property having financial value that effects a transfer of ownership of each transacted property to the counterparty (48)".

Imām Mālik (1994) famously stated:

ولو أن الناس أجازوا بينهم الجلود حتى تكون لها سكة وعين لكرهتها أن تباع بالذهب والورق نظرة

"...if the public were to accept leather [as a medium of exchange] and turn it into minted money, I would detest its sale for gold and silver for deferred payment" (3:5).

Similarly, the Ḥanafī Imām, Muḥammad ibn al-Ḥasan al-Shaybānī held the view that

النَّمْنِيَّة تَثْبُتُ بِاصْطِلَاحِ الْكُلِّ

"[something is] established as the medium of exchange by universal acceptance" (Ibn al-Humām, n.d.: 7/20).

It was on this basis that the Islamic Fiqh Academy of the Muslim World League issued its fatwa that all the Sharīʿah rules for gold and silver apply to fiat money.

Once something qualifies as money, the Sharīʿah rules for exchanging it become much more stringent than for regular commodities. Even if it started out as a commodity, it is no longer treated as one. When it is intrinsically devoid of any commodity features, then the aptness of Soddy's observation becomes readily apparent that money is "virtual wealth" rather than real wealth. The only intrinsic quality such money has is mathematical. People use numbers to measure things; so what does money measure? The standard answer is "value"; i.e., the value of any good or service. Modern money is a peculiar standard for measuring value, however, because it has no fixed value; its value is constantly changing.

Graeber (2012) observes that what money actually measures is indebtedness, which is a relationship between people. This is particularly true in the modern economy, in which the function of money creation has been turned over to private banks. This money is created by the issuance of credit, which is then tradable. Another way of putting it is that money represents a claim on wealth; i.e., its only value lies in its universal acceptance as remuneration for goods and services.

What happens when the rules of the game dictate that the aggregate sum of claims on the real wealth in the society constantly increases at a greater rate than the rate of wealth creation? When the two rates of increase differ, ownership claims will conflict, and the rights of creditors will prevail. When banks are the main creditors in society and have been given the authority to create claims on wealth, it is clear that the rules of the game will steadily transfer wealth to them and their shareholders.

Frederick Soddy, the Nobel-Prize winning chemist, observed, "Debts are subject to the laws of mathematics rather than physics. Unlike wealth, which is subject to the laws of thermodynamics, debts do not rot with old age and are not consumed in the process of living. On the contrary, they grow at so much per cent per annum, by the well-known mathematical laws of simple and compound interest." He further stated, "[T]he ruling passion of the age is to convert wealth into debt in order to derive a permanent future income from it—to convert wealth that perishes into debt that endures, debt that does not rot, costs nothing to maintain, and brings in perennial interest."

Interest provides the illusion of a safe return. Loans are, in theory, contingent upon background checks of the borrowers to make sure of their creditworthiness. On top of that, the lender demands collateral and/or a guarantor to secure the debt. After extending the loan, the lender can normally expect a steady income stream that ends with full recovery of the capital along with "profit". In case the debtor becomes unable to pay, the collateral can be sold to recover the value of the loan, or the guarantor can be called upon to make up the difference.

This might make sense on a microeconomic level, but it ignores the cumulative effect of interest-based debt on the economy as a whole. When these effects reach a tipping point, they render the security provided by collateral worthless. This is what happened in the 2008 financial crisis. The failure of Lehmann Brothers was closely linked to its business in securitized mortgages. Understanding the role of collateral in that process requires some background discussion of financial innovation in the last third of the 20th century.

A US government agency began pooling mortgages for resale to investors in the 1970s. Other governmental or quasi-governmental agencies began to do the same, and in the 1990s private entities, including banks, became heavily involved in the same process. This financial innovation brought liquidity to the mortgage market. Before that, the financial institution that originated a housing loan would usually hold it till maturity, which could be as long as thirty years. Securitized mortgages found ready buyers, including sovereign wealth funds, banks, pension funds, mutual funds and hedge funds, because they were given AAA ratings by the credit rating agencies.

Securitisation was part of a larger process by which debt of virtually any form became almost as liquid as cash. Richard Duncan (2012) observes:

> [B]ecause of financial innovation, credit has become more like money. Most credit instruments have long met the three criteria that define money. They can serve as a medium of exchange, they are a store of value, and they are a unit of account. In the past, however, they were not liquid. Now they are. The *repo market* makes them liquid. The repurchase market allows the owner of any credit instrument to obtain cash immediately by agreeing to repurchase that asset at a specified date in the future. Treasury bonds, municipal bonds, corporate bonds, GSE [government sponsored entity, e.g., Fannie Mae] debt, and asset-backed securities are all now completely liquid.

> In other words, the entire $52 trillion in credit market debt outstanding is liquid and, therefore, money-like (57).

Laldin, Furqani, Ansary and Azrak (2015) explain how the repo market developed and works:

> The repo market started out as a secondary market for the resale of US government securities, but it expanded to include the extension of short-term credit using sale-and-repurchase agreements of all kinds of securities, usually debt-based. The way it works is that a seeker of credit offers a security as collateral, receives some percentage of its current value in cash, and promises to repurchase it at its full value at a specified date.[1] That value will not be its market value at the time of repurchase; it is the appraised value at the time of the original transaction. This insulates the creditor from exposure to market risk. The transaction is comparable to what is known in *fiqh* as *bay' al-wafā'*, with the subject matter of the sale being debt, a practice that raises numerous Sharī'ah issues. Creditors in the repo market "mark to market" on a daily basis; i.e., they check the market value of the securities being held as collateral and require debtors to top up if the value drops.

