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## **Financial capital democratisation: recipes for growth and disaster**

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**Abstract:** The broadening of access to financial capital otherwise known as financial capital democratisation (FCD), has been receiving increasingly more attention, especially from those who are concerned about poverty, community development and development of entire nations. This concept has also its roots in ethical and religious based economic systems. In this paper we review various FCD systems.

Our main conclusions are that the current crisis is due to severe adverse selection and moral hazard problems, that a new theory calling for acquisition of financial capital with the future earnings of capital sounds promising, the impact of the CRA in the USA is mostly negative, first-time home buyer grants as well as ESOPs and stock options in the work place have achieved some success and that micro financing is good for individual small-scale entrepreneurs but not sufficient for the alleviation of poverty in a developing nation. The paper also explores Islamic financing concepts and analyses its roots in FCD application, given wider interest generated for such financing techniques during the recent market upheavals when Islamic financial institutions seemed less affected by the crisis.

**Keywords:** financial capital democratisation; finance; microfinance; agency; Islamic finance; development; growth; regulation; business ethics; ESOP; stock options.

**Reference** to this paper should be made as follows: Ramady, M.A. and Kantarelis, D. (2009) 'Financial capital democratisation: recipes for growth and disaster', *Int. J. Society Systems Science*, Vol. 1, No. 4, pp.325–350.

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## 1 Introduction

The broadening of access to financial capital through traditional means (e.g., collateral) and non-traditional (e.g., group-lending or reputation alone), otherwise known as financial capital democratisation (FCD), has been receiving increasingly more attention, especially from those who are concerned about poverty, business start-ups, community development and even development of entire nations.

Some well-known and already implemented FCD schemes are: financial technology advances (mortgages, mutual funds, derivatives, high-yield bonds, securitisation, consumer and business credit cards, etc), microfinancing (non-collateralised loans to small but reputable groups of borrowers), the Community Reinvestment Act (CRA) in the USA (democratisation of decisions about the distribution of capital and inclusion of low-income and minority individuals), employee stock option plans (ESOPs) and stock options.

Historically, FCD (with the exception of traditional mortgages) is relatively young. In the words of Milken<sup>1</sup> (2000), a prominent financial innovator and proponent of FCD,

“...access to capital – the lifeblood of business – had always been restricted. In medieval times, it vested in royalty and the church. With the 19th-century revolution in manufacturing (mostly in the UK and the USA), capital access broadened to a small group of industrialists and their bankers. And even as late as the 1960s, capital was controlled by a few large financial institutions that doled it out to their privileged clientele, who invariably were male, white and ‘established.’ As one of the most highly regulated industries in the nation, the banks were encouraged to provide loans only to borrowers perceived as ‘safe’. In the view of large financial institutions and regulators, a company like Singer, the sewing machine company, seemed like a great place to invest. After all, Singer sported an ‘investment-grade’ rating based on a record of paying dividends for more than 100 years. Never mind that its primary customers –

women – were joining the workforce (and abandoning sewing) in droves. This bias toward the past, what I call financing in the rear-view mirror, served to deny capital to those who had great business ideas but no establishment credentials. Among its many victims were entrepreneurial minorities and women.”

Milken, as far back as the 1960s, envisioned financial technologies as a multiplier in prosperity efforts. According to him, financial technologies are ‘innovations that allocate financial resources efficiently, especially to those who ordinarily would not have access to it, but who can best use it to build companies, create jobs and solve long-standing social and economic problems’ (Milken, 2000). Such innovations include mutual funds, derivatives of currencies, stock market indexes, various lending and borrowing interest rates, securitised mortgages, securitised bank loans and collateralised loan and bond obligations. For more on such innovations see Emmons (1999) and Duca (2000).

In the last 30 years or so, FCD has been facilitating, at an increasing rate, access of all, individuals and firms of any size, to global capital markets. Individuals, directly or indirectly through their pension funds, are more invested in stocks and bonds today than ever before; and firms, especially new and non-established, are more able to raise funds through a variety of sources ranging from issuance of junk bonds to venture capital.

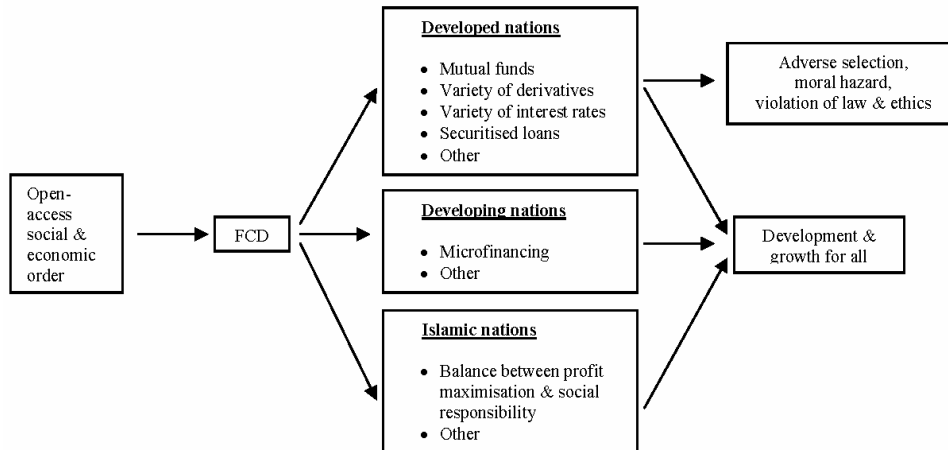
Especially benefited from FCD is the entrepreneur who, at any time and with little or even without collateral, may raise funds to pursue her ideas for improved and/or new products and markets. According to Sylla and Redux (2006, p.393), in his review of Rajan and Zingales (2004), FCD ended the tyranny of collateral (i.e., you can borrow provided you do not need to; otherwise, no) and connections (i.e., you can borrow provided I know and trust you; otherwise, no). As Sylla and Redux (2006, p.394) reports, Rajan and Zingales (2004) believe that the older view, expressed by Robinson (1952, p.86), ‘where enterprise leads finance follows’ has changed to ‘financial development leads economic growth’. As shown in Figure 1, similarly to Rajan and Zingales (2004), North et al. (2005) imply that an open-access social and economic order would cause FCD; as reported by Sylla and Redux (2006, p.403),

“...for most of recorded human history, political economy has been characterised by natural states in which political authorities gain the support of elites by protecting their property rights and limiting the access of non-elites in order to create rents for elites. The elites then return the favour by supporting friendly politicians and governments. In the North-Weingast-Wallis view, the limited-access order of the natural state has already been replaced (in today’s global economy) by an open-access social and economic order more conducive to development and growth.”

Figure 1 also points out how FCD is practiced around the world in developed, developing and Islamic nations; additionally, the figure highlights that although FCD has been contributing to development and growth in all nations, only in developed nations, as demonstrated by the current financial crisis, we have been witnessing unprecedented costs associated with adverse selection and moral hazard accompanied by violation of law and ethics.

Undoubtedly, FCD has been contributing to the well being of individuals and growth of nations all over the world. Consider Table 1, which reports only some measures that have affected by, or affect, FCD around the world. They draw a picture of accelerating growth of financial assets which, given our current financial crisis, we do not know how to deal with, either politically or institutionally.

**Figure 1** FCD around the world causes and implications



Our objective in this paper is to offer a critical review of various FCD systems by stressing their basic premises vis-à-vis strengths and weaknesses as well as positive and negative implications for economic agents and entire economies. The paper's contribution is pedagogical in nature and as such it may be helpful in efforts to better regulate local and global financial markets and in our quest to design incentive mechanisms for development and growth through market systems. More specifically, we review various FCD systems (at least those that we are aware of) as they relate to rich (Sections 2 to 5) and poor nations (Sections 6 and 7) by focusing on

- a financial technologies in conjunction with the current crisis in developed nations
- b a new theory which calls for acquisition of financial capital with the future earnings of financial capital applicable in developed nations
- c the CRA in the USA
- d employee stock option plans along with stock options as they apply to all nations
- e microfinancing as it applies to developing nations
- f Islamic financial concepts as they are practiced by, primarily, developing nations.

