

Non-Usury Bank Corporation (NUBankCo): The Solution to Islamic Banking

Bijan Bidabad

B.A., M.Sc., Ph.D., Post-Doc.

Professor

Economics and Chief Islamic Banking Advisor

Bank Melli, Iran

E-mail: bjan@bidabad.com

Abstract

In this paper, we are going to introduce a new Islamic financial institution with elaborated economic and financial characteristics. «Non-Usury Bank Corporation» (NUBankCo) is defined in a way that depositors are the shareholders of the Bank. This corporation is a new kind of shared ownership corporation which its shareholders are deposit holders and their deposits work as corporation's equities. The defined bank can perform non-usury operations, and by designing a behavioral model, it is shown that NUBankCo can draw an environment that the welfare of society is to be maximized. Mobility of deposit resources in NUBankCo is less than conventional banks, and there are fewer conflicts between large and small shareholders/depositors and limits the emergence of shareholders' cartels and thus huge sudden outflow of funds which creates bankruptcy crises. OECD's corporate governance criteria are completely adaptable to this bank. Other pronouncements like Basel, AAOFI, IFSB, and FSF can be applied to this bank. NUBankCo can be established in different countries and can be adapted to different monetary, banking, foreign exchange, and commercial laws and regulations and can coexist in competition with conventional banks. NUBankCo will be Islamic in deposit mobilization side and will be Islamic in the loan/credit side for certain Islamic contracts and banking operations. Foreign currency exchange operations, bonds, commercial papers, and precious metals transactions, cash and draft operations, and credit and beneloan (non-interest loan) operations are characterized for NUBankCo to be fully Islamic.

Keywords: Usury, Islamic Banking, Finance.

Introduction

Usury specification is the main point to distinguish Islamic and other types of banking from each other¹. By inspecting the Quran, Torah and Bible, and other gospels, we will find that all of them prohibit usury, but the definition of usury is not the same in all of them. Many discussions about the distinction of usury and non-usury banking come from the usury definition.

¹ Fundamentally this comparison is not correct, because Islam means obedience or surrender to prophet or his representatives or those whom prophet leaved (permitted) them. By this definition, followers of all religions are all Moslem; even we may say that, there is no religion around the world expect Islam. Quran explicates: «And whose seeketh as religion other than the surrender, it will not be accepted from him and he will be a looser in the Hearafter:

«وَمَنْ يَبْتَغِ غَيْرَ الْإِسْلَامِ دِينًا فَلَنْ يُقْبَلَ مِنْهُ وَهُوَ فِي الْآخِرَةِ مِنَ الْخَاسِرِينَ» (Ale-Imran, 85).

In the preceding verse (84) Quran explicates on the other hand: «Say (O Muhammad): we believe in Alah and that which is revealed unto us and that which was revealed unto Abraham and Ishmael and Isaac and Jacob and the tribes, and that which was vouchsafed unto Moses and that Jesus and the prophets from their Lord. We make no distinction between any of them, and unto Him we have surrendered (Islam)»:

«قُلْ آمَنَّا بِاللَّهِ وَمَا أُنزِلَ عَلَيْنَا وَمَا أُنزِلَ عَلَىٰ إِبْرَاهِيمَ وَإِسْمَاعِيلَ وَإِسْحَاقَ وَيَعْقُوبَ وَالْأَسْبَاطِ وَمَا أُوتِيَ مُوسَىٰ وَعِيسَىٰ وَالنَّبِيُّونَ مِنْ رَبِّهِمْ وَلَا نَفْرَقُ بَيْنَ أَحَدٍ مِنْهُمْ وَنَحْنُ لَهُ مُسْلِمُونَ» (Almost identical with Baghareh, 136)

On the other hand, the religion of Abraham, Ishmael, Isaac, Jacob and the tribes and Moses and Jesus and all other prophets have been surrender/Islam and those people who have surrendered to them or to the allowed persons from them are Moslems. Again in a more preceding verse, Quran generalizes the surrender to «all»: «Seek they other than the religion of Allah, when unto Him submitteth (surrenderth) whosever is in the heavens and the earth, willingly, or unwillingly, and unto Him they will be returned:

«أَفَغَيْرَ دِينِ اللَّهِ يَبْتَغُونَ وَلَهُ أَسْلَمَ مَنْ فِي السَّمَاوَاتِ وَالْأَرْضِ طَوْعًا وَكَرْهًا وَإِلَيْهِ يُرْجَعُونَ» .

