Preliminary Thoughts in Banking Risk Management
Recommendations to Arab Banks

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INTRODUCTION

This paper aimed at providing some preliminary thoughts for banking risk management, with the purpose of providing Arab banking institutions with some guideline on risk management. The importance of this subject to modern banks comes from the latest structural changes that affect banks main role in the economy. That is their financial intermediation role (see second section). This paper emphasis the view that banking risk management has developed overtime to encounter new risks arisen from changing regulation, markets and economies (discussed in third section). This paper shows how such changes influenced and reshaped today's banking business and what classes of banking risks should be considered in banking risk management (outlined in the fourth section). It argues that Arab banks should perform new roles such as promoting investments, investing in the stock and bonds markets and underwriting securities (elaborated in the fifth section). The purpose of such new functions is to extend diversification and to transform banking risk management from risk-averse to managed and controlled risk-taker.

FINANCIAL INTERMEDIATION IN A NEW ERA

Over the last decade, the banking sector witnessed two structural changes: Firstly deregulation, mainly in Europe and the third world countries that follow the European banking system (McGoldrick and Greenland, 1992). Deregulation has spurred on competition from non-bank financial companies and service proliferation has accelerated under the pressure of increasing competition. Secondly, applying computer-based technologies to provide variety of flexible banking products and services (Moules, 1997). Banks have turned toward electronic networks to replace labor-based processing systems, thus reducing their operating costs. ATM, for example, provides customers 24 hours access to their deposit accounts and computer networks process thousands of transactions from all over the world. Banks are becoming more of capital-intensive, fixed-cost and less of labor-intensive, variable cost. However, these structural changes increased the average cost of the principal source of funds for most banks, *i.e.* deposits. Thus, adding new pressure on bank risks. In recent years, many countries experienced serious banking crises. Of 181 member countries of the IMF, 41 countries had banking crises and 108 countries had serious banking problems (Goodhart *et al.*, 1997). Such a new environment had led to the mergers and globalisation of banking industry, such as the merger of the UK Lloyds and TSB, Hong Kong Shanghai and Midland, and the German Deutsch Bank and the USA Chase Manhattan.

However, the same period had witnessed a growing activity in the financial markets as well as in the international capital movements, where banks played a major role (Rochet, 1999). The average intraday overdraft granted by the Federal Reserve to US Banks was 125 billion dollar in he beginning of the 1990s and the average daily international flow was 2000 billion dollar (Hancock and Wilcox, 1996).

The nowadays global financial environment is facing serious challenge. That is preventing a sufficient flow of capital to the real economy. The deterioration in the balance sheets of investors and the natural risk-averse tendency of both individual and institutional investors are the underlying reasons. The running of the foamy economy has consolidated this tendency and shaped it in the investors' mind as a prevalent stimulus (Andersen, 1992). Thus, the simple improvement of the balance sheet will not be enough to restore the confidence of risk-averse investors in the financial markets.

On one hand, the limitations enforced by environmental considerations, the fast motion of social and cultural restructuring, and the rapid improvement of communication and technology are making it rather difficult to define a coherent feasibility study for any project. On the other hand, the needs for investment in new technologies, and the bursting demand for the private sector's investment in the infrastructure, are apparent to be the driven forces of the global businesses. In this environment, the real dilemma within the financial system is its incapability to provide the adequate amount of risky-capital necessary to secure future growth, as well as the difficulty introduced by the lessened balance sheets.

While diversifying risk, financial assets have the instinctive ability to generate revenues. Securitisation of these assets, and the opportunity of trading risk by using swaps, made it easier to spread risk. In this context, swaps can be seen as a remarkable advance in risk control engineering. In such a new environment, financial institutions should concentrate more on the following futuristic functions: Serving investors with fair clarifications of the inherent risk-return analysis introduced by investment alternatives, and modifying these analyses according to investors' needs and requirements, by using the latest financial engineering and advanced technologies in choosing between inherent features of various financial assets.

THE DEVELOPMENT OF BANKING RISK MANAGEMENT

Uncertainty exhibits itself all the times and it makes banking business, *enter alias,* is ever-changing, and the current pace of change is nothing short of remarkable. The recognition of uncertainty has brought the importance of the management of risk into the public spotlight and given birth to what has been termed the “Age of Risk” (Ewing and Lee, 2004).