Table 1 FCD measures<sup>b</sup>

Measure	1950	1980	1985	1990	1993	2000	2002	2006	2007	2008	2013	2050
Per-capita global financial market capitalisation <sup>a</sup>	\$158					\$13,333						\$73,000
World's financial stock (bank deposits, private debt securities, government debt and equity shares)	\$10 trillion							\$167 trillion				
Foreign exchange reserves				\$990 billion				\$5 trillion		\$3.9 trillion		
Daily turnover in foreign exchange markets			\$200 billion									
International claims of banks				\$6 trillion					\$37 trillion			
Debt in relation to GDP										Brazil: 35% EU: 116% USA: 201% Japan: 419%		
Financial deepening (ratio of financial assets to GDP)				33 countries with FD greater than 1				72 countries with FD greater than 1 \$484 billion				
Capital flows from oil exporting countries							\$108 billion					
Foreign assets of oil exporting countries (at \$100 per barrel)									\$4.6 trillion		\$12.2 trillion (estimate)	
Financial assets in the USA (2008: 56% of the world's total) in relation to GDP		450%							1,000%			
Household financial liabilities in the USA in relation to personal disposable income					89%				139%			
Credit default swaps in the USA						\$900 billion				\$62 trillion		
Islamic finance		\$10 billion				\$200 billion				\$2 trillion		\$3 trillion

Source: <sup>a</sup>Marber (2005, Figure 1).  
<sup>b</sup>Gall (2008)

## 2 Financial technologies and the current crisis

Given the current problems in global financial markets, one may infer that despite its contributions FCD is still an undeveloped institution, far from perfect. Without a doubt, recent financial technology advancements, most notably, equity financing, subprime lending in real estate markets, combined with securitisation (mortgage backed securities), have caused the current financial crisis in the USA and other countries. Bad-risk mortgages (with a high probability of default) ended up, as assets, in the equity accounts of big investment banks in the USA and, from there, in the accounts of many foreign banks. As soon as the owners of bad-risk mortgaged assets defaulted, the leverage ratios of holding banks increased exponentially while their cash flow, necessary to pay short-term obligations, plummeted. Figure 2 is a synthesis of two diagrams; one with its origin in the 'southwest', measuring leverage against equity and the other with its origin in the 'northeast' measuring debt against bond rating. The arrow from A to B indicates the wrong direction that firms took because of equity deterioration, rising debt and falling bond rating. (Leverage ratios, reported in the beginning of 2008, of some firms are displayed on the bottom of Figure 2.)

It appears that the chief wrongdoers of the present crisis are the financial agents (mortgage companies and brokers, mortgage issuing banks and investment banks) who invented securitisation of mortgage loans and also the subprime mortgage loan.

Securitisation of mortgage loans gave rise to a frenzy of derivatives (agreements to shift risk among agents in exchange for a fee) subject to no regulation what so ever; fed by fees on top of fees it accelerated the transferring of risk further and further down the line from the originating bank to a series of investors in the USA and abroad. Brokers earned fees from banks for arranging subprime mortgages without needing to check the borrower's income or employment and hired appraisers who often inflated the value of a house because commissions rose with the value of the mortgage. Securitisation spread to commercial paper issuance, to credit card receivables and other loan categories.

Lack of regulation gave agents the incentive to sign as many loans as possible and for as high a principal as possible: the more loans the more fees selling agents would collect from buying agents and the higher the principal the higher such fees would be. Obviously, subprime lending increased both the speed of giving out loans and their principal; and the existence of buyers took away the sellers' incentives to secure good-risk mortgages. Who could have thought that selling and buying agents would not self-regulate each other against bad-risk mortgages? Alas, that is exactly what they did which in turn gave rise to the real estate bubble followed by its bursting with massive defaulting, foreclosures and the collapse of financial markets.

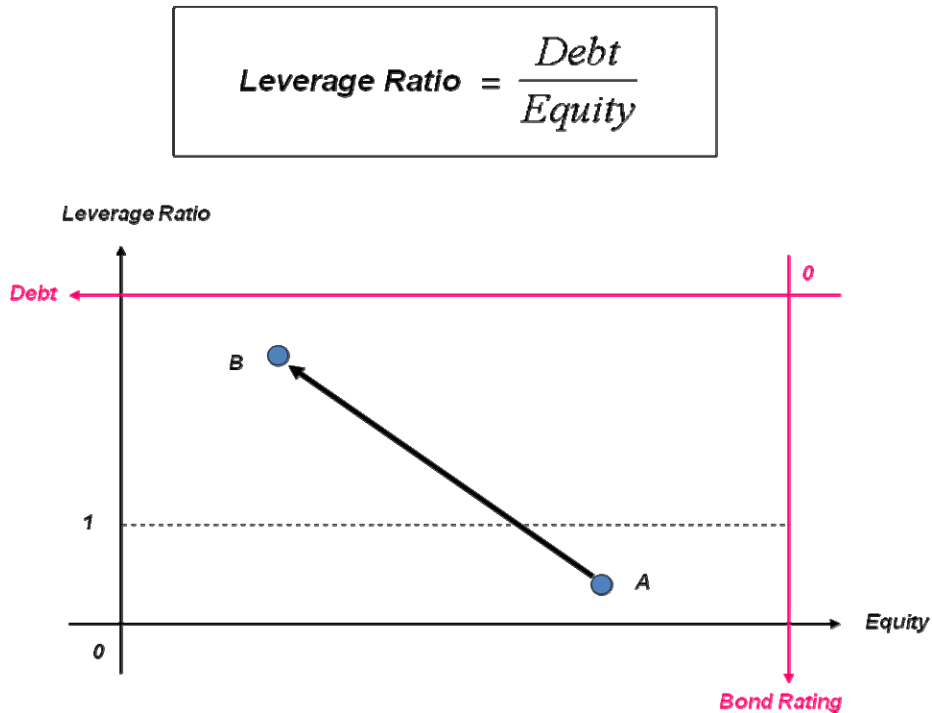
In an attempt to prevent worsening in the USA and global financial markets, initially the US Treasury Department along with the US Federal Reserve Board and later on the US Senate came to the 'rescue'; their actions triggered, primarily, the following:

- 1 forced selling (certain firms were bought by others at very low stock prices)
- 2 transformation (from investment banks to bank holding companies), failure (Lehman Brothers) and passing by the US Senate of the Emergency Economic Stabilisation Act of 2008 (US Government buyout, in the amount of \$0.7 trillion, of risky mortgages and other assets from troubled holding companies.)

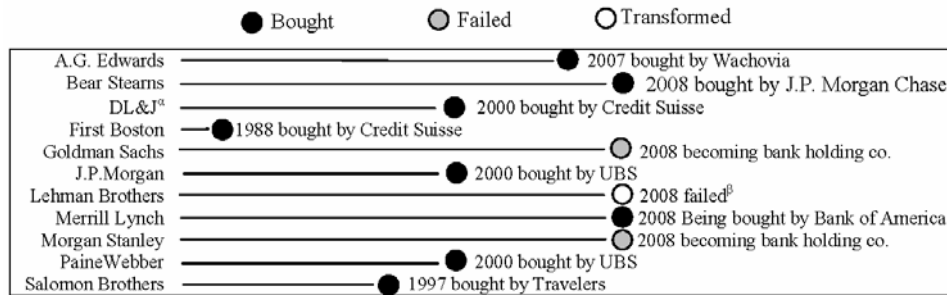
See Figure 3 for timelines and Appendix 1 for a summary of the Act.

Additionally, in an effort to avoid ‘credit crunch’, recession and short-term investor losses, the US Government (and many other governments around the world along with their central banks) decided to provide liquidity by directly lending to financial firms and by purchasing shares in financial institutions. In a latest twist to resolving the financial crisis, the US Treasury Secretary has announced that the planned purchase of the so called ‘toxic assets’ would no longer be carried out but that the US Treasury would instead purchase shares in many more US financial institutions in an effort to shore up their capital base.