For critics on these verses see:

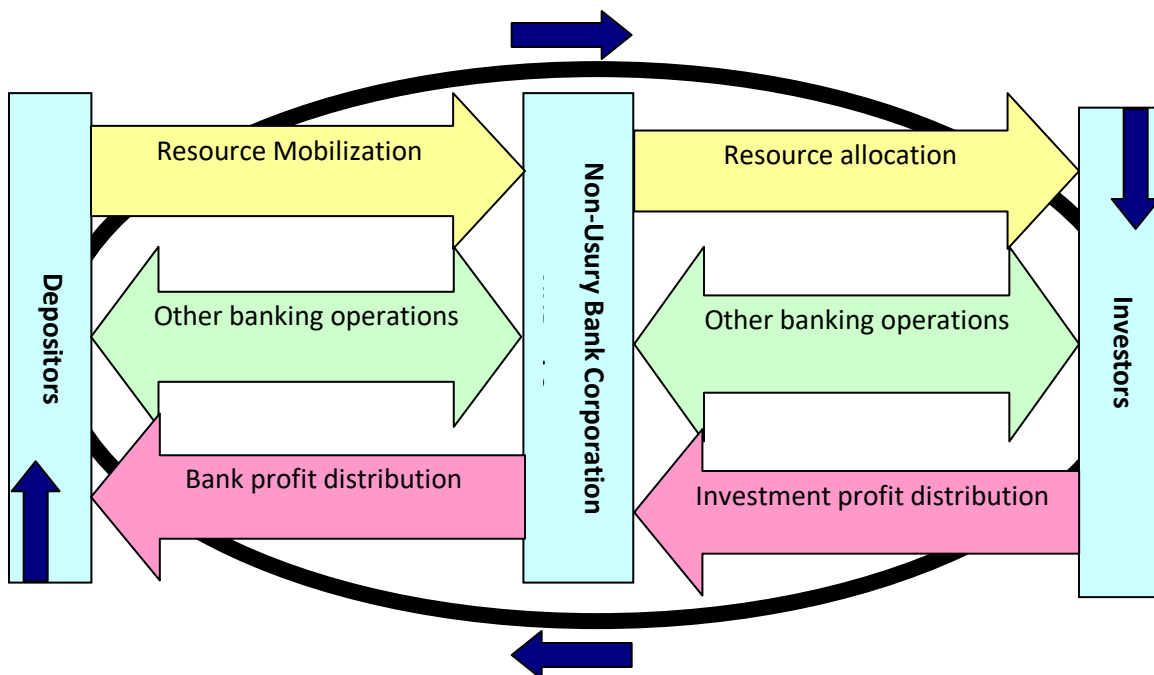
حضرت حاج ملا سلطانمحمد بیدختی جنابذی سلطانعلیشاه، بیان السعاده فی مقامات العباد، طبع دانشگاه تهران، 1346ه.ش.



Bidabad and Harsini (2003)² and Bidabad (2004)³ by scrutinizing usury definition and using theosophy principal of jurisprudence and based on Quran descriptions define some criteria that can distinguish usury from non-usury transactions. It seems that these criteria may be accepted as an ending point to usury definition. The criteria are:

1. Lender must share in profit/loss of the economic activity of loanee.
2. The rate of interest must not be determined and conditioned before.
3. Interest in consumption loans is usury.
4. Foreign currency exchange (without interest) is not usury.

Considering the above criteria, we try to define Non-Usury Bank Corporation.



Non-Usury Bank Corporation

No matter of private or public characteristics of the shareholders and government characteristics of a country, we are going to

² Bidabad, B. Harsini, A. (2003), Religious-economic analysis of usury in consumption and investment loans and shortages of contemporary jurisprudence in finding the rules of religion legislator. Monetary and Banking Research Academy, Central Bank of Iran, 2003, (in Farsi).

http://www.geocities.com/bijan_bidabad/reba7.htm

³ Bidabad, B. (2004), Economic-juristic analysis of usury in consumption and investment loans and contemporary jurisprudence shortages in exploring legislator commandments. Proceeding of the 2nd International Islamic Banking Conference, Monash University of Malaysia. 9-10 September 2004.

define a non-usury bank which can perform its best duties as a financial intermediary. As it is obvious from the following figure, when a bank as a financial intermediary mobilizes the saving resources to the bank and then mobilizes them to investing purposes and in return derives some shares from investors' profit/loss and then redistribute them between bank and depositors, therefore, the bank has done a Modaraba transaction. This operation concord with Modarebeh completely if the bank financial and operational characteristics be of some special kind.

Suppose a bank is established as a joint shared company among (saving, time or demand) depositors. On the other hand, assume that the bank is a company and their shareholders are its depositors. There are differences between shares at joint-stock company and deposits at a conventional bank. But anyone by putting money at NUBankCo as any type of deposit will become the shareholder of the Bank. Every depositor has a share of NUBankCo (Non-Usury Bank Corporation) according to the number of days of his deposit holding multiplied by the amount of his deposit. The total capital of NUBankCo is equal to the total of all depositors' shares. Total capital and the total number of shares of NUBankCo are variable during time and depends on the amounts and durations of deposits. At the end of the period, the share of each shareholder will be calculated as follows, suppose:

q	Nominal price of each share
m	Number of depositors
D_i	Deposit of the i^{th} shareholder (depositor) ($i = 1, \dots, m$)
t_i	Deposit duration

$$\frac{D_i}{q} \times t_i \quad \text{Number of shares for the } i^{\text{th}} \text{ shareholder}$$

$$n = \frac{1}{q} \sum_{i=1}^m D_i t_i \quad \text{Total number of shares}$$

NUBankCo's revenue (R) minus its cost (C) gives the bank's profit (π):

$$\pi = R - C$$

NUBankCo will distribute its profit to his shareholders, who are depositors according to their relative shares. Profit of each share (r) is calculated by:

$$r = \frac{q\pi}{\sum_{i=1}^n D_i t_i}$$

Distribution of NUBankCo's profit to shareholder i (π_i) will be:

$$\pi_i = \frac{r D_i t_i}{q}$$

This amount may be added as an extra share of the depositor to his deposit account at the initiation of the next financial period or may be paid to him. Non-Usury Bank Corporation will have acceptable and elaborated properties as follows:

Organization and corporate governance

Corporate governance is most often viewed as both the structure and the relationships which determine corporate direction and performance. The board of directors is typically central to corporate governance. Its relationship to the other primary participants, typically shareholders and management, is critical. Additional participants include employees, customers, suppliers, and creditors. The corporate governance framework also depends on the legal, regulatory, institutional, and ethical environment of the community. Corporate governance looks at the institutional and policy framework for corporations - from their very beginnings, in entrepreneurship, through their governance structures, company law, privatization, to market exit and insolvency. The integrity of corporations, financial institutions, and markets are particularly central to the health of economies and their stability. Claessens (2003)⁴, summarizes the ways in which corporate governance affects growth and development:

- increased access to external financing by firms
- lowering the cost of capital
- better operational performance
- reduced risk of the financial crisis
- better relationships with stakeholders

When banks efficiently mobilize and allocate funds, this lowers the cost of capital to firms, boosts capital formation, and stimulates productivity growth. Thus, weak governance of banks reverberates throughout the economy with negative ramifications for economic development. If bank managers face sound governance mechanisms, they will be more likely to allocate capital efficiently and exert effective corporate governance over the firms they fund. In contrast, if banks managers enjoy enormous discretion to act in their own interests rather than in the interests of shareholders and debt holders, then banks will be correspondingly less likely to allocate society's savings efficiently and exert sound governance over firms. Banking crises dramatically advertise the enormous consequences of poor governance of banks. When bank insiders exploit the bank for their own purposes, this can increase the likelihood of bank failures and thereby curtail corporate finance and economic development. Banking crises have crippled economies, destabilized governments, and intensified poverty. Thus, good corporate governance is, therefore, going to help build confidence in firms, banks, and in the economy as a whole.

Corporate governance for Islamic banking has not driven yet, but some endeavor to this important subject is defined by Grais (2004)⁵. He tries to explain that some sound corporate governance rules may help Islamic banking to fulfill its mission. In this regard, he emphasizes on the need to supplement general corporate governance principles to Islamic banking. OECD principles⁶ apply to all financial institutions, but sound corporate governance for Islamic banking and financial institutions calls for addressing the specific features and complementing the body of generally accepted corporate governance principles. Anyhow, the World Bank, the Global Corporate Governance Forum, the International Corporate Governance Network, and the OECD have all influenced the development of corporate governance globally. The OECD issued revised corporate governance principles in 2004 covering:

- Rights and obligations of the shareholders
- Equitable treatment of shareholders
- Role of stakeholders and corporate governance
- Transparency, disclosure of information and audit
- Board of directors
- Non-executive members of the board

⁴ Claessens (2003), Corporate governance and development, Global Corporate Governance Forum, World Bank, Washington, USA.

⁵ Wafiq Grais (2004), Corporate governance challenges of businesses offering Islamic financial services. Proceeding of the 2nd International Islamic Banking Conference. Monash University of Malaysia. 9-10 September.

⁶ OECD (2004), The OECD principles of corporate governance.
<http://www.oecd.org/daf/corporate/principles/>