Historically, corporate management had been hostile to risky financial transactions. Its dominant philosophy is to minimize risk. Thus, the principle of secured assets were overriding the financial business, per which all loans, bonds, and call options funds transactions were backed by collateral. This rule shaped the intermediary and non-banking financial institutions until mid-1980s, when it became possible to have unsecured inter-bank call funds transactions (Platt, 1986).

During the high growth era, however, some risky asset transactions occurred. There were some deals arranged under the main bank system, wherein a bank was a company's prime lender and, mostly, a shareholder as well. Debt restructuring was extended to the company (the borrower) when performance deteriorated, in order to reduce the loan principal and interest burden. If the situation continued to worsen, the bank would accept to capitalise its credit, especially when the accumulated losses had seriously threatened the bank's net worth. In such cases, the bank works as a lender as well as shareholders. Although the bank supporting a client in times of crises meant burdening additional risk, the institution's stock of financial assets generated sufficient profits to offset the losses from risky asset transactions. Despite such rare possibility, rapid economic growth allowed banks to generate great profits, both from credits and equities.

Since the 1970s oil crises, risky-assets transactions have expanded, however infrequently. This was due to the fact that the developed economies furnished infrequent opportunities for corporations to grow, and that the rescuing of troubled firms became much less attractive than before. Therefore, financial intermediary and non-intermediary institutions began to inspect and more closely investigate the financial position, performance and management of the borrowers. Such new policies, along with the awareness of their impact on the profitability, swifted corporate management to avoid risk. As a result, the percentage of corporate bankruptcy fell from 1% during the era of high growth (1970s) to less than 0.5% during the 1980s. However, a developed economy does not mean that it derive firms to avoid risk. In USA, for instance, the corporate bankruptcy rate was higher in the

1980s than in 1970s when the economy was less developed. Issuing junk bonds aggressively was a frequent illustration for taking high-risk transactions seen in the 1980s. In fact, the main cause that increased the number of unsecured transactions and the huge inflow of funds to the stock and real-estate markets during the late of 1970s and early 1980s was the relaxation of the principle of collaterized assets, as an integral part of financial deregulation. Examples of such uncollateralized transactions include the issuance of unsecured debentures and the inter-bank call loans in 1985. Deregulation, however, does not mean that there was a greater use made of high risk debentures. Instead, it should be explained as the recognition that, under certain conditions, unsecured debentures that carry low risk. The huge amount of capital inflows to the high risk sectors, represented by the stock and real-estate markets, during the high growth economy, can be explained by the investors' perception that prices were unlikely to drop. Hence, the legend of the stock and mortgages markets as secured investment opportunities framed the basis for strong investment activities [Figures from (Andersen, 1992)].

Risk-averse tendency and the investor attitudes favouring low-risk assets can frustrate the fund raising efforts of entrepreneur capable of bringing about forceable changes within the economy. Low-risk attitudes were noticeable in both stock and mortgages markets, in which capital drawn until the late of 1980s. The real-estate business is a vital contributor to the economy, especially with regard to its role in facilitating the efficient use and rational allocation of properties. However, the attitudes towards these investments, which used to be viewed as risk-free opportunities, have changed. The capital flows to these areas slowed in the 1990s and redirected towards the new technologies, i.e. information technologies (IT), telecommunications and bio-technologies.

During the era of interest-rate volatility in the late 1980s and 1990s, banks were faced with two threats: Liquidity and profitability. Maisel and Jacobson (1981) found that interest rate changes cause more reduction in average bank profitability than the loss of loans. In addition, Benston (1985) found that interest-rate risk is the principal cause for many bank failures. The serious adverse effect of interest-rate risk has resulted in its management becoming the primary concern of bank managers and regulators.

Since the beginning of the 21st century, however, the case is reversed. The interest rates on major currencies have been stabilised by the greater efforts of the central banks, and the inflation rates have been suppressed. All of which has led to a low and stable interest rate. Thus, making the cost of debt financing attractive, where banks are the principal fund providers. In such environment, banking risk management has to shift from managing interest-rate volatility to much on evaluating possible investment opportunities presented by the borrowers. For example, the cost of debt financing in Japan was significantly lower than that of any other developed country. That was the case when the productivity of the Japanese economy was negative, while the Japanese yen was at peak against its major counterparts, i.e. the US dollar and the German mark. The high demand for the yen by the Japanese expatriates and transferring them to Japan, mainly from USA, has added another problem to the Japanese monetary authority. In such times, Japan was floating over strong yen while suffering from negative inflation. For corporations, the alternative of raising funds in the form of equity was about to close, as the other alternative was much cheaper. To prevent the rush towards debt financing, where banks and other financial intermediaries are the strongest providers, the Japanese financial regulatory sets certain provisions, summarised by what so called "the legal list". It specifies the maximum percentage of fund assets that may be invested in a particular type of investments. In addition, corporations were obliged to disclose all information related to the risk-return profile of any investment to attract the required fund. The purpose of the list was to prevent corporations from excessively attracting low-cost funds, thus preventing future bankruptcy and future depression. All of this led to strong, however slow, recovery in the economy.