**Figure 2** Leverage ratios (early 2008) (see online version for colours)



<i>Firm</i>	<i>Leverage ratio (beginning of 2008)</i>
Bear Stearns	31:1
Lehman Brothers	34:1
Fannie Mae/Freddie Mac	45:1
Merrill Lynch	26:1
Goldman Sachs	31:1
Morgan Stanley	20:1

**Figure 3** End of the line forced selling, transformation and failure

Notes: <sup>a</sup> DL&J = Donaldson, Lufkin and Jenrette

<sup>β</sup> Brokerage operations bought by Barclays

Source: (news reports) Wall Street Journal, September 23, 2008, P.A6

### 2.1 The case of AIG

Agreements to shift risk among agents in exchange for a fee (what we called above ‘derivatives’) without effective regulatory supervision, or without an incentive-efficient mechanism, failed to produce good risks; instead, they generated an environment conducive to adverse selection totally dry of incentive-compatible mechanisms. In the words of Alan Greenspan, quoted by Gall (2008, p.7),

“(t)here were far more failures here than I expected. I’ve been chagrined at how badly some of the judgments of very sophisticated investors have been with respect to risks, because my fundamental view is that counter-party surveillance is critical for global finance. There are no realistic alternatives. Bank loan officers, in my experience, know far more about the risks and workings of their counter parties than do bank regulators.”

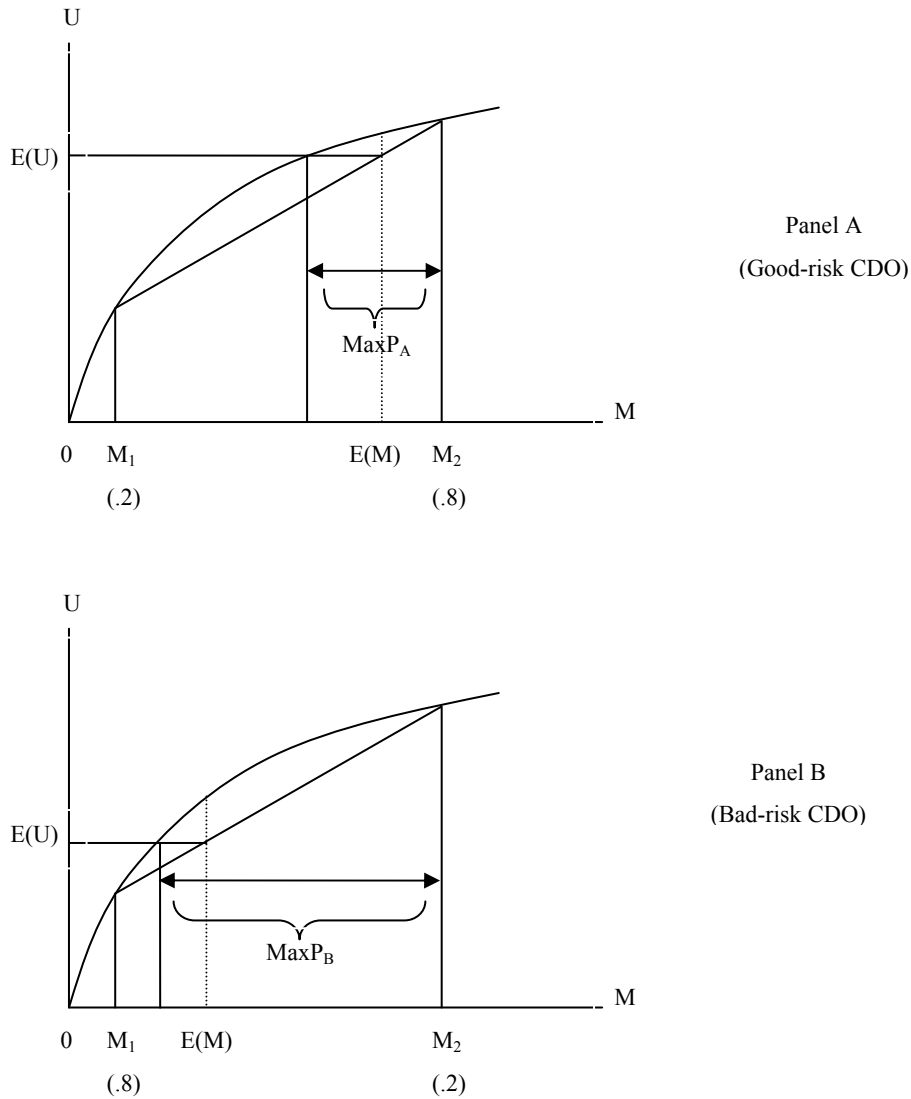
‘Counter-party surveillance’ amounted to, primarily, the purchasing of additional default insurance by the acquiring bank at the time of asset (in most cases mortgage) acquisition. Such default insurance contracts, known as ‘credit default swaps’ (CDS), were offered mostly by American International Group (AIG) on packages of debt known as ‘collateralised debt obligations’ (CDO) – pools of loans sliced into tranches and sold to investors based on the credit quality of the underlying securities. Believing that it would never have to pay claims, the immensely reputable and highly rated AIG decided to start selling, through their London operation, CDS contracts at very low premiums for a four or five year horizon, to any CDO holder (mostly banks) that would knock on their door. Although, the low premiums were a bargain for good risks they were also a bargain for bad risks, causing AIG to adversely select its contracts.

In an effort to shed more light, consider Figure 4 which plots hypothetical utility functions of two risk-averse CDO holders A and B described, respectively, in Panels A and B. Assume that A’s and B’s utility functions are identical,  $U = M^{0.5}$ , where  $M$  = monetary value of CDO and that B is riskier than A. Let A’s and B’s probability distributions be as follows (where  $M_1 < M_2$ ):



$M$	$A$ 's probabilities	$B$ 's probabilities
$M_1$	0.2	0.8
$M_2$	0.8	0.2

**Figure 4** Insurance for bad-risk CDO vs. good-risk CDO



A and B purchase coverage  $(M_2 - M_1)$  each but the maximum premium that A would be willing to pay is lower than the maximum premium that B would be willing to pay or,  $MaxP_A < MaxP_B$ . If the insurer knows the above probabilities and reservation prices it will be able to price-discriminate by charging B a higher premium than A. Unfortunately, the insurer may not know such probabilities (or even have good estimated values about them) and therefore it runs the risk of charging a price low enough for the bad-risk but

too high for the good-risk thus attracting only the 'lemon'. The insurer in other words commits adverse selection for it adversely selects to insure the bad-risk instead of the good.

Does the current financial crisis offer any support for the above theoretical possibility? One may infer that AIG had insured investors at very low premiums, enabling both bad-risk CDO and good-risk CDO holders to purchase coverage. Thus, when, due to the real estate market collapse, the default rate of bad-risk mortgages increased, the firm quickly ran out of cash to pay for the claims filed by the 'lemons'; in turn, to help the firm deal with its liquidity crisis, the US Government stepped in by offering a bailout loan in the amount of \$122.8 billion. Hence, because of overconfidence (or deliberate opportunistic action) AIG brought to itself this severe adverse selection problem and in the eyes of many, a moral hazard problem since its clients were not required to absorb a proportion of claims (there were no deductibles or other risk-mitigating provisions in the CDS.)

