

Accounting Procedures for Profit and Loss Sharing (PLS) Banking

Bijan Bidabad¹

Mahmoud Allahyarifard²

Abstract

Profit and Loss Sharing (PLS) banking is foundation and basis of Islamic banking. Despite of passing nearly half a century from using Islamic banking, lack of well-suited executive mechanisms in different aspects has caused the most of non-usury banking models somehow enter into usury transactions realm. The PLS banking implementation needs specific regulations, accounting and financial systems, risk management, information systems and also particular organization infrastructures. In accounting and financial procedures some affairs namely the calculation procedure of profit and loss share of beneficiaries and partners of investment return, accounts segmentation even in detailed accounts for different banking products, accounting documents, Islamic contracts, methods of calculation of bank's commission and cash or accrual accounting system are some significant items that should be considered for fulfillment of real PLS banking. The main specification of accounting and financial system in PLS banking can be introduced in some features of namely, connection of debt items to asset items, traceability of depositor's financial resources on investment projects, detailed accounts segmentation capability, reality and transparency of account flows, evaluating capability of Musharekeh (partnership) and Pazireh (subscripted) certificates on amount and investment duration, partners' initial capital including cash and non-cash and in form of innovation, entrepreneurship, technology, project management and control.

In this paper we are going to consider the accounting and financial system of PLS banking as a module of suggested package for the executive real PLS banking approach.

Keywords: Profit and Loss Sharing, Non-usury banking, PLS, Riba, Islamic banking

JEL: L86, L87, G21, G24

Introduction

Profit and Loss sharing (PLS) can be considered as a doubtless approach for fulfillment of Islamic Banking. Despite of extending of Islamic banking in last decades, the fulfillment of this approach due to inadequate executive infrastructures namely regulation, supervision and management mechanisms and in other words, due to increasing of operational risk and lack of compiled and designed practical mechanisms always mixed with usury banking processes. Based on Bidabad, Allahyarifard (2008)³, lack of financial fluctuations in PLS banking and other characteristics of this kind of banking system namely no significant gap between assets and liabilities over time and inconsistency between them in comparison with conventional banking and in more technical words due to decreasing liquidity, credit risks and

¹ -Professor of economics, and Senior Consultant of Islamic Banking and Finance, Bank Melli Iran, Tehran, Iran.

<http://www.bidabad.com> Bijan@bidabad.com Bidabad@yahoo.com

² -Expert of R&D Dept., Bank Melli Iran, Allahyarifard@gmail.com, M.Allahyarifard@bmi.ir

³ - For more information see: Bidabad, Bijan; Mahmoud Allahyarifard, The Executive Mechanism of Profit and Loss Sharing (PLS) Banking. <http://www.bidabad.com/doc/PLS-banking-Executive-Mechanism.pdf>

capital adequacy cause this kind of banking system will become more interesting across the globe.

PLS Banking model in addition to elimination of usury (Riba), causes depositors to obtain real economy return rate so it prepares suitable condition for stability of monetary and financial markets and a convenient manner for investment projects financing as well. surely, fulfillment of this sketch entails comprehensive consideration on the whole required infrastructural sectors namely regulations, instructions, information technology, products and services, customer groups segmentation, financial instruments, risk management, organization, accounting and financial systems.

The previous researches and studies done on profit and loss sharing (PLS) by economists of Moslem and non-Moslem countries are emphasizing on theoretical dimensions and advantages and disadvantages of this banking method. The main given reasons for undevelopment of this kind of banking are most on infrastructure bottlenecks, increasing of operational risks and also its newness problems and all the above mentioned reasons are known plausible reasons for PLS banking slack. Our theoretical and operational researches on profit and loss sharing (PLS) indicate advantages of this kind of banking and executive solutions for each of ambiguous cases in form of a presentable executive package have been given.⁴ Generally, in executive PLS banking sketch, the main pillars are depositors, bank, entrepreneur, trustee agent and arbitration.

This paper clarifies a part of executive solution package for PLS banking and we are going to highlight accounting and financial system processes as accounting documents, non-usury profit calculation method and settlement with all parties.