This mark-to-market feature of the repo market had far-reaching consequences in 2007 and 2008. It made it very important for debt instruments to maintain their value. This consideration meant that the terms of the securities packaging eliminated any possibility of rescheduling payments in case an owner got into financial difficulty. Three missed payments would automatically trigger foreclosure proceedings. The logic of collateral dictated that the loan could be secured by selling the collateral.

Many of the mortgage backed securities that had received AAA credit ratings ultimately became known as "toxic assets". The rating agencies were widely criticised for corruption in their rating process. Critics pointed out the moral hazard imbedded in the rating agencies' business model. The agencies charge the issuers of securities to rate them, which meant it was in their interest to deliver a positive appraisal of their clients' products.

Macdonald (2012), however, argued that the rating agencies' assignment of AAA ratings to mortgage securities was not simply a conflict of interest. They were applying a methodology that made sense on the micro-level but failed to take into account the macro-level forces at work in financial capitalism's boom-bust cycle. When asked to examine a bundle of mortgages that had been securitized, the rating agency employees would

compare the amount of each loan with the value of the house that the loan was financing. They would compare the appraised value of the house with the going rate for houses of roughly the same specification in the same geographical area. If the value of the house exceeded the value of the loan, the loan was rated secure. It was on this basis that the packages were given AAA ratings.

It is unlikely that the ratings agencies were ignorant of what was going on in the housing industry—the so-called "liars' loans" and "NINJA loans" (No Income, No Job and no Assets). That they chose to ignore them means they probably believed the collateral would protect the loan under all circumstances.

That is an indicator of how thoroughly mainstream economic thinking had rejected the concept of bubbles and crises. Mainstream economists had convinced themselves and policymakers that the business cycle had been tamed once and for all and that asset prices would only go up in the future.

Many of the loans that were packaged into mortgage securities came with balloon mortgages. The loans were originated in a low interest-rate environment, but they came with the provision that the interest rate would vary in tandem with the rates set by the Federal Reserve or simply at the discretion of the bank. Some loans were structured so that the borrower initially paid nothing but interest. These structures were very effective in pumping "air" into the housing asset bubble. According to Minsky's model, they were an indicator that the bubble was reaching its final stages. He identified bubbles as being driven by banks' extension of easy credit, and he identified three types of borrowers. Hedge borrowers can afford the payments of both the principal and interest of the debts they assume. Speculative borrowers can only cover the interest payments, not the principal. Ponzi borrowers can afford neither; their only hope is to "flip" the asset, selling it quickly to another buyer before prices stop rising (in Roubini and Mihm, 2010).

When the Fed began steadily raising interest rates in 2004, buyers who could pay their mortgages at the lower rates could no longer service their loans. Defaults began to mount. Defaults triggered foreclosure proceedings. Repossessed houses were sold in an attempt to recover the amount of their loans. But as the number of repossessed houses being put on the market began rising, they became harder to sell at the value the rating agencies had assigned to them. When an asset bubble stops expanding, it does not stabilize at a new price plateau. Instead, prices begin to plummet as assets are sold off en masse to service unsustainable debts.

This meant that the mortgage-backed securities that were being used as collateral in the repo market began losing value. When that happened, the financial institutions that had placed them as collateral in repo agreements were asked to top up the falling value of their collateral. That frequently involved borrowing from Peter to pay Paul. As awareness grew that many of the "assets" possessed by financial institutions were worth only a fraction of their face value, and as no institution knew for sure how healthy any other institution was, they all became wary of loaning money to one another. The entire financial system locked up.

The inflexibility of securitized mortgages in case homebuyers faced difficulties in paying their instalments on time ultimately created negative outcomes for the wealthy as well as the indebted. Mian and Sufi (2014) have explained how the nature of the relationship between debtor and creditor in housing loans amplifies an economic downturn. Let us say a borrower puts up $20,000 to buy a house valued at $100,000, and the bank puts up the remaining $80,000. The borrower has a 20-percent stake in the equity of the house, but it is a "junior claim". If the value of the house drops to $80,000, the creditor, who has the senior claim to the asset, will have the right to all of the $80,000 while the borrower's equity will be wiped out.

The only asset of any substantial value that low-net-worth individuals owned before the 2008 crisis was their equity share in the value of their homes. Most of these individuals owed large amounts on their mortgages. When the crisis hit, the aggregate value of houses in the US fell by $5.5 trillion, more than one-third the amount of the Gross Domestic Product (GDP) of roughly $14 trillion. Because the poorest 20 percent of home owners were highly leveraged, their wealth was completely wiped out by the collapse of the housing market. In 2011, 11 million mortgages in the US were "under water"; that is, the value of the house had fallen below the value of the loan principal.

Mian and Sufi have skillfully analyzed detailed US economic data at the level of zip codes (which correlate closely with average wealth levels) to answer questions about the causal effects of the economic distress of the poorest house buyers on the economy as a whole. They concluded that the effects of the collapse in housing prices in the hardest hit areas were ultimately felt even in areas where houses retained most of their value. "After rising from 2006 to 2008, spending in 2009 fell by almost 10 percent in counties [that had experienced] the smallest decline in net worth" (Mian and Sufi, 2014: 36-37). That is because, as aggregate demand fell,

manufacturers were forced to cut back production, which led to rising unemployment.