Obviously, the system of financial capital democratisation as applied in developed economics failed rather miserably due to severe problems in association with adverse selection and moral hazard triggered primarily by our mistaken belief that financial institutions will self-regulate each other; who could have thought that banks would trade with each other bad risk for a fee, at an artificially high principal, which in turn caused massive defaulting and the collapse in the real estate markets?<sup>2</sup>

### **3 Acquisition of financial capital with its future earnings**

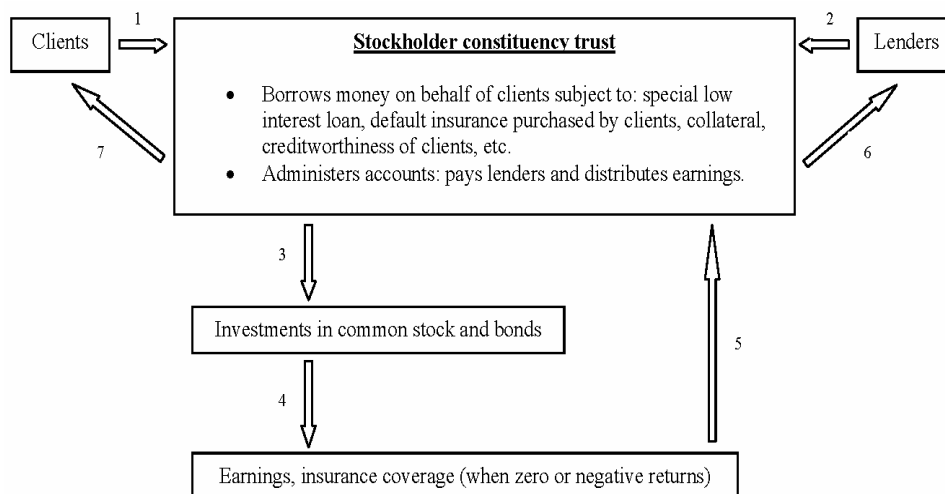
A less well-known proposal, labelled 'binary economics' by Robert Ashford, calls for acquisition of financial capital (a portfolio of financial securities) with the future earnings of financial capital subject to, mainly, a specially designed loan (with the purchased securities serving as collateral) and a specially designed insurance policy to cover loan payments when securities' returns are insufficient. Upon repayment of the loan, the portfolio of acquired securities becomes property of the investor who may manage it as he or she sees fit.

Building on the work of Kelso and Hetter (1986), several researchers, led by Robert Ashford, have advanced the idea of acquiring financial capital with the future earnings of financial capital; see Ashford (1998), Ashford and Shakespeare (1999), Ashford and Kantarelis (2008). Although the idea has never been implemented it is based on plausible assumptions and as such it shows promise for wealth creation and growth for all, especially in developed capital-intensive economies with well functioning financial markets.

As per our interpretation the idea may be explained as follows: suppose you want to buy a well-diversified portfolio of assets (e.g., a portfolio of shares in reputable mutual funds) but you do not have any savings. You may use your credit card to raise the needed funds (and pay a very high rate) or, alternatively borrow as you borrow to purchase a house. In this case, you would have to promise the entire portfolio of assets to a lender as security for a loan to purchase the entire portfolio of assets. In other words sign for a special loan (especially legislated for this purpose), which, like the traditional mortgage, will require down payment, default insurance, capital diffusion reinsurance, good credit history, perhaps additional collateral and other. In turn, the portfolio earnings are used to

help pay back the loan and upon repayment the portfolio becomes the property of the investor.

**Figure 5** Acquisition of capital with the future earnings of capital



To minimise transaction costs, the founders recommend that all accounts are held in a stockholder constituency trust (a typical business function of a bank) which will be compensated to administer the accounts, borrow and pay loan instalments on behalf of clients and, upon repayment, distribute earnings to the clients. More specifically, as shown in Figure 5, going from one to seven, clients place applications in the Trust for acquisition of financial capital; the trust, upon screening and approving (based on credit history, ability to pay, default insurance coverage, additional collateral and other) asks lenders for money or it supplies it itself.

In turn, the money is invested and the earnings or the insurance coverage pay back the loan. After the loan is paid off, the portfolio becomes 100% the client's property and thereon its earnings are periodically returned to the owner or left to accumulate in the trust. Naturally, the objective of the Trust would be to maximise the stream of financial capital income for its clients appropriately discounted and deflated, or:

$$\text{Maximise } PV_{FCI} = PV_B - PV_C = \sum [b_t / (1+r)^t] - \sum [C_t / (1+r)^t]$$

where

PV = present value

FCI = B - C

FCI = financial capital income

B = earnings + insurance coverage

[Insurance coverage may vary from zero (when earnings are positive) to a number greater than zero (when earnings are negative)]

C = loan cost + insurance cost + service fees + taxes

$$b_t = B_t / (1+p)^t$$

$$c_t = C_t / (1+p)^t$$

$p$  = inflation rate

$r$  = discount factor

The proponents of the theory observe (with data supporting their observation) that macroeconomies in developed nations operate below their capacity levels because there is not enough income around for consumption. Hence, they maintain that additional income through the broadening of financial capital ownership (as described above) will add to a labourer's income which in turn will cause consumption to increase and production to move closer to its capacity level. They add that there would be no fear for inflation as long as consumption does not cause production to exceed its capacity level.

Would a portfolio in the account of the client perform adequately to cover all costs? Of course it depends on how well diversified the portfolio is as well as on many unpredictable random events, ranging from wars and financial crises, to acts of God and policy mistakes. Kelso and Hetter (1986) estimate that the annualised percentage real cost of borrowing to the constituency would be approximately 5% per year (2% bank service charge, 2% for the capital credit insurance and 1.25% for the central banks administrative costs.) According to the 2007 Global Investment Returns Yearbook – GIRY (Finfacts (2005) – Ireland's Business and Finance Portal), 'the best performing equity markets over the very long term are Sweden and Australia, with annualised percentage real returns since 1900 (up to 2006) of 7.9% and 7.8%, respectively, compared to a world average of 5.8%.' Thus, it appears that a well-diversified global portfolio would more than cover the Kelso-Hetter cost estimate but, are Kelso and Hetter correct?

#### **4 The Community Reinvestment Act (CRA) in the USA**

Recognising the 'vital interconnection between successful community and housing development and local private investment activities' (Marsico, 2005 p.15), the US Congress passed, in 1977, the CRA. The CRA was designed to support coordination between private initiatives regarding investing, federal government assistance and insurance in order to boost the viability of deteriorating urban communities. More specifically, the CRA was passed because there was evidence that lenders were engaged in two interrelated opportunistic practices, namely redlining and capital export. According to Marsico (2005, p.12),

“(r)edlining is the practice by which a bank draws a red line around a neighbourhood on a map and refuses to lend there because of perceived credit risks associated with the neighborhood. Capital export is the practice by which a bank exports the deposits of one neighbourhood's residents to other communities and makes loans in those other communities despite local lending opportunities.”

According to the CRA, banks have to

- a meet community credit needs
- b satisfy performance criteria

- c get rated based on a rating system
- d subject themselves to public scrutiny (CRA records are made public)
- e improve their record prior to applying for expansion (e.g., applications for mergers, etc.).

Because banks desire to protect and improve their reputations, they have the incentive to eagerly satisfy community credit needs thus injecting financial capital into needed areas. But, despite some success in democratising capital, the CRA has failed in terms of not enabling the majority of low-income families and individuals to participate in the banking system and, simultaneously, in terms of contributing to the harmful accumulation of subprime lending. In general, credit allocation is undesirable because it may excessively interfere with free markets and force banks to make bad loans. Additionally, the CRA may cause even more despair in needed areas if, due to excessive regulation and bureaucracy, banks decide to close office and move elsewhere. As US Senator Schmitt states [quotation found in Marscio (2005, p.21)],

“(t)he requirement that financial regulatory agencies allocate credit under this or any scheme can have adverse effects. By forcing financial institutions to make loans of dubious quality, the Congress would easily convince financial institutions to close branches in decaying neighbourhoods and thus, lead to further economic and social decline in these areas.”

## **5 Home grants ESOP and stock options**

In addition to the above developments, financial democratisation schemes have been practiced in Australia (provision of government grants for first-time home buyers), in the workplace (employee stock option plans – ESOP and stock options.)

### *5.1 First-time home buyers in Australia*

Australia makes available grants for first-time home buyers who may buy a brand new home or a used one. Such grants cause demand for housing to increase acting as market stabilisers in today’s real estate collapsing markets with short-term benefits to all. Obviously, grants for brand new homes would stimulate the economy more than grants for used homes.