- Executive management, compensation, and performance

The Basel⁷ pronouncements impact upon all banks, but Islamic banks also have regard to the pronouncements of AAOFI (Accounting and Auditing Organization for Islamic Financial Institutions) and the IFSB (Islamic Financial Services Board). In many ways, Islamic banks are ahead in certain areas, such as the consideration of social, ethical, and environmental issues. Whereas corporate social responsibility and socially responsible investment has only gained a higher profile in recent years in non-Islamic institutions, it has been at the core of Islamic banking for many years. However all banks have to take account of risks, and this is where it is essential to have good corporate governance and risk management, though, Islamic banking based on non-usury Islamic products suffers less from the market fluctuations. In this category, the NUBankCo seems to be more stable than other Islamic financial institutions. This is the case because the NUBankCo directly relates investor's demand for financial resources to the saving depositors. That is NUBankCo is not a conventional profit maximizer firm. NUBankCo's income comes from the marginal efficiency of investment by engaging in Islamic financial based investment project. Then by reducing the bank's operational cost, the profit is distributed to deposit holders. This procedure has its own built-in good corporate governance characteristics. That is, in case of both diffuse and concentrated⁸ forms of depositors/shareholders of NUBankCo, this bank will be more efficient than conventional banks. High pressure of fixed interest rates always put the bank's directors and managers in risky and nervous positions. This enforces them to do anything –even fraud– to save the bank and hedge themselves from ups and down undesirable fluctuations. Since NUBankCo depositors participate in benefit/loss of the bank. Thus this case is not as acute as conventional banks. This means that there is a built-in semi-automated corporate governance in NUBankCo.

Mobility of deposit resources in NUBankCo is less than conventional banks. Because the calculation of payable interest/profit of depositors will be done at the end of the financial period and it is not known in advance to depositors to motivate them for fast mobilization of financial resources. This causes a more stable position for the bank in balancing its resources streams. Anyhow, the bank also can enforce more restrictions for the mobility of resources in some forms of time deposits

In the NUBankCo, there is no price of share similar to the stock price, and therefore, there are fewer conflicts between large and small shareholders/depositors. It has caps on a single owner's contribution and limits the emergence of shareholders' cartels. In this regards increase good corporate governance background.

NUBankCo, similar to other corporations, is managed by the board of directors under the articles of association and general council approvals. NUBankCo can be established in different countries and can be adapted to different monetary and banking and foreign exchange laws and regulations. This bank can simply be adapted to commercial laws of different countries and parallel to conventional banks.

The ownership form of NUBankCo depends on the nature of its shareholders/depositors as private or governmental or mixed of them and also can be defined as a priori in articles of association same as other companies. Articles of association may also devote distinguished shares to founders with some priorities regarding some kind of share seniorship or etc. Since, in general, the share of private or government deposits at NUBankCo may vary during time by extra depositing/redepositing of both parts, the ownership of NUBankCo may also be volatile accordingly.

⁷ The Basel Committee on Banking Supervision (BCBS) has taken the view that market discipline is increasingly important in a world where banking activities are becoming more and more complex. This view is reflected in Pillar 3 of the proposed new Accord (commonly known as Basel II), which encourages greater bank disclosure to strengthen market discipline. It is argued that for market discipline to be effective four prerequisites have to be met: First, market participants need to have sufficient information to reach informed judgments. Second, they need to have the ability to process it correctly. Three, they need to have the right incentives. Finally, they need to have the right mechanisms to exercise discipline. See Rifaat Ahmed Abdel Karim, Corporate governance, market discipline, and regulations of Islamic banks. Proceeding of the 2nd International Islamic Banking Conference. Monash University of Malaysia. 9-10 September, 2004.

⁸ Ross Levine, (2003), The corporate governance of banks, a concise discussion of concepts and evidence. Global Corporate Governance Forum, World Bank, Washington, USA.

FSF⁹ compendium standards¹⁰ also will be more compatible with NUBankCo than conventional banks, even Islamic banks. Though the latter is more financially stable than conventional banks, in turn, NUBankCo will be more stable than prevailed Islamic banks; because NUBankCo operates Islamic in both side of resource mobilization (deposits) and loan lending (investment) and also other banking operations. But existing Islamic banks try to use Islamic products on the lending side of their activities. Bidabad (2004) and Bidabad and Harsini (2003) have shown that whenever the interest rate is omitted from financial transactions, the economy will become more stable. In conventional banking both deposit and loan interest rates exist; in prevailed Islamic banking loan interest rate is going to be equalized to the marginal efficiency of investment that is going to be omitted, but in NUBankCo both interest rates are going to be omitted.

Economic performance and functioning

To analyze the economic performance of NUBankCo, we try to develop a simple microeconomic intertemporal consumption-saving-investment model¹¹. One may regard it as a mesoeconomic¹² framework and extract macroeconomic implications. Thus, according to this model, consumer postpones current consumption to gain more future consumption. On the other side, saving created by postponed consumption generates financial resource supply. Banks and financial intermediaries offer this resource to investors. Whenever marginal efficiency of investment¹³ is greater than the market interest rate then, by increasing interest rate, demand for saving resources increases. This mechanism is done by intermediation of the bank. Now, in this case, suppose that consumer has a multiperiod utility function. By using composite commodity theorem¹⁴ redefine his utility function in terms of composite commodity consumption expenditures:

$$U=V(c_1,c_2,\dots,c_t)$$

Where, c_1,c_2,\dots,c_t are corresponding consumption at market dates of $1,2,\dots,t$.