Asset bubbles, bank runs, financial crises and debt deflation are all recurring and inter-related features of capitalism. Fractional reserve banking has unleashed the engines of growth by extending credit as it had never been previously extended in history, but it has done so at the price of cyclical instability. Bank runs have been a feature of the fractional reserve system since at least the 17th century. The unlikely event of many depositors simultaneously seeking to withdraw their funds can suddenly become inevitable when public confidence is shaken in a bank's ability to honor its commitments. No bank can survive a bank run without outside intervention. Cassidy (2009) points out that public doubt in a bank's viability becomes self-fulfilling. It would be better for all depositors not to demand their deposits at the same time. However, if a bank is in real trouble, anyone who leaves their deposits in it will probably lose them. Therefore, prudence dictates that each individual depositor, looking at his/her limited self-interest, should try to extract their savings before they are lost altogether.

The regularity of systemic banking crises in which a run on one bank spread to other banks led to the suggestion in the 19th century that every country needs a central bank to function as a lender of last resort to distressed banks. The financial crisis of 1907 provided the political will to establish the Federal Reserve Bank in the United States in 1913. In order to get access to the lender of last resort facility, participating banks had to agree to minimum reserve requirements.

The existence of central banks and reserve requirements were not enough to prevent the Great Depression of the 1930s. What started as a stock market crash quickly spread to the banking system, and more than 9000 banks failed in the ensuing panic. Government was looking for a means to restore public confidence in the banking system. The concept of full reserve banking had been endorsed by many academics and economists, but it had no support among bankers. Instead, the government chose the quick fix of deposit insurance, which left the basic system of banking unchanged.

The combination of a lender of last resort facility and deposit insurance sowed the seeds for massive moral hazard. Those seeds lay dormant while the memory of the Great Depression continued to influence the behavior of policy makers, bankers and the public, but that memory began to fade over time. By the 1970s, money market accounts that invested in short-

term government and corporate debt instruments began giving owners of capital higher returns than bank accounts. Money market accounts were erroneously considered to be as safe as bank accounts.

Banks began seeking ways to evade Depression-era restrictions on interest payments in order to compete for depositor funds. Certificates of deposit were the first crack in the dike of bank regulation, and by 1980 the restrictions had been removed on the interest rates that banks could offer on most accounts and the rates they could charge on loans. As the competition for depositor funds heated up, institutions began offering higher interest rates in a bid to attract customers away from their competitors. Depositors felt no need to exercise due diligence as to whom they placed their money with because deposit insurance assured them that their money was safe, no matter what. Institutions offering higher rates of return could only do so by investing in riskier portfolios. They too felt secure that, in case their investments turned sour, the lender of last resort would be there to recoup their losses.

This moral hazard was exacerbated by the movement toward deregulation, which increased momentum throughout the 1980s and 1990s. The movement was essentially driven by the financial industry, but it found ideological allies in academia and government. Ironically, efficient market theory seized the imagination of central bankers. If markets were as efficient as its proponents claimed, there would be no need for central banks. The fact that capitalist markets are locked into a series of boom-bust cycles was steadfastly denied and ignored. Banks were allowed to merge with insurance firms, stock brokerages and other financial service providers, creating massive new hybrid institutions like Citicorp. Restrictions were lifted that had prevented banks in one state from acquiring banks in other states, and no objections were raised to large banks merging with other large banks. This created the phenomenon of banks "too big to fail". Their failure would be so cataclysmic to the entire payment system that the government would be forced to intervene if their existence was threatened. Knowledge of this state of affairs emboldened these institutions to indulge in ever riskier behavior.

One of these risky behaviors was the derivatives trade, which added another layer of exponentially higher systemic risk to the financial system, all in the name of hedging risk. Derivatives offer, among other functions, a form of quasi-insurance against negative financial outcomes such as unfavourable changes in foreign exchange prices or interest rates. Unlike insurance, however, derivatives are completely unregulated. An attempt in 1998 by the chairperson of America's Commodity Futures Trading

Commission (CFTC) to get the authority to regulate the over-the-counter derivatives market was emphatically rebuffed by the US Congress, which passed legislation that explicitly prevented the CFTC from doing so. Thus, AIG, an insurance company, was able to sell credit default swaps and other derivatives without making the kind of financial provisions that are legally required when selling normal insurance. When AIG was confronted with an avalanche of liabilities arising from those contracts in 2008, it too was too big to fail and was bailed out in order to save its counterparties, the banks that had been buying derivatives from them.

The move to deregulate the financial services industry occurred at the same time that workers' real wages in the US were stagnating, a phenomenon that began in the 1970s. This occurred while productivity continued to increase, just as it had been doing for more than a century. One reason that people did not object much was because it appeared that inflation had been cured in the 1980s. A major reason for that was a mounting tide of cheap imports from Asia. The quality of goods manufactured in Asia was frequently comparable to those made in the US and Europe, but they were much cheaper because of the difference in labor costs. By the 1990s, Western manufacturers were moving their production abroad. Many famous Western name-brand goods were designed in the US and Europe but built by Asian workers. The decline of the Western blue collar middle class was well underway. Workers who continued to work in manufacturing jobs in Western economies were faced with downward pressure on wages by the competition of manufacturing from countries where the workers made less in a day than Western workers made in an hour. By 2007 America had lost half of its industrial base. Increasingly, the jobs that workers without postgraduate degrees could get in America were in the service sector, and these paid far less than manufacturing jobs had in the past.