These grants, needless to say, are subsidies funded by taxed money: homebuyers, upon purchasing their homes, pay a tax called stamp duty. First time buyers, especially of lower priced properties, may get a discount on stamp duty or they do not pay at all; the tax rate depends, positively, on the price of the house and each Australian state levies stamp duty at different rates. (For more on first-time homebuyers in Australia see Appendix 2 and references therein.)

### *5.2 Employee stock ownership plan (ESOP)*

An ESOP is a benefit plan in the work place which makes the employee of a company owner of stock in that company. According to the ESOP Association (2008),

“several features make ESOPs unique as compared to other employee benefit plans. First, only an ESOP is required by law to invest primarily in the securities of the sponsoring employer. Second, an ESOP is unique among qualified employee benefit plans in its ability to borrow money. As a result, ‘leveraged ESOPs’ may be used as a technique of corporate finance.”

ESOPs, as profit-sharing tools, minimise moral hazard in the work place and improve morale and wealth for all as long as the company does well. Additionally, an ESOP exposes an employee to diversification risk and other risks that relate to managerial misconduct (i.e., Enron) and to misguided investing since most ESOPs are set for retirement. Moreover, the existence of an ESOP may add to a firm’s democratic bureaucracy causing it to become a slow decision-maker and hence a low profit entity. (For more on ESOPs see Appendix 2 and references therein.)

### *5.3 Employee stock option*

A call option on the common stock of a company, issued as a form of non-cash compensation to an employee, is called an employee stock option. The owner employee is a double stakeholder: stock holder and employee. As with ESOPs, if the firm’s stock price rises, holders of options experience gains. This gives employees an incentive not to commit moral hazard, which in turn improves the firm’s stock price and the well being of all. Stock options are offered to higher-level management and to outsiders such lawyers, promoters and various suppliers. (For more on employee stock options see Appendix 2 and references therein.)

## **6 Financial capital democratisation in the world of the poor microfinancing**

Descriptive measures on the condition of the poor around the world generate a picture of misery. According to Risse (2005, p.349), the globe’s population, through time is becoming worse off:

- 20% live on less than \$1 per day.
- 50% live on less than \$2 per day.
- 25% is illiterate.
- The infant mortality rate for 2.5 billion people is over 100 per 1,000 births (compared to 6 per 1,000 in high-income countries).
- The ratio of per capita income between global rich and poor was 3 to 1 in 1820, 60 to 1 in 1960 and 74 to 1 in 1997.

Risse (2005, p.366) also describes a world suffering from ‘radical inequality’ which he defines as follows:

“(1) The worst off are very badly off in absolute terms; (2) They are also very badly off in relative terms, much worse off than others; (3) The inequality is impervious: it is difficult or impossible for the worse-off substantially to improve their lot and most of the better-off never experience life at the bottom and have no vivid idea of what it is like to live in that way; (4) The inequality is pervasive: it concerns not merely some aspects of life, but most aspects of life or all; (5) The inequality is avoidable: the better-off can improve the circumstances without becoming badly off themselves.”

Against this picture of misery though, there is a little picture of hope drawn up, as we speak, by microfinance practitioners (banks and other institutions) all over the world, currently alleviating economic problems for over 100 million people. As Morduch (1999, p.1569) very eloquently writes,

“(a)mid the dispiriting news, excitement is building about a set of unusual financial institutions prospering in distant corners of the world – especially Bolivia, Bangladesh and Indonesia. The hope is that much poverty can be alleviated – and that economic and social structures can be transformed fundamentally – by providing financial services to low-income households. These institutions, united under the banner of microfinance, share a commitment to serving clients that have been excluded from the formal banking sector. Almost all of the borrowers do so to finance self-employment activities and many start by taking loans as small as \$75, repaid over several months or a year. Only a few programs require borrowers to put up collateral, enabling would-be entrepreneurs with few assets to escape positions as poorly paid wage laborers or farmers.”

An example of a microfinance bank is the Grameen Bank in Bangladesh established by Muhammad Yunus (Peace Nobel Laureate 2006) to help desperately poor people. The bank seeks the poorest borrowers and it requires no collateral for small loans. The bank rests on the strength of its borrowers, mostly women, who are required to join the bank in self-formed groups of five. The group members provide one another with peer support in the form of mutual assistance and advice (the deal does more for each than each could do on her own.) Additionally, the group borrowers allow for peer discipline by evaluating business viability and ensuring repayment. If one member fails to repay a loan, all members risk having their line of credit suspended or reduced which keeps opportunism – adverse selection and moral hazard - at a minimum.

The business model of a microfinancing institution is based on an incentive-compatible coordination plan built around incentive constraints to curtail dishonesty and disobedience. As explained by Myerson (2008, p.588) the problem of getting borrowers to share information truthfully is called adverse selection whereas the problem of getting borrowers to act dutifully to a coordination plan is called moral hazard.

### 6.1 *Microfinancing and adverse selection*

Consider risk-neutral individual investors, each able to realise income  $Y$  as a member of the labour force. Group the investors into two type groups, safe ( $s$ ) and risky ( $k$ ), where risky fail more often than safe with probabilities of success  $p_s$  and  $p_k$ . Letting  $R$  = return and  $E(R)$  = expected return, each type can undertake a business project, which requires one unit of capital, with expected returns,

$$E(R)_s = p_s R_s$$

and

$$E(R)_k = p_k R_k$$

where  $p_s > p_k$  and, when successful,  $R_s < R_k$ .

For simplicity, let

$$p_s R_s = p_k R_k = E(R).$$

Assume now that the investors may borrow money for their respective business projects at a certain interest rate and that the loan does not require any collateral what so ever. Naturally, the lending institution will charge a higher interest rate for the risky types if it knows who they are and/or if it knows their probabilities of success; but, because it does not, it charges a uniform rate  $r$ . Therefore, each type will borrow if their expected net returns are as follows:

$$[E(R) - rp_s] > Y$$

and

$$[E(R) - rp_k] > Y.$$

But, because  $[E(R) - rp_s] < [E(R) - rp_k]$ , depending on the value of  $Y$ , only the risky types may find it advantageous to borrow money, in which case the lending institutions adversely select their borrowers; in other words they end up with the 'lemons'. Hence, adverse selection may occur when  $[E(R) - rp_s] < Y < [E(R) - rp_k]$ . For example, if  $E(R) = 10$ ,  $r = 0.2$ ,  $p_s = 0.8$ ,  $p_k = 0.2$  and  $Y = 9.90$ , then  $[E(R) - rp_s] = 9.84 < 9.90$  while  $[E(R) - rp_k] = 9.96 > 9.90$ ; hence, only the risky types would apply for loans.

## 6.2 *Group-lending and the mitigation of adverse selection problems*

The above analysis implies that adverse selection will cause lenders to drop out or, at best, to charge prohibitively high rates with adverse consequences in terms of efficiency gains as they relate to economic development and growth. Obviously, lenders would have more incentive to service financial markets if in addition to loaning to risky types they could loan to safe types. Ghatak (1999) and Ghatak and Guinnane (1999), in their seminal papers, show how group-lending may come to the rescue; according to them, the lender (who like above does not know who the borrowing types are or their probabilities of success) may ask borrowers to apply in groups, subject to the following group-lending conditions (let groups consist of only two individuals):

- Without collateral, a group of two individuals apply for loans.
- Each individual in the group invests independently (each individual starts and manages her own business).
- Each borrower in the group pays nothing if her project fails.
- Each borrower pays a success fee  $m$  if her project succeeds.
- Each successful borrower pays a joint-liability fee  $F$  if the group mate fails.

Subject to the above conditions the following possible groups may form: safe with risky, safe with safe and risky with risky. Since Morduch (1999, p.158) has shown that 'there is no mutually beneficial way for risky and safe types to group together' we proceed with



groups characterised by common types: safe team up with safe and risky team up with risky.