PLS Accounting Experiences

The international accounting standards and procedures of institutions Offering Islamic Financial Services (IIFS) indicate three main categories of transactions in balance sheet as “Sales Financing”, “Lease Financing” and “Equity Financing”.

Sales financing: In this kind of transactions, bank buys required goods of applicants as cash and books it in her own assets side then the transacted goods are resold to applicants by bank. Based on IIFS, this kind of transactions is based on Murābahah, Bay’ Muajjal (Froosh Aghsati) and Salam (Salaf); and the price is determined on the basis of cost price plus markup.

Lease financing: In this kind of transactions, bank provides services derived from an asset to the customer and in addition to keep herself as owner of the asset, makes income for both depositors and

⁴ - For more information take a look to following references in this regard:

- Bidabad, Bijan, Mahmoud Allahyarifard, Assets and Liabilities Management in Islamic Banking, Paper presentet at the 3rd International Conference on Islamic banking and Finance. Bidakara, Jakarta, Indonesia, 23 -26 February, 2010. Proceeding of the Conference: Risk Management, Regulation and Supervision, pp. 396-413. <http://www.bidabad.com/doc/alm-english.pdf>
- Bidabad, Bijan and Mahmoud Allahyarifard, "Implementing IT to fulfill the profit and loss sharing mechanism", Islamic Finance News (IFN) Journals, Vol. 3, Issue 3, 6th February 2006. <http://bidabad.com/doc/summery-pls-it-1.pdf>
- Bidabad, Bijan and Mahmoud Allahyarifard, "IT role in fulfillment of profit and loss sharing", Proceeding of The 3rd International Islamic Banking and Finance Conference, Monash University, Kuala Lumpur, Malaysia, 16th and 17th November 2005. <http://www.bidabad.com/doc/english-pls-5.pdf>
- Bidabad, Bijan, 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. Reprinted in: National Interest, Journal of the Center for Strategic Research, Vol. 2, No. 1, winter 2006, pp. 72-90. Tehran, Iran. <http://bidabad.com/doc/reba-en.pdf>
- Bidabad, Bijan, Non-Usury Bank Corporation (NUBankCo), The Solution to Islamic banking, Proceeding of the 3rd International Islamic Banking and Finance Conference, Monash University, KL, Malaysia, 16-17 November, 2005. <http://bidabad.com/doc/NUBankCo-en.pdf>

herself from asset returns. The main product based on this kind of transactions that is prepared by Institutions Offering Islamic Financial Services (IIFS) is based on floating profit rate and "Ijarah be Sharte tamlik" (Ijarah Muntahia Bitamleek) is one of these contracts.

Equity financing: In this kind of transactions, bank as a financier prepares a fraction of required capital for project financing on behalf of depositors and finally at the time of exploitation, depositors will become as shareholders of project of newly established corporation and subsequently they will provide her partnership in investment project return as well. The main financial instruments on this kind of transactions are Mudarabah and Musharakah.

Considering accounting standards, it is inferred that the main compiled standards at both sides of assets and liabilities a dual-type usury and non-usury banking accounting methods with fixed and floating rates of returns of transactions are used. The international accounting standards and procedures for profit sharing transactions titled by Profit-Sharing Investment Account (PSIA) in balance sheet have been written by Accounting and Auditing for Islamic Financial Institutions (AAOIFI) in which the allocation manner of profit among Investment Account Holders (IAH) is considered on PSIA basis by "The Separate Investment Account" and "Pooling" Methods:

The separate investment account method: In this method, the yields of assets are separable into joint and non-joint. Based on this method, direct costs and other related costs namely non-performing loan (NPL) reserves and also other disclosed reserves are deducted from gross income of bank then profit will be distributed between IAH and IIFS. In other words, the net profit is distributed between shareholders and financiers. On the other side, proportion to the share of partnership in profit, a fraction of distributable income between IIFS and IAH is deducted as Profit Equalization Reserve (PER).⁵

Pooling Method: Based on this method, the whole cost are paid through a joint account including direct or indirect costs related to either financing or operational costs in which they are deducted from gross income. In this method a fraction of net income under title PER is also considered as well before the profit is distributed between IAH and IIFS according to the approved mutual agreement.⁶