The erosion of purchasing power was initially disguised by a new source of quasi-income; the taps of consumer credit flowed vigorously throughout the 1990s and until the crash of 2008. It was the spending facilitated by that credit which created the demand for goods that kept the world economy humming during those years. The value of all properties continued to inflate in the housing bubble of the 2000s. As the value of houses rose, homeowners were able to use them as collateral for second mortgages. This would have disastrous consequences for those lower echelons of the homeowner class who believed the hype that housing prices would never decrease.

However, the bubble could only continue to inflate as long as people could realistically continue to borrow. The limit came when there were no longer enough borrowers to assume new private debt. As the pool of qualified borrowers began to run out, all the normal criteria for evaluating debtors were thrown out the window in order to keep the securitization pipeline flowing. So-called "liars' loans" and "NINJA loans" proliferated as mortgage originators began scraping the bottom of the prospective debtor barrel. Abandoning these criteria was a direct result of securitization, yet another manifestation of moral hazard. The entities who originated the loans expected to sell the debts and pass the attendant risks on to the buyers. Since someone else would be bearing the risk, the temptation to expedite loans that would end up in default was too great for many loan originators to resist. Buyers thought the arrangements were safe because they had been given AAA ratings by the rating agencies.

At this point it is worth examining who was buying these securitized mortgages and why. But before doing that, we need to look at the impact that the collapse of the Bretton Woods international monetary system had on international trade. During the 19th century, the world had adopted the gold standard as the basis for all currencies. Whatever drawbacks the gold standard had, it had one major positive consequence: no nation could afford to run an indefinite trade deficit. If it did, gold would flow out of its economy, and it would be forced to adjust consumption accordingly. Bretton Woods, which was instituted at the end of World War II, pegged every currency to the US dollar and pegged the dollar to gold. Having the dollar as the world's reserve currency created economic conflicts of interest between the domestic US economy and the international economy. Those were further exacerbated by America's deficit financing of the Vietnam War. By 1972, America stopped converting dollars to gold because it could no longer afford to continue doing so.

Although the dollar no longer had any explicit commodity backing, the United States was able to persuade the oil-exporting countries of the Middle East to accept only dollars in payment for oil. That meant the whole world needed dollars to purchase the life blood of the 20th century economy. Thus the US dollar remained the world's reserve currency. That meant the US could print dollars to buy imports without suffering many negative consequences. Askari and Krichene illustrate how that process affects the international economy:

> Consider the reserve currency country and the rest of the world with no reserve currency. Let us assume that in the rest of the world there are 100 bushels of wheat and that there is local money in

circulation converted to $100. Assume the reserve currency country wants to import a quantity of wheat from the rest of the world for $50. It prints $50. Hence, the total amount of money to be offered for wheat is now $150. The clearing price of wheat is now $1.5/bushel instead of $1/bushel. The rest of the world now buys 66.7 bushels and the reserve country buys 33.3 bushels of wheat. The rest of the world has been compelled to export 33.3 bushels of wheat, a forced saving, a curtailment of investment and growth.... The result of this action is an inflation tax, an increase in the price level and a decline in the real consumption of the private sector....

> Often the recipients of the reserve currency redeposit it in the banking system of the reserve currency country, or use it to buy goods or securities from the reserve currency country or make transfer payments to the reserve currency country. The residents of the reserve currency country who receive dollars in payments will deposit these dollars with the reserve currency country's banking system. The bank that receives the check sees its reserves rise by an equivalent amount. The bank will expand credit. If the reserve ratio is 10%, then the credit multiplier is 10. If $100 is deposited, there will be an expansion of credit money by $1,000. This expansion will feed into imports since there is no foreign exchange constraint and the reserve money is automatically accepted in payments. In other words, importers in the reserve currency country can import without constraint.

During the 1970s the United States began building up massive trade imbalances with other countries, first with Japan and then even more massively with China. The list of countries with which America ran a trade deficit is, however, much longer than that. It also notably included the oil exporting countries, particularly of the Middle East. Most countries with trade surpluses set up sovereign wealth funds. The investment philosophy of most of these funds was conservative. That meant that the majority of the money was invested in the safest possible instruments that yielded a return. The best investment to match these criteria was US Treasury securities; the longer the period, the higher the return. Demand was so great for these instruments that every new issuance was massively oversubscribed. The sovereign wealth funds' insatiable appetite for US Treasury securities meant that they gobbled up whatever was available in the secondary market.

The sovereign wealth funds had many competitors for those securities: the majority of investments in the portfolios of pension funds and insurance companies have to be conservative, and US Treasury securities are the preferred instrument for that. They are also sought by money market funds and banks. The Basel Accords, which were enforced by law in the G-10 countries starting in 1992, impose capital reserve requirements upon banks and categorize capital into four classes of risk. Cash, gold, US Treasury securities and securities of OECD countries are all given a risk weighting of zero percent. The problem with cash and gold, from the perspective of the banks, is that they yield no income; therefore US Treasury securities have been the preferred way for banks to meet their capital adequacy requirements.

The next best category, given a 20% risk rating, includes AAA-rated securities. When risk-averse investors could not find enough Treasury securities to buy, their cash flowed like a torrent into the next best thing: AAA-rated mortgage-backed securities issued by quasi-agencies of the US government.

The Higher Objectives of the Sharí'ah

The overall goal of the Sharīʿah is to promote human wellbeing (*maṣlaḥah*) and ward off that which spoils it (*mafsadah*). ʿAlāl al-Fāsī eloquently summarized *maqāṣid al-Sharīʿah* thus:

> The overall objective of the Sharīʿah is to make the earth flourish [with civilization], to maintain the system of collective livelihood upon it, and to sustain its goodness by making good those who were placed upon it to carry out God's will. [This is] to enable them to accomplish the duty assigned to them of [establishing] justice and integrity, properly [developing and using] the intellect, improving the world, discovering and extracting its resources, and administering [all that] for the benefit of everyone (al-Fāsī, n.d.:).