Hence, the net expected returns of the safe/safe partnership would be

$$(\text{Net expected return})_s = E(R) - [m + F(1 - p_s)]p_s$$

where  $[m + F(1 - p_s)]p_s = (\text{Price of loan})_s$ , and the net expected returns of the risky/risky partnership would be

$$(\text{Net expected return})_r = E(R) - [m + F(1 - p_k)]p_k$$

where  $[m + F(1 - p_k)]p_k = (\text{Price of loan})_k$ .

The group-contract does not allow the lender to charge different fees to different types (the fees of  $m$  and  $F$  are common); but if  $m$  and  $F$  are selected appropriately price discrimination would be possible. For example,

if  $p_s=0.9$ ,  $p_r=0.8$  and  $F > 1.4m$ , then

$(\text{Price of loan})_s < (\text{Price of loan})_k$  and

$(\text{Net expected return})_s > (\text{Net expected return})_k$ .

Thus, as the above example demonstrates, with suitable  $m$  and  $F$ , a group-lending contract can enable the lender to effectively price discriminate so that the likelihood of safe entrants increases. With safe borrowers among lenders' clients, rates of repayments would rise and borrowing rates would fall.

### 6.3 Group-lending and the mitigation of moral hazard

After contracts are signed borrowers may decide to act disobediently (in other words, decide to take risky activities instead of safe) thus committing moral hazard with adverse consequences for lenders' profits. As in Stiglitz (1990) and Besley and Coate (1995), assume that borrowers are risk-averse and that their utility functions are  $U(x)$ , where  $x = R_i - (m + F)$ ,  $i = s, k$ . With groups and contracts as above, each team mate may choose to undertake the safe activity with expected utility

$$E(U)_s = p_s^2 U(R_s - m) + p_s(1 - p_s) U(R_s - m - F),$$

or the risky activity with expected utility

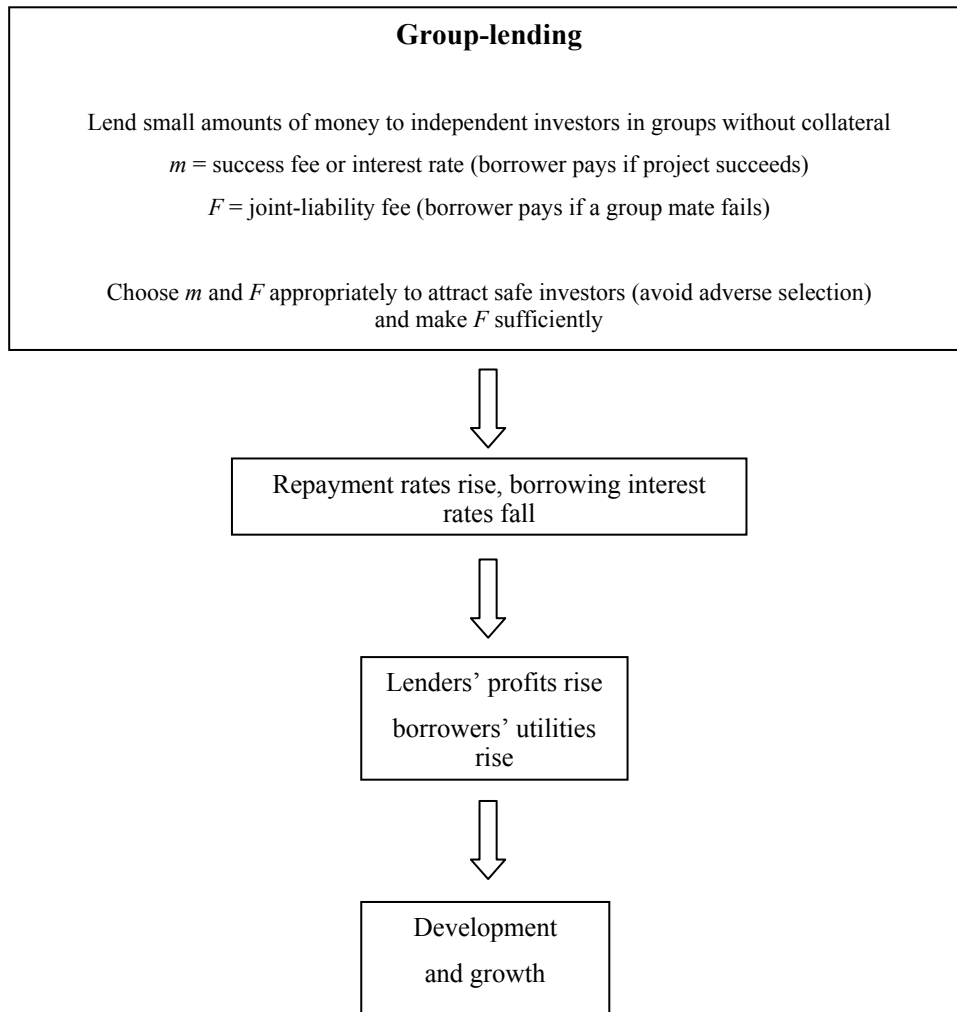
$$E(U)_k = p_k^2 U(R_k - m) + p_k(1 - p_k) U(R_k - m - F).$$

Obviously, borrowers would always choose to undertake safe instead of risky activities if the joint-liability fee  $F$  in the group-lending contract is set high enough so that  $E(U)_s > E(U)_k$ . (Naturally, to offset the cost burden to its clients the lender may lower  $m$ .) A high joint-liability  $F$  will induce groups to self-regulate (see that contracts are enforced via mutual monitoring) and thus minimise costs associated with moral hazard. In turn moral hazard avoidance will contribute to lower borrowing rates, to higher repayment rates and of course to higher levels of expected utility.

Group-lending is nothing more than an incentive-compatible coordination plan (or mechanism) which satisfies certain incentive constraints for the avoidance of adverse selection and moral hazard. (See Figure 6 for a summary of conditions and results.) It hinges on appropriately selecting an interest rate and a joint-liability fee so that lending

firms do not exclude safe or good risk borrowers; the inclusion of such borrowers implies that repayments would rise (causing lenders' profits to increase) and that average market borrowing rates would fall (causing lenders to sell more loans and experience even higher profits<sup>3</sup>). Undoubtedly, the mechanism is 'win-win' since it offers incentives to borrowers to succeed and to experience higher utility levels, with positive implications for development and growth.

**Figure 6** Group-lending as an incentive-compatible coordination plan



Banks, upon satisfactory repayment of small loans, may lend larger amounts especially in low mobility areas where it is less likely for defaulters to escape. This perhaps explains why most clients are women. As explained by Morduch (1999, p.1583) 'the lower mobility of women may be a plus where ex post moral hazard is a problem (i.e., where there is a fear that clients will 'take the money and run').' Additionally, as reported by Rahman (1998), women are more sensitive to verbal hostility by fellow teammates and bank employees; they cannot shake off failure as easily as men.

Microfinancing is an excellent example of mechanism design and it enables us to better understand issues around poverty in association with markets and new institutions. In spite of its elegance as a mechanism to minimise adverse selection and moral hazard, unfortunately, it is not ‘the’ solution to poverty. First of all, those who receive the micro-loans, primarily, help themselves (they supplement their incomes by starting their own small business enterprises) without hiring anybody else. As stressed by Morduch (1999, pp.1609–1610) ‘All else the same it remains far more costly to lend small amounts of money to many people than to lend large amounts to a few. The best evidence to date suggests that making a real dent in poverty rates will require increasing overall levels of economic growth and employment generation.’

## **7 Ethical investments Islamic finance and capital democratisation**

The recent global financial crisis has generated some interest in the workings of Islamic finance as one form of ethical based FCD, given that no Islamic financial institution went bankrupt or was taken over by state intervention. Stakeholders of Islamic banks view the industry much more favourably by the social and ethical goals that it serves, rather than the mechanics of its operation. One of the most important reflections of their attitude is that social-welfare factors are evidenced as more important objectives than commercial factors in their perceptions towards Islamic banking. This result implies that Islamic banks must ensure that all of their transactions are Sharia’h-compliant not only on their forms and legal technicalities but also more importantly the socio-economic substance which is premised on the objectives outlined by Shariah. Table 2 below examines the major differences between Islamic banking and conventional banking operations.