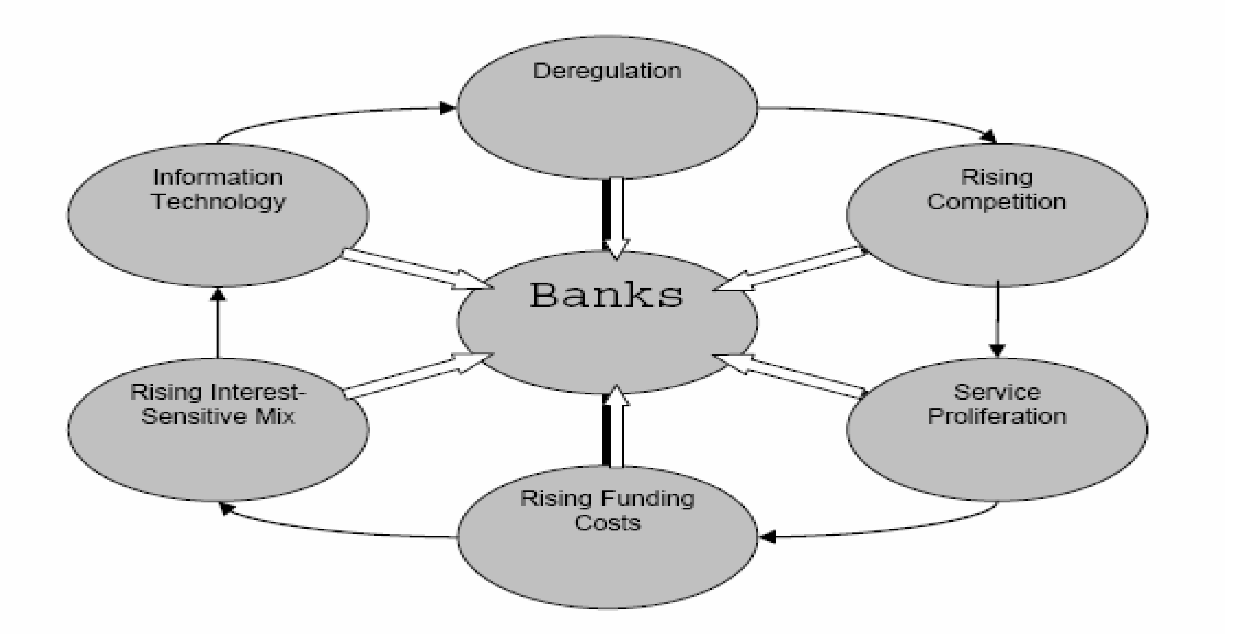
In providing long-term credit, financial intermediaries have followed quietly different position for evaluating risk than that for short-term credit. Historically, banks have been required to evaluate three areas when providing long-term loans at fixed interest rate. These are: The borrower's credit, interest rate and the funds availability. The main objective of such evaluation is to facilitate professional risk management. That is by make it possible to convert the risks associated with long-term fixed-rate loans into the low risk represented by bank debentures.

As a major provider of long-term credit, banks perform an essential role to the economy. That is by providing professional identification and assessment to the risk presented by/in particular corporation/industry. However, with the advance of financial environment (deregulation and IT), such tools may not be sufficient, or other tools might produce better results. Swaps and options and the technical know-how for securitising various types of financial assets are examples of such tools. But it should be taking into consideration that such new tools might bundle, unbundled and transfer risks.

MANAGING BANKING RISK

Banks can be identified by the functions and roles they perform in the economy. The problem is that not only the roles and services of banks are changing, but also the roles and services of their primary competitors are changing. Surveying nowadays banks services would suggest that they are enduring radical changes in functions and forms. The changes influencing and reshaping today's banking business include: Deregulation; Rising Competition; Service Proliferation; Rising Funding Costs; Rising Interest-Sensitive Mix of Funds and Information Technology. Figure (1) shows that each of the above trends are affecting banks business in itself, and that their continuous influence is due to their inter-factor relationships.