The consumer expects to receive the earned-income stream (y_1,y_2,\dots,y_T) on the marketing dates within his planning horizon. By borrowing and lending, the consumer can reconcile his two streams of consumption and income. The consumer's total income receipts on the t^{th} marketing date are the sum of his earned income and his interest income from let say deposits (credits) d_t held during the preceding period: $y_t+i_{t-1}d_{t-1}$. His interest income will be positive if his deposit holding is positive and negative if his deposit holding is negative (he credits or is in debt). His expected saving on the t^{th} marketing date, s_t , is defined as the difference between his expected total income and total consumption expenditures on that date:

$$s_t = y_t + i_{t-1}d_{t-1} - c_t \quad t=1,2,\dots,T$$

Where, i_t is the expected rate of interest at t^{th} marketing date. Suppose $d_0=0$, and on each marketing date, the consumer will

⁹ Financial Stability Forum (FSF) was convened in April 1999 to promote international financial stability through information exchange and international co-operation in financial supervision and surveillance. The Forum brings together on a regular basis national authorities responsible for financial stability in significant international financial centers, international financial institutions, sector-specific international groupings of regulators and supervisors, and committees of central bank experts. FSF seeks to co-ordinate the efforts of these various bodies in order to promote international financial stability, improve the functioning of markets, and reduce systemic risk.

¹⁰ The Compendium of standards lists the various economic and financial standards that are internationally accepted as important for sound, stable and well functioning financial systems. The compendium highlights 12 key standards which the FSF has designated as deserving of priority implementation, taking account of country circumstances.

Corpus of the compendium standards are organized under three broad headings of: macroeconomic policy and data transparency (including: monetary and financial policy transparency, fiscal transparency, data dissemination, institutional and market infrastructure (including: insolvency, corporate governance, accounting, auditing, payment and settlement, market integrity, market functioning) and financial regulation and supervision (including: banking supervision, securities regulation, insurance regulation, financial conglomerate supervision)

¹¹ This model to somehow is a modified version of optimization behaviors of consumer and firm over time tailored for evaluating NUBankCo. See Henderson and Quandt (1985), pp. 322-341.

¹² At meso level a Robinson Crusoe's behavioral model is built.

¹³ There are other names for this concept as: marginal internal rate of return, marginal rate of return over cost, marginal productivity of investment, marginal efficiency of capital. See: Friedrich Lutz, Vera Lutz (1951), Irving Fisher (1954), Henderson, Quandt (1985): p. 336.

¹⁴ See: James M. Henderson, Richard E. Quandt (1985) pp. 38-39.



increase the value of his deposit or credit holdings by the amount of his saving on that date:

$$d_t = d_{t-1} + s_t \quad t=1,2,\dots,T$$

Now, consider the case of an individual who saves d_t dollars on the t^{th} marketing date and continues to resave both principal and interest until the τ^{th} marketing date. The value of his saving at the beginning of the τ^{th} marketing date is:

$$d_t(1+i_t)(1+i_{t+1})\dots(1+i_{\tau-1})$$

And the total return on this saving is:

$$J = d_t(1+i_t)(1+i_{t+1})\dots(1+i_{\tau-1}) - d_t$$

The average and marginal rates of return ($\xi_{t\tau}$) for this saving are equal and constant:

$$\xi_{t\tau} = \frac{J}{d_t} = \frac{\partial J}{\partial d_t} = (1+i_t)(1+i_{t+1})\dots(1+i_{\tau-1}) - 1$$

Consumer's planned deposit holding after trading on the τ^{th} marketing date can be expressed as:

$$d_1 = (y_1 - c_1)$$

$$d_2 = (y_1 - c_1)(1+i_1) + (y_2 - c_2)$$

$$d_3 = (y_1 - c_1)(1+i_1)(1+i_2) + (y_2 - c_2)(1+i_2) + (y_3 - c_3)$$

and in general using $\xi_{t\tau}$:

$$d_t = \sum_{t=1}^{\tau} (y_t - c_t)(1 + \xi_{t\tau}) \quad \tau = 1, \dots, T$$

The consumer's deposit holdings after trade on the τ^{th} marketing date equal the algebraic sum of all his savings, net of interest expense or income, through that date with interest compound on each.

In this multi periods case suppose there is a limitation upon the amount of debt that he could amass over his lifetime. The budget constraint can be expressed as a restriction upon the amount of the consumer's terminal bond holdings. He may plan to leave an estate or debts for his heirs, but assume that he is going to leave his heirs neither assets nor debts ($d_T=0$). Therefore, the consumer budget constraint will be:

$$d_T = \sum_{t=1}^T (y_t - c_t)(1 + \xi_{tT}) = 0$$

Dividing through by the constant $(1 + \xi_{1T})$ and rearranging the terms:

$$\sum_{t=1}^T y_t (1 + \xi_{tT})^{-1} = \sum_{t=1}^T c_t (1 + \xi_{tT})^{-1}$$

Since:

$$\frac{1 + \xi_{tT}}{1 + \xi_{lT}} = \frac{(1 + i_t) \dots (1 + i_{T-1})}{(1 + i_1) \dots (1 + i_{T-1})} = \frac{1}{(1 + i_1) \dots (1 + i_{t-1})} = (1 + \xi_{lt})^{-1}$$