An inductive reading of the Sharīʿah texts reveals five essential areas of life (*al-ḍarūrāt al-khams*) in which the aforementioned goals are most prominently manifested. These are religion (*dīn*), life, progeny, the intellect and wealth. The Sharīʿah's concern with each of these essentials is to promote their realization and to protect and preserve them once they do exist. These five areas are a matter of consensus. Some scholars have

identified other higher Sharīʿah objectives such as human dignity, justice and preservation of the environment (Attia, 2007). While the evidence for many of these auxiliary objectives is considerable, they have not met with the same wide scholarly acceptance as the five essentials.

Attia (2007) devotes considerable attention to discussing the relative priority of the five essentials. This issue is complicated by the consideration of intensity, a criterion that applies to each of the five essentials. Scholars have divided intensity into three levels: *ḍarūrah* is a need which, if it is not fulfilled, will lead to unbearable disruption of wellbeing; *ḥājah* is a need which, if it is not fulfilled, will lead to hardship that can be endured, but life will be difficult; *taḥsīnī* refers to embellishment, things that make life more pleasant and fulfilling, but the absence of such things does not induce hardship.

Scholars who have explicitly ranked the five essentials tend to place religion (*dīn*) at the top of the list; i.e., losing everything else is less disastrous than losing one's faith and leaving Islam. Life is generally placed at the second rank. Wealth is, at most, third in order of priority, and many have placed it at the bottom of the list. Attia (2007), in supporting this view, states, "After all, material wealth is a mere servant to human beings and external to their nature, whereas the preservation of family lineage, honor (and the faculty of reason) are intrinsic to the makeup of human beings..." (32).

It should be noted, however, that the objectives of the Sharīʿah do not normally conflict. They are, in general, harmonious and mutually supporting. Al-Shāṭibī (1997) states,

> فَلَوْ عُدِمَ الدينُ عُدِمَ تَرتُّبُ الْجَزَاءِ الْمُرْتَجَى، وَلَوْ عُدِمَ المكَلَّف لعُدِمَ مَنْ يَتَدَيَّن، وَلَوْ عَدِم الْعَقْلُ لَارْتَفَعَ التدَيُّن، وَلَوْ عُدِمَ النسلُ لَمْ يَكُنْ فِي الْعَادَةِ بَقَاءٌ، وَلَوْ عُدِمَ المالُ لَمْ يبقَ عيشٌ- وأعني بالمال ما يقع عليه الملك ويستبد بِهِ الْمَالِكُ عَنْ غَيْرِهِ إِذَا أَخَذَهُ مِنْ وَجْهِهِ
>
> If religion ceased to exist, the hoped-for reward [for righteous deeds] would cease to follow as a result. If there were no human beings held accountable before the Law, there would be no one capable of experiencing true piety. If there were no faculty of reason, [the requirements of] religion would cease to apply. If there were no progeny, there would be, as a norm, no survival; and if there were no material wealth, there would remain no possibility of life (2:32).

With regard to the preservation of progeny, one aspect of it can be strongly linked to the issue of sustainability; i.e., those who are alive now do not have a right to extract short-term material benefits, especially at the level of *taḥsīniyyāt*, that endanger future generations' ability to acquire the essentials of life. This theme is further enforced by the mention of stewardship (*khilāfah*) as the most fundamental role Allah envisioned for human beings on the earth (Qur'ān, 2:30). The Merriam Webster Dictionary (2015) defines stewardship as "the careful and responsible management of something entrusted to one's care". A related consideration is the general Sharī'ah principle that when a private benefit conflicts with a public benefit, precedence is given to public benefit.

The Sharī'ah does not seem to address the creation of wealth very directly. The Qur'ān mentions times (the daylight hours) and places (land and sea) for the pursuit of livelihood (28:73; 78:11; 16:14; 45:12; 62:10). It also apparently commands people to consume the sustenance Allah has provided them (2:168; 2:172; 6:141-2; 20:54). Scholars tend to interpret such commands as signifying permission, as they are mentioned in the context of reminding people of Allah's favors upon them. However, the mention of sustenance implies the effort to produce and earn since natural resources generally only represent the potential for sustenance (Al-Rummānī, n.d.). The key to unlocking that hidden potential is skilled effort, which implies knowledge and education. That brings us back to the interrelated nature of the *maqāṣid*. The objective of realizing potential sustenance is closely tied to the objective of developing the human intellect and the other capacities of the mind such as creativity.

The Sunnah has more direct exhortations to actively strive to produce wealth, praising manual labor (Al-Bukhārī, n.d.: 3/57, no. 2072) and honest trade (Al-Tirmidhī, 1975: 3/507, no. 1209) and condemning begging (Al-Bukhārī, n.d.: 2/123, nos. 1471 & 1474). The Qur'ān's lack of very specific exhortation regarding the human effort to create wealth is probably because people do not require orders to do what is ingrained in their nature. Every living creature seeks sustenance. Since greed is innate to human beings (al-Qur'ān, 4:128) and since each person must strive to control it in order to attain ultimate success (al-Qur'ān, 59:9 and 64:16), the Qur'ān contrasts lawful means of seeking wealth with unlawful means. The permissibility of trade is contrasted with *ribā* (al-Qur'ān, 2:275), and the essential requisite of mutual informed consent in trade is contrasted with all forms of acquiring the property of others by unlawful means (al-Qur'ān, 4:29).