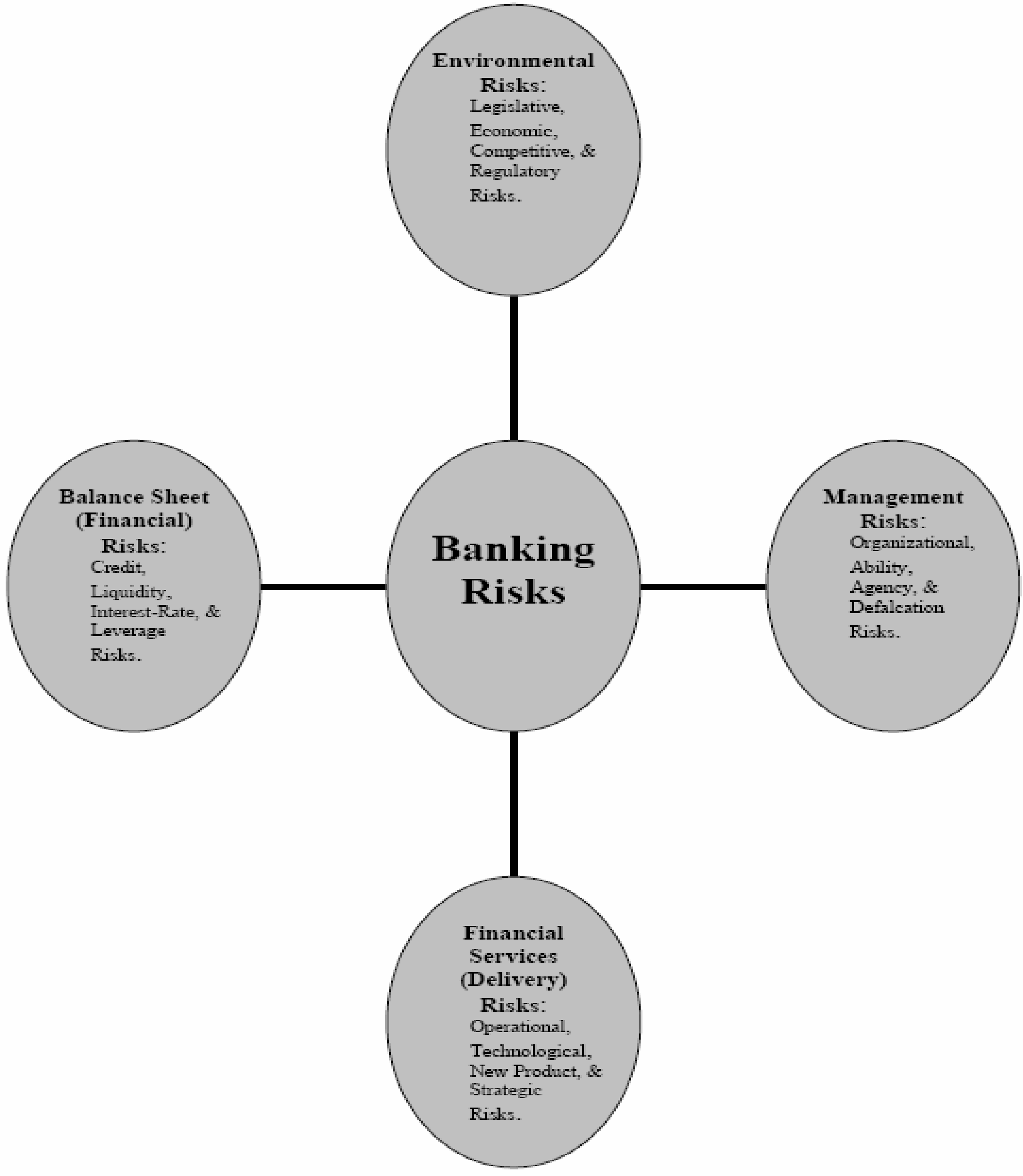
Figure 1 Principal Trends Reshaping Banking Today



Deregulation began with lifting the government-imposed interest rate ceilings on savings deposits. Simultaneously, governments allowed non-bank financial institutions to provide more financial services, which make them key banks' competitors and driving banks cost of funds higher. This has led banks to expand the financial services they provide including more interest-sensitive mix of funds that allow depositors to earn variable (market) interest rates. However, banks have benefited from the technology revolution by applying automation and electronic networks to replace labor-based processing systems. Thus, banks are becoming capital-intensive and fixed-cost industry. Such new environment has led to many bank failures and influenced many big names to merge. Gorton and Rosen (1992) found that banking share of the market for financial services appears to be shrinking. This has led Rose (1994) to argue that traditional banks do appear to be less and less necessary, and encouraged Beim (1992) to declare that banking as we know it today is dying. However, in such challenging environment, banks have to bear considerable risks to earn reasonable income. Thus, measuring and managing risks has become one of the most important roles in banking management.