After approving "non-usury banking law" in early 1980's in Iran, despite of the concepts and theoretical bases complied with Islamic Sharia, accounting processes for Musharekat Madani (civil partnership) and Mudarabah, similar to other countries mingled with usury banking in such a way that there is not any systematic connection between liability items (deposits) and asset items (credit facilities) on Islamic contracts based transactions. Lack of well-suited backbones and infrastructures for accounting systems, information technology and also accounting processes for separating detailed accounts of deposits and lack of systematic connection between account numbers on debt side and credit facilities on asset side, despite of considering an account as "joint current account for Musharekat Madani", in real executive process, the profit of transactions is calculated just on expected profit that comes from cost of fund plus markup and not based on real return of capital. On the debt side, based on attorney contract (Vekalat) the banks make contract with investment account holders, but due to infrastructural bottlenecks similar to transactions on asset side, investment account holders receive a pre-determined interest rate in part in advance (as transitory interest) and at the end of the fiscal year, final interest rate is calculated by adding a small (one or two) percentage to transitory interest rate to make final interest payments.

⁵ - Profit Equalization Reserve (PER): is a fraction of income that is considered and is payable to IAH for equalization of profit that comes from investment in different stages of business cycles. The essential purpose of this reserve is to prevent the decrease of profit of this kind of accounts. On the other words it is considered for mitigating the risk that comes from falling down of investment return in different economic conditions. For more information see: IFSB Capital Adequacy Standard (CAS), December 2005. http://www.ifsb.org/docs/compilation_guide.pdf

⁶ - For more information see the above references.

Table 1 :General structure of assets and liabilities in PLS branch/Bank

<p><u>Assets</u></p> <p><u>Current Assets</u> Cash and short-term funds Investment accounts for specific finitude projects Investment accounts for endless projects Musharekeh and Pazireh certificates Receivable accounts Claims</p> <p><u>Fixed Assets</u> Tangible assets Intangible assets (i.e. goodwill) Other assets</p> <p><u>TOTAL ASSETS</u></p> <p><u>Off Assets</u> Entrepreneur's commitments and contingencies (collaterals, guarantees and insurance)</p> <hr/> <p><u>Liabilities and owner's equity</u></p> <p><u>Liabilities</u> Current accounts for depositors, entrepreneurs and other partners Musharekeh (partnership) certificates for specific finitude project Musharekeh (partnership) certificates for basket of projects Musharekeh (partnership) certificates for sharing in PLS branch's profit and loss Pazireh (subscribed) certificates for endless projects Other liabilities Provision for taxation and zakat</p> <p><u>Equity</u> Ordinary share capital The share premium account Reserves Accumulated profit /Loss Shareholder's equity</p> <p><u>TOTAL LIABILITIES AND SHAREHOLDERS'</u></p> <p><u>Off liabilities</u> Bank commitment and contingencies for PLS banking products</p>
--

Asset and Liabilities structure in PLS Banking

Acquaintance with PLS banking accounting system processes entails to get familiar with PLS banking products, services and also asset and liability structure of this kind of banking method. Generally

the whole PLS banking operations, whether on the PLS branch or bank, are illustrated in the following simulated balance sheet. One of the specifications of PLS banking in view of financial statements, particularly balance sheet is the relation manner of the main items of liabilities (resources) and assets (utilizations). Resources and utilizations equality as a fundamental pillar in the proposed PLS banking mechanism is known as a significant advantage of this method. Although resources and utilizations gap might be happened in this kind of banking as well because of different reasons; namely due to the lack of appropriate assessment of project resources needs, entrepreneur's fault or delinquency and increasing of inflation rate. But all events and risks will be mitigated and managed by compiled instructions regarding risk management. For example in case of resource deficit for completing the project if there is not any fault or deficiency from entrepreneur side the logistics for issuance of new Musharekah (partnership) and Pazireh (subscribed) certificates will be considered by bank. The gravity center of financial activities in this proposed sketch is revolved on Musharekah (partnership) and Pazireh (subscribed) certificates pivot that are issued by bank respectively for specific end (finitude) and endless projects in debt side based on Joaleh and Solh contracts.