In contrast to its summary allusions to producing wealth, the Qur'ān gives much more detailed instructions on the distribution of wealth. Examples of this include the obligation of *zakāh* and the specification of its authorized recipients (9:103; 9:60); the distribution of the spoils of war (8:41; 59:7); the distribution of inheritance (4:11-12; 4:176), and an extensive discussion of the ethics of giving charitably (2:262-274). Verse 59:7 articulates the fundamental attitude of the Lawgiver regarding the distribution wealth. The rule for distributing spoils of war to various needy elements in the society is mentioned along with the reason for it:

كَيْ لَا يَكُونَ دُولَةً بَيْنَ الْأَغْنِيَاءِ مِنْكُمْ

> "...so that it may not merely circulate between the rich among you (59:7).

Most writers on the subject of *maqāṣid al-Sharī'ah* regarding wealth consider this one of the most explicit articulations on it. The objection of some contemporary Muslim economists that the reason should not be expanded beyond the immediate rule of distributing booty is silly and need be given no consideration.

If we examine the interest-based credit system through the lens of *maqāṣid al-Sharī'ah*, we can arrive at a number of preliminary judgments about it. First, there is no denying that this system has unleashed the ability of human societies to process natural resources to produce goods that people find beneficial. It is not, however, the only effective cause in that regard. Technological innovation has been a major driving force in increasing human productivity. Because these two factors have been chronologically and culturally intertwined, it may make them inseparable in the minds of some, but there is no compelling objective reason why they cannot be separated.

Second, the ever-increasing rate at which natural resources are being processed in the current system is unsustainable. Tremendous strains are being placed on natural resources globally, including forests, fish populations and water aquifers, to name a few. On top of that, processing resources cannot be done without creating waste in the form of pollution. Perhaps the most dramatic threat of this type is global warming. Despite a chorus of naysayers being funded by elements in the petrochemical industry, a significant majority of the scientific community accepts global warming as a fact, and policymakers are beginning to come around.

An increasing number of ecological economists are pointing out the direct causal link between the interest-based credit system and industrial

civilization's threat to the environment. Taking on debt is called leveraging because it gives businesses competitive advantages during the expansion stage of a bubble (even though it impairs a business's ability to survive in a downturn). When a business (or a country) enters into the interest-based credit system, economic decisions are subjected to a cost-benefit analysis based upon discounted future cash flows. El Diwany presents the case of a farmer whose production is entirely financed by debt who is presented with two modes of production. One of them is highly intensive and yields a yearly net profit of £150 while the other is less intensive but only yields a yearly net profit of £100. However, the more profitable technique will render the land unproductive after fifteen years while the other will allow it to produce indefinitely into the future. As El Diwany demonstrates:

> The incentive towards intensive farming, and thus desertification, increases as the interest rate increases. This unfortunate result is entirely due to the familiar way in which the discounting process progressively reduces the present value of the land's output in future years toward zero. £100 of net profit earned in year fifty has a present value of approximately £0.85 if the interest rate is 10% per year (El Diwany, 2010: 16).

Third, the interest-based debt system is inextricably linked to an endless cycle of financial and economic crises. Crises of great severity, like the Great Depression of the 1930s, are associated with the rise of extremist political movements, the most notable case being fascism, which led to a world war in which more than 60 million people died. Even when recessions and depressions don't end in wars, they result in great human misery in the form of unemployment and the loss of property, including houses and farms.

In fact, the inherent instability of this system means that it is only being maintained by an extensive system of public subsidies in the form of bailouts and deposit insurance. It should be noted that the premium payments for deposit insurance are completely inadequate for rescuing the banking system in case of a full-blown systemic crisis like that of 2008. They serve more as a psychological prop to maintain depositor confidence during periods of calm. When a systemic crisis actually occurs, taxpayers are called upon to shoulder the real costs. These subsidies inject massive amounts of moral hazard into the system, making it more prone to future crises.

These findings illustrate the veracity of Allah's statement:

يَمْحَقُ اللَّهُ الرِّبَا

"Allah blights usury..." (al-Qur'ān, 2:276).

They also call to mind a metaphor mentioned by the Prophet ( ) in which he compared humanity to moths trying to fly into a fire and himself to a man trying to prevent them from doing so. Scientists have discovered why moths are attracted to light sources at night. They, and other nocturnal insects, are designed to navigate by the light of the moon. They fly in a straight line by maintaining a constant angle to it. But when they mistake some other light for that infinitely distant light, the navigation system produces unintended results. Maintaining a constant angle to a nearby light causes the moth to fly in a tightening spiral into the light. If that light is a fire, the moth burns up; if it is an electric light, it bounces off it and then keeps repeating the same dysfunctional behavior. Insects don't have minds that can transcend this trap. Humans do have intellects that can, in theory, learn from their mistakes. However, the structure of social organization creates powerful interests that resist the changes necessary for the greater good when they conflict with their private interests. A well-organized minority with considerable resources and access to the seats of power will prevail over a disorganized majority in almost all cases. And there is always an array of intellects for hire that will provide semi-plausible arguments to persuade the masses why the status quo must be maintained.