In fact, banks operate in a risky environment, by risky agents (management), to provide risky services, to attain risky position and outcomes. These risky factors are the key categories of banking risks. The following figure (2), adapted from Hempel et al. (1994), shows the classifications of banking risk features, types and categories.

Figure 2 Classification of Banking Risks



Of the banking risk classes, financial risks can be measured and managed. Other risk classes are external factors but banks have to encounter them and use available financial instruments and techniques to control for these external risks. The following table (1) summarizes the main financial risks, their lead and lag measures as well as the required management techniques to control and manage these risks.

Table 1 Measuring and Managing Banking Financial Risks

Financial Risk	Lag Measures	Lead Measures	Management Techniques
(1) Credit Risk (Default or Asset Quality Risk)	Loans / Assets	Loan Concentration	Credit Analysis
	Non-Performing Loans / Loans	Loan Growth	Credit Documentation
	Loan Losses / Loans	High Lending Rates	Credit Control
	Reserves for Losses / Loans	Reserves to Non-Performing Loans	Special Risk assessment
	Net Charge-offs of Loans / Loans		
(2) Liquidity Risk (Funding Risk)	Loans / Deposits	Purchased Funds	Liquidity Plan
		Borrowing Cost	Contingency Plan
	Liquid Assets / Deposits	Liquid Assets	Cost / Pricing Models
	Cash and Due-from Balances / Total Assets		
	Purchased Funds / Total Assets	Borrowings / Deposits	Development of funding Sources
	Net Loans Outstanding / Total Assets		
(3) Interest-Rate Risk	Interest-Sensitive Assets / Interest-Sensitive Liabilities	Gap Buckets	Dynamic Gap Management
	Assets Maturing within One Year / Liabilities Due within One Year	Duration	Duration Analysis
	Gap	Dynamic Gaps	
(4) Leverage Risk (Capital Risk)	Equity / Deposits	Risk-Adjusted Assets / Equity	Capital Planning
	Equity / Assets		Sustainable Growth Analysis
	Capital / Assets	Growth in Assets vs. Growth in Equity	Dividend Policy
			Risk-Adjusted Capital Adequacy

Sources: Hempel *et al.* (1994), Figure 4-3, p. 89, and Rose (1991), p. 140-145.

Credit risk is the probability that the value of some of bank's assets, mainly loans, will decline. While liquidity risk is the probability that the bank has not enough cash and borrowing capacity to meet deposit withdrawals and new loan demand. Interest rate risk is the probability of declining bank's interest income and/or increasing interest expenses due to the movements of interest rates in the market. Finally, and most importantly to bank regulatory is leverage (capital) risk which is a function of the equity capital cushion a bank has to protect its depositors and borrowers from declines in asset value.

Bank regulatory has mandated a required leverage ratio in addition to risk-weighted capital requirements (tangible equity / tangible assets), where tangible equity (includes common tangible equity, perpetual preferred stocks, up 25% of mandatory convertible debt and minority interests) is referred to as Tier I or core eligible risk-based capital. Tier I ratio is the core capital divided by risk-adjusted assets, which should be not less than 4%. Then Tier II, known as supplemental eligible risk-based capital is imposed to further enhance bank's capital adequacy, which should be not less than 8%. It includes non-specific loan loss reserve up to 1.25% of risk-adjusted assets, perpetual preferred stocks not included in Tier I, mandatory convertible debt not included in Tier I, long-term subordinated debt limited to 50% of Tier I and limited-life preferred stock. In fact, Tier II is limited to 100% of Tier I. Tier II ratio is the supplemental capital divided by risk-adjusted assets (Hempel *et al.*, 1994, p. 277 and Rose, 1991, p. 455). Other non-regulatory bank defence against risks includes quality management, portfolio and geographical diversification and deposit insurance.