Islamic financial institutions focus on profit maximisation and simultaneously play a role in addressing socio-economic issues such as poverty reduction and improvements in important aspects of human welfare (education, illiteracy, reducing child mortality, youth insecurity and restlessness, etc) by efficiently channelling financial resources towards productive opportunities, hence enhancing production, investment and trade activities.

Second, banks cannot depend only on financial performance to survive in this ever-changing scenario of global competition, but owe a social responsibility to the various stakeholders in which they exist. Based on the positive results on expectations and perceptions of diverse stakeholder groups towards the social-welfare dimensions of Islamic banking practice, managers need to be convinced that social-welfare and profit maximisation objectives need not be conflicting goals. Instead, commitment towards various social-welfare initiatives and programs could be used as a strategic marketing tool to enhance reputation and secure stakeholders’ allegiance, which is beneficial and profitable for the business in the long run.

Economic history can also provide us with important insight about democracy and economic development. Consider that both the great empires of the Mediterranean, first the Byzantine and then the Ottoman, granted capitulations to the small, quasi-democratic city-states of Italy, primarily Genoa and Venice. Why should powerful empires grant trade and fiscal privileges to small city-states, indeed, what made these small entities economically so powerful? The answer lies in the way these small entities were governed. In order to survive the fierce inter-state rivalry, their princes borrowed from the merchants and in return were obliged to listen to their grievances. Thus, these city-states became quasi-democratic and were primarily governed by merchant elites. So,

rulers in these cities became sensitive to the needs of the merchants and passed laws that fulfilled their needs. We might wonder at this point, what exactly do the merchants want? Surely, they would want secure property rights, low taxes, economic freedom and minimum state interference in business. The point is, when these conditions are fulfilled and the institutions that the merchants need are established by the mercantile parliaments, economic growth occurs. Furthermore, these arguments are not limited to the distant past; they are just as relevant for today. This is evidenced by the achievements of Singapore and Hong Kong during the twentieth century.

**Table 2** Fundamental distinctions between Islamic and conventional banking

<i>Islamic banks</i>	<i>Conventional banks</i>
Functions and operations are guided by sources of Sharia'h (Islamic Divine Law) namely the Quran and the Sunnah (traditions of the Prophet Muhammad)	Functions and operations are guided by secular principles and are not based on any religious doctrines and values.
Institutions that aim at balancing between profit-maximisation doctrine and social responsibility	Institutions that emphasise profit maximisation.
Financing instruments are based on either asset-backed trading contract or equity financing with risk sharing.	Financing instruments are based on interest-bearing mechanism.
Deposits are not interest-oriented but profit-loss sharing oriented whereby investors' principal repayment is not guaranteed but entitled to a predetermined share of actual profit realised by the business.	Deposits are interest-oriented and the investor is assured of a pre-determined rate of interest with a guaranteed principal repayment.
No penalty on defaulters. However, some Muslim countries allow charging a small percentage of late payment penalty as a deterrent but the amount need to be channelled to charity and not treated as part of business income.	Normally charge compounded rate of interest in case of default.
Islamic banks are prohibited from participating in economic activities which are unethical and prohibited by Sharia'h such as businesses involving alcohol, prostitution, pork, environmental pollution, etc.	There are no such restrictions for conventional banks.
Islamic banks need to do charity by paying zakah (compulsory religious levy) out of their income.	There are no such charity requirements.

Islam favours merchants, property rights, free trade and market economy. Muhammed al-Shaybani, Goitein, Udovitch, Rodinson, indeed, many great scholars of Islam, whether Muslim, Christian or Jewish, agree on these points (Bulac, 2002; Udovitch, 1970; Rodinson, 1974). Muslims seemed to have discovered capitalism about a millennium before Adam Smith and that there was a highly dynamic and successful Islamic capitalism. Western capitalism evolved from this original Islamic capitalism some 600 years later by borrowing its institutions (Cizakca, 2005, 2006) and just like its Islamic precedent, it too was shaped by a strict usury prohibition (Munro, 2007). Thus, the two capitalisms have common origins both philosophically and institutionally. The

two systems began to diverge during the 18th century under the influence of the European enlightenment and positivism. Post-18th century European capitalism abandoned its medieval concerns about morality and ethics and began to differ therefore from its Islamic predecessor, which maintained its moral values. The cycle seems to have come back full circle with the financial crises of 2008 when safeguarding the small investor became a major concern to all governments.

An economic system that favours merchants, property rights, free trade and market economy is generally known as capitalist and research has indicated that Islamic capitalism precedes the European one by at least six centuries. The West learned about and then borrowed this economic system from the Muslims, (Cizacka, 2006). To be sure, these two capitalisms were not identical and while using the term we should be aware of these differences. To appreciate these, we need to go to the details.

Islamic capitalism prohibited usury but allowed free trade, legitimate profit and capital accumulation. It also protected property rights (Hifz al-Mal). But it also warned wealthy Muslims that they would have to answer the following questions in the day of judgment: How did you earn your capital?; and how did you spend it?

Provided that the wealth is earned through halal or untainted means and spent on one's family's needs and for the good of the society, the Shari'ah approves of capital accumulation. Consequently, accumulation of capital, according to al-Ghazali, becomes a form of worship (Orman, 2002, p.79). In short, Islamic capitalism allows accumulation of capital subject to ethical and voluntary self-controls and redistribution of wealth. Zakah (Islamic alms or tax) and awqaf (Islamic charitable foundations) are the institutions through which Muslims distribute their capital voluntarily (Chapra, 1992). It was thanks to this unique and ethical capitalism, at least six hundred years before Western capitalism, that the Muslims were able to link the Mediterranean and the Indian Ocean world-economies. Moreover, they successfully maintained this linkage for a millennium. Indeed the Muslim domination of the Indian Ocean trade was challenged not so much by the Portuguese during the 16th century, but by the Dutch and the English during the 17th. The Portuguese domination was effectively prevented by an alliance of the Ottoman, Gujerati and Achenese sultanates.

Moreover, there was a significant link between the much earlier Islamic capitalism and the later Western one. The link between Islamic capitalism and Western capitalism was provided by institutional borrowing. The West borrowed from the Islamic world, partnership techniques such as profit and loss sharing; combination of the capital of a multitude of capitalists and the transfer of this capital to the agent; the shares, ashum; cash transfer techniques, hawala and checks, sakk; substitution of barter by money; and, of course, the awqaf without which, the formation of human capital would have been impossible (Cizacka, 2005, 2006).

To the extent that income per capita indicates the success of a country, the most successful countries are democratic, capitalist countries enjoying freedoms of thought, worship and entrepreneurship. Islam neither objects to nor impedes democracy. On the contrary, based upon the Sunnah (teachings) of the Prophet Mohammed and interest prohibition and incentives for morally guided market economies, it can be deduced that a cornerstone for FCD can be traced to Islamic finance.

## 8 Summary and conclusions

Obviously, the system of financial capital democratisation (the broadening of access to financial capital) as applied in developed economies failed rather miserably due to severe problems in association with adverse selection and moral hazard triggered primarily by our mistaken belief that financial institutions will self-regulate each other. A new theory that calls for the acquisition of financial capital (a portfolio of financial securities) with the future earnings of financial capital subject to various restrictions, although it has never been implemented, is based on plausible assumptions and as such it shows promise for wealth creation and growth for all, especially in developed capital-intensive economies with well functioning financial markets.

The CRA in the USA passed by Congress in 1977 to minimise or eliminate opportunistic practice by lenders, namely redlining and capital export. According to the Act, banks have to

- a meet community credit needs
- b satisfy performance criteria
- c get rated based on a rating system
- d subject themselves to public scrutiny via publicly available records
- e improve their record prior to applying for expansion (e.g., applications for mergers, etc.).

The main criticism against the Act is that it encourages bad loans in light of which banks have the incentive to exit from the local community (or close down) thus leaving the community worse off.