Consumer lifetime maximization problem will be the solution to the following Lagrange function:

$$\max : V^* = V(c_1, \dots, c_T) + \mu \sum_{t=1}^T (y_t - c_t)(1 + \xi_{lt})^{-1}$$

Set its partial derivatives to zero:

$$\frac{\partial V^*}{\partial c_t} = V_t - \mu(1 + \xi_{lt})^{-1} = 0 \quad t=1, \dots, T$$

$$\frac{\partial V^*}{\partial \mu} = \sum_{t=1}^T (y_t - c_t)(1 + \xi_{lt})^{-1} = 0$$

Then:

$$-1 - \frac{\partial c_\tau}{\partial c_t} = \frac{(1 + \xi_{lt})^{-1}}{(1 + \xi_{l\tau})^{-1}} = \xi_{t\tau} \quad t, \tau = 1, \dots, T \quad \tau > t$$

Requiring the second order condition to be satisfied, consumer adjusts his subjective preferences to his market opportunities by equating his rate of time preference for consumption between every pair of periods to the corresponding saving deposit rate of return (average and marginal rates of return for saving). It is more convenient if define $\xi_{tt} = 0$ and let $i_t = \dots = i_{t-1} = i$, then:

$$\xi_{t\tau} = (1 + i)^{\tau-t} - 1$$

That can be evaluated from a compound-interest table for specific values of $(\tau-t)$ and i . In this case, we will have:

$$-\frac{\partial c_\tau}{\partial c_t} = (1 + i)^{\tau-t} = \xi_{t\tau}$$

The above conclusion is more obvious in this equation.

Now consider a producer who maximizes his profit from a multiperiod production in a similar manner. It is assumed that present and future prices have known and unchanging values. Entrepreneur possesses both external and internal investment opportunities. Input expenditures and output revenues on each date are treated as composite commodities which are by an implicit investment-opportunities function:

$$H(I_1, \dots, I_t, R_1, \dots, R_{t+1}) = 0$$

Where, I_t and R_t are composite commodities representing investments and revenues respectively. Entrepreneur desires to draw his investment and production plan to maximize the present value of his profit stream by maximizing the following Lagrange function:

$$\max : \pi^* = \sum_{t=2}^{L+1} R_t (1 + \xi_{lt})^{-1} - \sum_{t=1}^L I_t (1 + \xi_{lt})^{-1} + \mu H(I, \dots, R_{L+1})$$

Setting the partial derivatives equal to zero:

$$\frac{\partial \pi^*}{\partial R_t} = (1 + \xi_{lt})^{-1} + \mu \frac{\partial H}{\partial R_t} = 0 \quad t=2, \dots, L+1$$

$$\frac{\partial \pi^*}{\partial I_t} = -(1 + \xi_{lt})^{-1} + \mu \frac{\partial H}{\partial I_t} = 0 \quad t=1, \dots, L$$

$$\frac{\partial \pi^*}{\partial \mu} = H(I_1, \dots, R_{L+1}) = 0$$

The solution to the above system of equations gives the first order conditions as:

$$\frac{\partial R_t}{\partial I_t} - 1 = - \frac{\partial H / \partial I_t}{\partial H / \partial R_t} - 1 = \xi_{t\tau} \quad t=1, \dots, L \quad \tau=2, \dots, L+1$$

Requiring the second order condition to be satisfied, the entrepreneur must equate each of his marginal internal rates of return to the corresponding market rate of return.

Comparison of both consumer's and entrepreneur's behaviors at these models shows that if the consumer's rate of time preference for consumption in period t rather than period τ is equal to saving deposit interest rate, he will reach his maximum in consumption. On the other side, the entrepreneur will reach his maximum profit if he borrows from the bank and invests up to the point that his marginal internal rate of return from investment on the tth marketing date with respect to the τth marketing date is equal to the corresponding loan interest rate. That is:

$$-1 - \frac{\partial c_\tau}{\partial c_t} = \xi_{t\tau} = \frac{\partial R_t}{\partial I_t} - 1$$

On the other hand: consumer's rate of time preference for consumption in period t rather than period τ = marginal rate of return for saving = average rate of return for saving = saving deposit interest rate = loan interest rate = entrepreneur's marginal internal rate of return from investment on the tth marketing date with respect to the τth date. That is:

Consumption		Bank			Production	
consumer rate of time preference for consumption	=	saving deposit interest rate	=	loan interest rate	=	Entrepreneur marginal internal rate of return from investment

This situation is the case that Islam's Shariah draws and occurs at NUBankCO. Suppose that bank is only an institution who match demand to supply of resources and in this case does not maximize his profit as a profit maximizer whose maximization problem does not include interest rate as an endogenous variable. That is in this case we are confronting with NUBankCo. By NUBankCo marginal efficiency of investment of investors who demand loans will be equal to the marginal rate of time preference of consumers who supply saving deposits. In this case, the welfare of society is maximized. That is conventional banking interest rate is omitted, but the financial intermediary role of the bank is active. It can be shown that NUBankCo also

establishes the Pareto optimality condition in the economy. That is NUBankCo is as efficient as a competitive equilibrium condition in the economy and have extra stability during the time because of non-usury financial intermediaries. This is what Islam's legislator (Shariah) is looking for, that is "Non-Usury Banking System".