In table 1 the simulated balance sheet of PLS bank is shown. Before introducing the accounting items of this table we will have a bird's eye view on the financial operations of this banking method. Based on Bidabad-Allahyarifard (2008)⁷ on PLS banking architecture, the products in debts side encompass different types of Musharekah (partnership) certificates for specific finitude projects (namely Musharekah certificate for profit and loss sharing of PLS branch, Musharekah certificate for a specific project, Musharekah certificate for basket of projects), and Pazireh (subscribed) certificates for endless projects financing. The main debts items in the balance sheet of PLS branch or bank compromises of Musharakeh and Pazireh certificates. In the assets side of PLS banking accounts, the main asset based items are investment accounts for specific finitude and endless projects as well.

The Core Items of PLS Banking Balance Sheet and Accounting Operations

The PLS banking accounting operations can be separated into three parts of balance sheet (i.e. assets, liabilities, equities). At the beginning, we discuss core items from equities and liabilities side of balance sheet.

The Owner's Equity in PLS banking: The owner's equity indicates the balance of the benefits of beneficiaries after deducting debts items in PLS bank assets. In PLS bank similar to other commercial businesses, owner's equity follows the main strategic aims of the organization, namely legal and booked capital determination, distribution policy for equities' profit. According to table 1, equity owner encompasses equity shares, share premium (deficit), reserves either legal or prudential and accumulated profit (loss).

Share capital: Share capital is equal to the par value of issued shares for both legal equity and increase in PLS bank capital (equity capital).

Share premium: In case of selling PLS bank shares more than par value at market is termed share premium otherwise share deficit.

Reserves: Reserves in PLS banking is divided into two parts of legal and prudential reserves. Prudential reserve is established for strengthening financial stability of bank against future uncertainty from transacting Musharekah and Pazireh certificates. Basically contrary to prudential reserve, legal reserve is not mandatory in which the rate or amount of this kind of reserve is considered by general assembly of shareholders and accordingly becomes indispensable.

⁷ - Bidabad, Bijan and Mahmoud Allahyarifard, The Executive Mechanism of Profit and Loss Sharing (PLS) Banking Mechanism of Profit and Loss Sharing (PLS) Banking. <http://www.bidabad.com/doc/PLS-banking-Executive-Mechanism.pdf>

Accumulated Profit /Loss: Accumulated profit is applied to undivided net profit of PLS bank and it is formed by previous fiscal year profit plus current not distributed profit among shareholders. Accumulated loss is also an indicator of current profit plus previous fiscal years losses. Accumulated profit/loss doesn't indicate the amount of cash funds in PLS bank. On the other hand, undivided profit would be considered for the sake of keeping liquidity position of PLS bank strong.

Debt Items in PLS banking: The debt items in PLS banking are in terms of PLS product types, namely Musharekah (for specific finitude projects) and Pazireh (subscribed) certificates⁸ (for endless projects) as follows:

- Musharekah certificate for projects with specific end
- Musharekah certificate for the bank's branch
- Musharekah certificate for a basket of projects
- Pazireh certificate for endless projects
- Intermediate current account for Musharekah and Pazireh certificates and entrepreneur account.

Musharekah certificates for finitude projects with specific end: In this kind of debt item, depositors invest her money resources on specific participatory project to participate on profit and loss of an investment project. Booking disciplinary article for concluded contracts with depositors is formed in form of Joaleh and Solh according to Islamic banking contracts. Accounting operations in this kind of debts are as follows (it is necessary that a disciplinary article be booked for each contract and they must be shown at the off-balance part of balance sheet):

Entry = Debit: Disciplinary account for contracts- Joaleh/Solh

Credit: Counterpart of disciplinary account for contracts

Entry = Debit: Depositors integrated accounts (depositor's IBAN)

Credit: Musharekah certificate for specific project (detailed customer account number for specific project)

Musharekah certificate for PLS bank's branch: This kind of debt item is similar to Musharekah certificate for specific project with this difference that depositor purchases this type of Musharekah certificate to participate in profit and loss of PLS bank's branch to attain risk coverage. The accounting operations are as same as above item.