Financial capital democratisation – with some success – is practiced in Australia (grants for first-time home buyers) and in the workplace (with the availability of ESOPs and stock options.) Finally, microfinancing, although an excellent example of mechanism design, which enables us to better understand issues around poverty in association with markets and new institutions, is not ‘the’ solution to poverty. It appears that it is ‘far more costly to lend small amounts of money to many people than to lend large amounts to a few’ Morduch (1999, p.1610). Perhaps it would be better for the poor nations to attempt to increase their overall levels of growth and generate more employment.

Amidst the current pessimism due to the global financial crisis we still believe that FCD, correctly practiced along with new ideas, can still offer benefits to society; according to some, for example Currie (2006), correct practice implies a multitude of regulations in banking mostly based on recipes recommended by BASEL II. Although regulations are necessary they would have to be highly differentiated to fit the needs of various nations given their economic histories, size, social structure, religious beliefs and exposure (or not) to globalisation (Marber, 2005). In our opinion the correct practice should involve incentive compatible mechanisms along the lines described by Maskin (2008), Hurwicz (2008), Myerson (2008) and Ghatak (1999). Islamic financing has also become one more tool for meeting such objectives in both Muslim and non Muslim countries given the greater stability of this financing mode during the recent financial crisis.

## Acknowledgements

We are grateful to the editor of this journal and three anonymous referees for constructive comments and suggestions. All errors remain ours. The first author wishes to express his appreciation for the support provided by King Fahd University of Petroleum and Minerals in the preparation of this paper.

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## Notes

- 1 Michael Milken is a philanthropist and financier. He chairs the Milken Institute <<http://www.milkeninstitute.org/>>, a non-profit economic think tank in Santa Monica, California, USA.
- 2 Despite the pessimism that the current financial crisis makes us all feel, Karabell (2008) states that 'the economic news isn't all bleak'. In a recent column in the Wall Street Journal he points out that he sees three signs of hope: "First, we have not seen war, revolution, the collapse of states and governments or massive demonstrations sweeping the globe ...; Second, consumers in many parts of the world are in relatively good shape ... the credit system ... didn't allow consumers to take on the obscene leverage that financial institutions did ...; In addition, corporations generally have very clean balance sheets with little debt and lots of cash, unlike the down turns in 2002 and in the 1980s. And government has more creative ways to spend, which both the current Federal Reserve and the incoming Obama administration intend to do."



- 3 Assuming that there are no barriers to entry, the increase in profits, due to repayments and more sales, may attract entrants causing profits to erode. Naturally, one may ask: would profit erosion negatively affect the lender's ability to minimise adverse selection and moral hazard? At this time, we would like to leave this question unanswered.

## **Appendix 1**

### *Emergency Economic Stabilisation Act of 2008, Summary*

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#### I Stabilising the economy

The Emergency Economic Stabilisation Act of 2008 (EESA) provides up to \$700 billion to the secretary of the treasury to buy mortgages and other assets that are clogging the balance sheets of financial institutions and making it difficult for working families, small businesses and other companies to access credit, which is vital to a strong and stable economy. EESA also establishes a program that would allow companies to insure their troubled assets.

#### II Homeownership preservation

EESA requires the treasury to modify troubled loans – many the result of predatory lending practices – wherever possible to help American families keep their homes. It also directs other federal agencies to modify loans that they own or control. Finally, it improves the HOPE for Homeowners program by expanding eligibility and increasing the tools available to the Department of Housing and Urban Development to help more families keep their homes.

#### III Taxpayer protection

Taxpayers should not be expected to pay for Wall Street's mistakes. The legislation requires companies that sell some of their bad assets to the government to provide warrants so that taxpayers will benefit from any future growth these companies may experience as a result of participation in this program. The legislation also requires the president to submit legislation that would cover any losses to taxpayers resulting from this program from financial institutions.

#### IV No windfalls for executives

Executives who made bad decisions should not be allowed to dump their bad assets on the government and then walk away with millions of dollars in bonuses. In order to participate in this program, companies will lose certain tax benefits and, in some cases, must limit executive pay. In addition, the bill limits 'golden parachutes' and requires that unearned bonuses be returned.

#### V Strong oversight

Rather than giving the treasury all the funds at once, the legislation gives the treasury \$250 billion immediately, then requires the president to certify that additional funds are needed (\$100 billion, then \$350 billion subject to Congressional disapproval). The treasury must report on the use of the funds and the progress in addressing the crisis. EESA also establishes an oversight board so that the treasury cannot act in an arbitrary manner. It also establishes a special inspector general to protect against waste, fraud and abuse.

Source: US Senate, Committee on Banking, Housing and Urban Affairs, October 1, 2008;  
[http://banking.senate.gov/public/\\_files/latestversionEESASummary.pdf](http://banking.senate.gov/public/_files/latestversionEESASummary.pdf)

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## Appendix 2

### *Home grants, ESOP and sock options*

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#### First-time home buyers in Australia

In Australia, Federal and State Governments offer First Home Owner Grants to first-time home buyers of up to A\$14000 for established homes and up to A\$21000 for new homes.

Additionally, mortgage banks offer rebates to first-time home owners over and above the government grants. A grant enables the borrower to experience the following benefits.

- The borrower can save interest on her loan.
- The amount of mortgage insurance she needs to pay may be less.
- She can reduce her minimum monthly repayments.

Source: [http://suncorp.com.au/suncorp/personal/home\\_loans/first\\_home\\_buyers/grant.aspx](http://suncorp.com.au/suncorp/personal/home_loans/first_home_buyers/grant.aspx)

#### Employee stock options plans (ESOP)

‘An ESOP is a kind of employee benefit plan, similar in some ways to a profit-sharing plan. In an ESOP, a company sets up a trust fund, into which it contributes new shares of its own stock or cash to buy existing shares. Alternatively, the ESOP can borrow money to buy new or existing shares, with the company making cash contributions to the plan to enable it to repay the loan. Regardless of how the plan acquires stock, company contributions to the trust are tax-deductible, within certain limits.

Shares in the trust are allocated to individual employee accounts. Although there are some exceptions, generally all full-time employees over 21 participate in the plan. Allocations are made either on the basis of relative pay or some more equal formula. As employees accumulate seniority with the company, they acquire an increasing right to the shares in their account, a process known as vesting. Employees must be 100% vested within three to six years, depending on whether vesting is all at once (cliff vesting) or gradual.

When employees leave the company, they receive their stock, which the company must buy back from them at its fair market value (unless there is a public market for the shares). Private companies must have an annual outside valuation to determine the price of their shares. In private companies, employees must be able to vote their allocated shares on major issues, such as closing or relocating, but the company can choose whether to pass through voting rights (such as for the board of directors) on other issues. In public companies, employees must be able to vote all issues.’

Source: <http://www.nceo.org/library/esops.html>

#### Stock option

‘A stock option gives an employee the right to buy a certain number of shares in the company at a fixed price for a certain number of years. The price at which the option is provided is called the ‘grant’ price and is usually the market price at the time the options are granted. Employees who have been granted stock options hope that the share price will go up and that they will be able to ‘cash in’ by exercising (purchasing) the stock at ‘the lower grant price and then selling the stock at the current market price. There are two principal kinds of stock option programs, each with unique rules and tax consequences: non-qualified stock options and incentive stock options (ISOs).

Stock option plans can be a flexible way for companies to share ownership with employees, reward them for performance and attract and retain a motivated staff. For growth-oriented smaller companies, options are a great way to preserve cash while giving employees a piece of future growth. They also make sense for public firms whose benefit plans are well established, but who want to include employees in ownership. The dilutive effect of options, even when granted to most employees, is typically very small and can be offset by their potential productivity and employee retention benefits.

Options are not, however, a mechanism for existing owners to sell shares and are usually inappropriate for companies whose future growth is uncertain. They can also be less appealing in small, closely held companies that do not want to go public or be sold because they may find it difficult to create a market for the shares.’

Source: <http://www.nceo.org/library/optionfact.html>

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