Proposed Solutions

A variety of solutions have been suggested for these problems. Mian and Sufi have provided a number of suggestions that revolve around the concept of making debt more equity-like. propose the introduction of what they call a 'shared responsibility mortgage' in which loan payments are reduced when home prices decline below the purchase price and revert when prices improve; in return, when the home is sold, the lender receives a portion of the capital gain. In that case, the mortgage payment schedule would be adjusted by linking it to the local house-price index. A 30% drop in house prices would mean a 30% drop in the mortgage payment. In order to balance the potential losses such an arrangement would impose on banks, they propose that the contract would give the lender a 5% share of any capital gain in case the house is sold or refinanced (Mian and Sufi, 2014).

Another area where the same approach is needed is student loans. Higher education is necessary to acquire the skills required for the better jobs available in a modern economy. The individual benefits from education through higher earnings, but the society as a whole also benefits from having skilled workers. In some capitalist economies, the individual is expected to bear a significant portion, if not all, of the expenses of higher

education. The reasoning is that the graduates' higher earnings will enable them to service the loans. But students who graduate as the economy enters a depression or severe recession will have difficulty finding jobs. They will not be able to pay off the hefty loans they incurred while studying. That would penalize them for having done something socially useful and may deter the next generation from seeking an education, leaving society with a potential deficiency of skilled workers. A proposed solution for this problem is to link repayment terms to the state of the job market. Some countries, like the U.K. and Australia, already defer repayment until the graduate finds a job, and the monthly payment is set at a fixed percentage of the graduate's income (Mian and Sufi, 2014).

It is also worth challenging the basic assumption that society has no business subsidizing the education of its brightest young high school graduates. This is a relic of neo-liberal/neo-classical ideology. The intellectual bankruptcy of this school of thought should have become apparent to the whole world in the wake of the 2008 crisis. The fact that its nostrums are still being implemented by Western (and other) politicians is an indicator of the real function this school has discharged in the last 35 years. It is there to bestow an aura of legitimacy to practices that benefit the economically powerful, "the belief of the populace and the elites that...the political [and economic] world is as it should be" (Tainter, 1988: 27). It is interesting that Bernie Sanders, who is campaigning for the Democratic Party nomination to run for president of the United States in 2016, is calling for free college education at the nation's state universities. He proposes to fund it by taxes on Wall Street transactions (Sainato, 2015), particularly the kind of transactions linked to speculation. He calls attention to the fact that 50 years ago college tuition at state universities was free (Bernie Sanders Speaks With Katie Couric, 2015).

Another manifestation of making debt instruments more equity-like is sovereign bonds linked to a nation's GDP. "When growth is weak, the debt servicing cost and repayment amount automatically declines; and when growth is strong, the return on the bond increases" (Barr, Bush & Pienkowski, 2014: ii). Papers exploring the idea have been published by such bulwarks of the mainstream financial system as the Bank of England and the International Monetary Fund. The only actual examples have been in debt restructuring of defaulting countries such as Greece and Argentina. Some creditors were persuaded to convert some of their outstanding loans to these equity-like structures. Of course, moral hazard is a major impediment to such an arrangement when the return is linked to GDP statistics that are issued by the debtor government. Governments would

have an incentive to under-report actual growth or, even more perversely, to suppress growth. Equity-based arrangements are frequently criticized for being prone to moral hazard, but as we have seen, the existing system is chock-full of moral hazard of its own.

The proposals for GDP-based bonds bear a strong resemblance to *mushārakah* and *muḍārabah ṣukūk* (Lahsasna & Shayad, 2015). *Ṣukūk* have the obvious potential to incorporate risk-sharing characteristics. Askari (2012: 5) explains how that would work in financing a real estate project. The purchasers of the *ṣukūk* would participate in the risk associated with the project by having property rights over the project's assets. In case the project fails, their compensation would be limited to these assets. With this scenario there is a one-to-one relationship between the growth of the real sector and the financial sector whereby credit cannot expand or contract independently of the real economy. The problem does not lie in structuring securities to be Sharīʿah-compliant; it lies in finding investors willing to purchase them.

William Mitchell (2014) has a much more radical critique of the whole issue of funding governments through the issuance of bonds. He points out that this is a relic of the gold standard, an inelastic monetary system in which government spending could only occur at the expense of private spending. In a world of fiat money, there is no reason that a government which controls its own monetary policy needs to get money from private entities to spend domestically. According to Mitchell, the function of bonds in the current system is to provide a taxpayer subsidy to banks, pension funds, insurance companies, money market funds and every other entity that manages funds on a large scale. Sovereign bonds provide these fund managers with a steady source of guaranteed income. The current economic situation combines two perverse characteristics: massive unemployment and unmet societal needs. Governmental creation of money in order to pay people to do useful work is the need of the hour, and it need not be inflationary as long as there is unused capacity in the economy. Money creation is exactly what European governments cannot do, based on the rules of their common currency, which (along with the high private debt levels that barely went down after 2008) is why unemployment remains so high there.

Malaysia has recently attempted to move the Islamic banking system toward equity-based financing by removing the implicit guarantee of deposit insurance from profit-sharing accounts. The impact of the Islamic Financial Services Act 2013 (IFSA) is to turn profit-sharing accounts into profit-and-loss-sharing accounts, one of the original proposals of Islamic

economists. But as critics have pointed out, what this requirement does is force Islamic banks to compete with well-established mutual funds with proven track-records of return on investment. It also places them in competition with massive institutional investors such as the Malaysian government's Employee Provident Fund, which has been investing huge amounts of money in the equity and bond markets for more than 60 years and has performed quite well throughout that period. There are also the government's investment trusts, which have an implicit governmental guarantee and a good past-performance record.