Permitted Islamic contracts

NUBankCo will be Islamic in deposit mobilization side. NUBankCo will be Islamic in the loan/credit side if the following Islamic contracts are to be used:

- Beneloan (non-interest loans)¹⁵
- Civil partnership (if expected productivity rate is not conditioned and determined in advance)
- Equity participation (Financing capital needs of joint stock companies or other NUBankCos)
- Direct investments
- Modaraba (if the interest rate is not conditioned and determined in advance)
- Forward delivery transaction (if the price of the commodity at delivery date is not determined and conditioned in advance)
- Jo'aalah (if the interest rate is not determined and conditioned in advance)
- Mozara'a (if the interest rate is not determined and conditioned in advance)
- Mosaqat (if the interest rate is not determined and conditioned in advance)
- Lease (of durable goods: land, contraction, machinery, and equipment...)

The following contracts are usury, and NUBankCo must not enter into them:

- Prize-based saving deposit mobilization¹⁶.
- Installment sale
- Hire purchase
- Debt sale and purchase
- Compound interest operations

One of the main obstacles to grow Islamic banking is using Islamic contracts in daily banking operations. To improve these operations, banks should increase their activities in financial participation with different investors. To do this, it is crucial for NUBankCo to improve its project evaluation and reappraisal department.

Another point to be mentioned is: since Islamic banking and financial products and contract are originally based on joint real and monetary sectors participation in economic activities, it will be of more importance for NUBankCo to be specialized in special activities. In this regards, examples of specialized NUBankCo will be Agricultural NUBankCo, Industrial NUBankCo, Mining NUBankCo, etc. These banks may be more specialized and may be formed as investment banks.

Foreign exchange transactions

Foreign currency exchange and related operations in the following items are non-usury and acceptable:

- Spot (over the counter exchange of foreign currency)
- Swap (if the interest rate is not used in calculating the exchange rate)

¹⁵ Bidabad and Harsini (2003), Non-usury bank Corporation and contemporary usury and non-usury banking operations. Proceeding of the 3rd bi-annual Islamic economics conference (Islamic economic theory and Iran's economy), pp. 193-224, Economic Research Institute, Tarbiat Modares University, Tehran, Iran, 24-25 December 2003. http://www.geocities.com/bijan_bidabad/sherkat6.htm

¹⁶ see Bidabad and Harsini (2003).

- Option (if the interest rate for two currencies are the same)
- Letter of credit

The following transactions are usuric:

- Future
- Swap
- Option
- Certificate of deposit

Bonds and commercial papers transactions

NUBankCo can only sale/purchase bonds and commercial papers or any other credible papers that their transactions do not involve any time-based discount. This general rule is applicable to the majority of transactions. However, as it is discussed by Bidabad and Harsini (2003) majority of commercial papers and bond have due dates and any discount on their transaction is usuric, but payment/receive of commission fees are acceptable and non-usuric. The commission fee is the amount of proportional excess/reduction in bond, commercial papers and other papers sale/purchase, and it is not time-dependent. However, the commission fee is also to somehow shariah incompliant and “Hagh'ol' zahma” (حق الزحمة), and “Hagh'ol'goaleh” (حق الجعالة) are shariah compliant, and we do not discuss them here.

Precious metals transactions

Precious metals transaction (البيع الصرف) by money is not usuric, but the lease of them is usuric. Though participation with goldsmith or silversmith without conditioning and determining the lease rate are non-usuric.

Cash and draft operations

Cash and draft operations are done in NUBankCo without any trouble and should be based on Hagh'ol'zahmeh. Hagh'ol'zahmeh is some kind of compensation against the produced services and should not be generally proportional to the nominal amount of monetary engaged in that service - especially for banking services. Since the bank offers service and should be compensated based on the burden cost of the produced service. For example, for a transfer payment of 100\$ banks compensation would be 2\$, and the latter figure (2\$) should be the same for 1000\$ transfer payment. Since the cost of service does not change and therefore the revenue of the service should not be increased too. Contradiction to this problem wherever is acceptable that the cost of service grows up as the amount of nominal money grows up.

However, cash and draft operations use bank free reserves. The bank's income from these operations will be added to other bank's income streams and finally will be distributed to the NUBankCo's shareholder/depositors and anyhow becomes non-usuric.