As we venture further in the new millennium, it is apparent that the world of risk management, as seen in the 20th century, has been overtaken by a new world order of viewing risk, often touted in the press as enterprise risk management (Ewing and Lee, 2004). Also it has become apparent that stakeholders, including but certainly not limited to shareholders, will not stand for the atrocities of corporate management as has been displayed by the Enron's, WorldCom's, Arthur Andersen's and Parmalat's of the world. This has led to a renewed and vibrant interest in the field of corporate governance in USA and UK. The irony of these events has led to reshape the current face of risk management to what Ewing and Lee (2004) have dubbed as ethical risk management.

Banks, however, will consider ethical behaviours and patterns only if there is regulation. Banks that embrace an ethical risk management approach have begun the first step in driving and leading an ethical culture. In this Age of Risk, the achievement of these goals will not be an overnight change; in fact, it is quite the opposite, more likely requiring a longer-term cultural shift. What can be done now is the procurement of knowledge as to what factors are likely to lead to success and then taking positive steps in that direction. It is hoped that risk management professionals and their banks take the initiative and move in the direction of ethical risk management instead of waiting for the next round of regulation to tell them where to go.

THE FUTURE OF BANKING RISK MANAGEMENT

This article proposes to be a survival guide to the Age of Risk as well as a call for financial community to be proactive in making this a Golden Age in the history of the business world. Long-term survival in the Age of Risk requires a self-prescribed overhaul of how the members of the banking risk management view themselves and their role in the financial community.

In the context of risk management, Arab banks should perform new roles in the interest of promoting the flow of investments. However, in order to be able to function the new roles, they must add another aspect to their risk assessment and control. That is the ability to analyse risk-return profiles and to adjust them so as to satisfy both investors and entrepreneurs, using state of art information system and technology. In addition, Arab banks are to assume the role of investors in stocks and bonds, where they should evaluate risks as an integral part of their portfolio risks and combine these securities with their loans portfolio for the purpose of diversifying their risks. Also, banks are to assume the role of securities underwriters, where they can rely on traditional financial risk evaluation techniques and use the latest information system and technology to transform and spread risk. By undertaking the function of underwriter role, banks will be able to seek an equilibrium point at which the risk-averse investors' matches low cost of fund for entrepreneurs. For this mechanism to operate effectively, the attitude of investors towards risk must be changed from complete risk-averse to managed and controlled risk-taker, using diversification and hedging. In such a dynamic environment, underwriting of securities will be one of the principal functions of Arab banks. Their task will be facilitating the flow of funds, via financial instruments carrying terms and conditions that meet the needs of both entrepreneurs and investors. However, the effectiveness of the banks role as securities underwriters depends on the breadth and the depth of the market.

SUMMARY AND CONCLUSION

Today's banking sector is witnessing two structural changes: deregulation and information-technology-based services. Such a new environment had led to the mergers and globalisation of banking industry. The same period had witnessed a growing activity in the financial markets as well as in the international capital movements, where banks played a major role. These factors have led to term the current period as the "Age of Risk".

This paper argues that global financial business is facing serious challenge that is preventing a sufficient flow of capital to the real economy, due to the deterioration in the balance sheets of investors and the natural risk-averse tendency of both individual and institutional investors. The real dilemma within the financial system is its incapability to provide the adequate amount of risky-capital necessary to secure future growth, as well as the difficulty introduced by the lessened balance sheets. These are due to, firstly, the limitations enforced by environmental considerations, the fast motion of social and cultural restructuring, and the rapid improvement of communication and technology are making it rather difficult to define a coherent feasibility study for any project. Secondly, the needs for investment in new technologies, and the bursting demand for the private sector's investment in the infrastructure, are apparent to be the driven forces of the global businesses. Therefore, financial institutions should concentrate more on serving investors with fair clarifications of the inherent risk-return analysis introduced by investment alternatives, and modifying these analyses according to investors' needs and requirements.

Long-term survival of Arab banks in the Age of Risk requires a self-prescribed overhaul of how the members of the banking risk management view themselves and their role in the financial community. They should perform new roles in the interest of promoting the flow of investments. In addition, Arab banks are to assume the role of investors in stocks and bonds. Also, they are to assume the role of securities underwriters. For these roles to function effectively, the attitude of investors towards risk must be changed from complete risk-averse to managed and controlled risk-taker, using diversification and hedging. Their task will be facilitating the flow of funds, via financial instruments carrying terms and conditions that meet the needs of both entrepreneurs and investors. However, the effectiveness of the banks role as securities underwriters depends on the breadth and the depth of the Arab financial markets.

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