One CEO of a Malaysian Islamic subsidiary of a conventional bank responded to this proposal, when it was first publicly floated about five years ago, that it is an excellent idea, but it will only work if it is applied to all banks, conventional as well as Islamic. That is, in fact, what the Chicago Plan of the 1930s proposed. Its proponents suggested dividing the functions of banking into two separate divisions. One of them is to hold depositor's funds for safekeeping and to manage society's payment system between such accounts. These accounts would be true deposits rather than loans, and banks would not be allowed to use the funds in them to extend loans or make investments. The other type of account would be investment trusts, which could work just like IFSA's profit-and-loss-sharing accounts, although in the original Chicago Plan they were envisioned as making interest-bearing loans.

The main critique of this system is that it would reduce economic growth by eliminating the ability of banks to create credit. Interestingly, the IMF published a working paper a few years ago that re-examined the original proposal and tested its claims by running an econometric model of the US economy, all other things being equal, if the accounting treatment of bank deposits were converted overnight to government-issued equity (Benes & Kumhoff, 2012). Contrary to the standard criticism of the plan, in Benes' and Kumhoff's model, output gains approached 10%. The authors also confirmed the claims of the original plan's proponents that it would reduce the magnitude of fluctuations of the business cycle, eliminate bank runs, and reduce public and private indebtedness. It would also reduce the profitability and power of banks, which is why it is unlikely to be adopted as long as the present system hobbles along. It is clear that no political will can be expected for such a reform in the absence of another major crisis. Unfortunately, even if such a crisis occurred, this proposal has received so little public attention that there would be few voices raised to call for it.

Steve Keen, a heterodox economist and trenchant critic of the neoclassical orthodoxy, has expressed scepticism that full reserve banking

would be able to withstand the ingenuity of bankers. They have historically demonstrated their genius for innovations that bypass legislatively imposed restrictions upon them. He then proposed his own set of legislatively imposed restrictions that might limit bankers' ability to inflate asset bubbles through their lending practices. He proposes that the financing amount for house purchases be pegged to the income-generating potential of the asset. He states:

> A useful multiple would be 10, so that if a property rented for $30,000 p.a., the maximum amount of money that could be borrowed to purchase it would be $300,000. Under this regime, if two parties were vying for the same property, the one that raised more money via savings would win. There would therefore be a negative feedback relationship between leverage and house prices: a general increase in house prices would mean a general fall in leverage (Keen, 2012: 30).

This is similar in spirit to the strategy of LARIBA in applying *mushārakah mutanāqiṣah* to home financing in the United States. The first step in deciding whether a prospective house purchase makes sense is to determine the market value of the rental income that the house would generate. Rental prices of roughly comparable houses in the same area would be collected to arrive at an average dollar-per-square-meter monthly rental rate. The purchase price of the house, the amount of money that each partner (LARIBA and the customer) would contribute to buy the house together, and the length of the intended financing period would be fed into an algorithm to determine the expected return on investment (Abdul-Rahman, 2014). When the price of houses in an area is higher than a given multiple of the rental income, it is a sign of a housing bubble. A purchase that cannot yield a reasonable rate of return on an affordable monthly payment would be imprudent for both parties. This approach to financing attaches it strongly to the real economy and would be useful in preventing housing bubbles. There is a fundamental difference between this approach to *mushārakah mutanāqiṣah* and one that calculates the "rental" price solely on the basis of LIBOR or some other interest rate. The rental in the latter looks a lot more like the rental of money than of a tangible asset, particularly if the bank shifts the responsibilities of ownership onto its "partner".

CONCLUSION

The saving of wealth in the form of money is radically different, in terms of costs, from the savings of real wealth. Money, savings and debt are social

constructs. As such, the rules that govern them are socially constructed. What people have agreed to can, in theory, be changed by collective agreement. The rules that currently govern savings and debt dictate that they should automatically increase. These rules place human economies on a collision course with environmental stability and the sustainability of economies over time.

The money creation function of banks is particularly destabilizing. It fuels speculation and bidding wars for assets of relatively limited supply, most notably, urban real estate. This inflates asset bubbles that burst when the rate of increase of credit creation begins to slow down. The debt deflation that follows the bursting of an asset/credit bubble leads to depression if governments do not intervene to create money. When private debt levels remain high after such a crisis, recovery will remain anemic and fragile. The world appears to be on the verge of another economic crisis as the debt-fuelled Chinese bubble of the last seven years bursts.

The logic of collateral as a measure to protect the interest of the creditor only makes sense when thinking at the microeconomic level. Collateral becomes useless when an asset bubble bursts because the market becomes flooded with sellers trying to either pay off debts or recover the value of their loans.

The lender-of-last-resort facility and deposit insurance are considered essential means to prevent the wholesale collapse of the interest-based banking system from its own internal dynamics. However, both of these promote massive moral hazard. The lender-of-last-resort facility encourages banks to take risks they would not take if they thought they alone would bear the repercussions of their policies. On the other hand, deposit insurance encourages depositors to seek out institutions that offer the highest return without exercising any due diligence regarding the quality of their portfolios and management.

Attempts to make debt more equity-like are laudable, but they don't tackle the underlying cause of instability, which is the money-creation function of banks. Full-reserve banking combined with quantitative easing for the general public are the most promising prescriptions for an effective response to the current dismal economic situation. The public needs to be educated about the destabilizing features of *ribā*. Unfortunately, Muslims are almost as much in need of such education as non-Muslims. Depositors should be willing to pay for the safekeeping and accounting services that banks provide if they get a stable financial and economic system in return. Otherwise, as taxpayers, they will end up paying far more to bail out the

irresponsible policies of banks competing within the fractional reserve system.

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