Credit operations

In contrast to other banks, this operation in NUBankCo is non-usuric. The method of credit charging is as follows: Assume that Bank is going to grant credit to his client based on the client's previous deposits. The question will be: what is the non-usuric interest rate to charge the client? That is, what interest rate, the bank should adopt to keep his operation non-usuric. To respond this question, suppose a client has deposited \$A for a duration of t months (less than 12 months) at NUBankCo, and at the present time the financial period has not been completed, and NUBankCo accounts settlement has not occurred. The client is requesting \$B loan credit for the duration of s months in excess of his \$A deposit at NUBankCo. The following situations may be encountered:

If $A \times t = B \times s$ Bank should not pay/receive interest to/from the client.

If $A \times t > B \times s$ Bank should pay the following interest payment to the client based on the calculation of share (deposit) profit rate (r): $(A \times t - B \times s) \times r$.

If $A \times t < B \times s$ Bank should receive the following amount from his client: $(B \times s - A \times t) \times r$.

Beneloan accounting

Beneloan is a non-interest loan. As it is discussed by Bidabad (2004) receive/payment of interest in consumption loans is usuric¹⁷. In nowadays banking beneloan is less observed. That is, there is no incentive for banks to grant non-interest loans. But beneloan is very important to Shariah and Islamic banking accordingly.

Government as a bailing institution should allocate some resources to consumption loans (without interest). In governmental NUBankCo and also mixed private-governmental NUBankCo the method of transparent accounts settlement is as follows: If the NUBankCo is mixed private and governmental, the government share is decreased equal to his beneloan grants for consumption loans. On the other hand, assume:

D_g	Government deposit at NUBankCo
T_g	Duration of government deposit at NUBankCo
q	Nominal value of each share
m	Number of private depositors
D_i	Deposit of the i^{th} individual
t_i	Duration of i^{th} individual deposit
$n_i = \frac{D_i t_i}{q}$	Number of shares of the i^{th} individual
$n_g = \frac{D_g t_g}{q}$	Number of shares of government
$n = n_i + n_g = \frac{1}{q}(D_i t_i + D_g t_g)$	Total number of shares
$\pi = R - C$	NUBankCo's profit: revenue (R) minus cost (C).
$r = \frac{\pi}{n} = \frac{q\pi}{D_i t_i + D_g t_g}$	Profit of each share
L	Amount of beneloan, granted by the government
t	Number of months of beneloan repayment

Now if we have:

¹⁷ حضرت دكتور حاج نور علي تابنده مجذوبعليشاه (1380ه.ش.), مجموعته مقالات فقهيه واجتماعيه، انتشارات حقيقت: See:

$$L \times t = D_g \times t_g$$

That is government allocates all her deposits to beneloan thus, in profit distribution after settlement will gain nothing. The profit of each share will be:

$$r = \frac{q\pi}{D_i t_i + D_g t_g - Lt} = \frac{q\pi}{D_i t_i}$$

If $L \times t < D_g \times t_g$ that is, beneloan payment of government is less than the value of government deposits, the profit of each share will be equal to:

$$r = \frac{q\pi}{D_i t_i + D_g t_g - Lt}$$

and the payment to the government for her share will be equal to

$$r \times (D_g t_g - Lt)$$

In the case of $L \times t > D_g \times t_g$, government debt will be equal to the above amount.

NUBankCo advantages

- The better features of good corporate governance can be found in NUBankCo.
- NUBankCo interest payment to depositors is not usuric. Since it is a kind of corporate distribution of profit/loss and completely is Shariah compliant. This kind of depositing is a kind of Modaraba between depositors and NUBankCo.
- In receiving interest from the loans granted to investors, NUBankCo must use only the Islamic contracts (products). In this regard, if the bank allocates his resources to a specific branch of investment in special activities as specialized as possible, will be more efficient.
- By eliminating usury and creating a direct link between loans demand and deposits supply, banking operation will be more stable with less risk and therefore more secure. On the other hand, it has a built-in securitization process.
- According to the definition of share in NUBankCo, it will be very simple to eliminate different interest rates. NUBankCo can work with one and with different interest rates regarding its articles of associations. Though the unique interest rate for deposits adds more transparency. In this case, the profit distribution will be more righteously. By this simplification demand and time and saving deposits can be treated the same (and may also be treated differently in lots of shapes as a company's articles of association force).
- Private/government foreign/domestic legal/real entities, and any mix of them are free to deposit at NUBankCo and participate in profit/loss sharing. NUBankCo may also invest his deposits in other NUBankCo, simpler than other participations.
- Because of increasing financial security, mobilization of resources, and productivity of NUBankCo will be more than conventional banks. Thus NUBankCo will be more efficient.
- NUBankCo will establish a sound stable financial sector and consequently stable real sector.
- NUBankCo will increase social welfare through the efficient allocation of resources.

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