Musharekah certificate for a basket of projects: The accounting specification of this kind of debt is as same as latter case with this difference that depositors for decreasing risk and participating in profit and loss of a basket of projects (provided by bank) would prefer to purchase this type of Musharekah certificate. The accounting operations in this type of debt are as same as pervious one.

Pazireh certificate for endless projects: For participating on construction of manufacturing units and for transforming depositing to shareholding of Pazireh certificate, depositors purchase Pazireh certificates. The accounting operations are as follows:

Entry = Debit: Disciplinary accounts for contracts-Joaleh/Solh

Credit: Counterpart of disciplinary for contracts

Entry = Debit: Deposit integrated accounts (depositor's IBAN⁹)

⁸ - Ibid

⁹ - International Banking Account Number (IBAN)

Credit: Pazireh certificate for specific project (detailed customer account number for specific project)

Assets: The main asset side items in PLS banking are as follows:

- Investment accounts for finitude projects (with specific end)
- Investment accounts for endless projects

Investment accounts for (finitude and endless projects): These accounts indicate the money payment to projects through provided resources of depositors and entrepreneur for investment projects and should be shown in asset side. The accounting documents at time of contracting with entrepreneur, disciplinary documents for taken collaterals received from entrepreneur and also the accounting disciplinary articles for Musharekat-Madani (civil partnership) contract signed by entrepreneur should be booked according to corresponding instructions as follows:

Entry = Debit: Disciplinary accounts for collaterals and guarantees (for mortgaged collaterals)

Credit: Counterpart of disciplinary accounts for collaterals and guarantees

Entry = Debit: Disciplinary account for contracts with entrepreneur-Musharekat Madani

Credit: Counterpart of disciplinary accounts for contracts

Accounting articles at the time of booking required capital for specific project or a basket of projects financing are as follows:

Entry = Debit: Investment accounts for finitude project-Musharekat Madani (detailed account for PLS project) share of depositors brought (debt equity)

Debit: Entrepreneur's integrated accounts (entrepreneur IBAN)

Credit: Musharekat Madani account (detailed account for PLS project)

The accounting documents for bank's commitments for future money resources payments according to confirmed physical project progress by Amin (trustee agent) as follows. These accounting items are shown at the off balance sheet:

Entry = Debit: Counterpart of bank commitments account for Musharekat Madani (detailed account on PLS project)

Credit: Bank commitments account for PLS transactions (detailed account on PLS project)

If a fraction of entrepreneur's brought is as non-cash then accounting article will be booked as:

Entry = Debit: Temporary debtors account (detailed account for PLS project)

Credit: Musharekat-e-Madani joint account (detailed account for PLS project)

Accounting article at the time of presenting non-cash brought of entrepreneur is as follows:

Entry = Debit: Musharekat-e-Madani joint account (detailed account for PLS)

Credit: Temporary debtors account (detailed account for PLS project account)

At the time of issuing deposits or mortgaged collaterals insurances in favor of bank, the accounting articles are as booked as follows (The articles for insurance and collaterals must be booked equal to the same amount as exposure separately).

Entry = Debit: Disciplinary account for Insurance of collaterals and guarantees (detailed account for PLS project)

Credit: Counterpart of disciplinary account for insurance of collaterals and guarantees (detailed account for PLS project)

The whole payments procedures of money resources to entrepreneur by bank are prepared by the supervisory unit of PLS bank (Amin). Accounting articles for utilization of required capital for injecting money resources to the investment project are as follows:

Entry = Debit: Musharekat-e-Madani joint account (detailed account for PLS project)

Credit: Entrepreneur's integrated accounts (IBAN)

Profit calculation and distribution procedure in PLS banking

Equation (1) indicates the calculating manner of rate of return in PLS banking products for specific project or basket of projects (Products 1 and 2).

$$r = \frac{L - A^a}{A^a} \quad (1)$$

L : The sold value of project or basket of projects

A^a :Investment expenditure

Based on the following conditional relation, in case of equality between estimated required money resources and money allocations for PLS product type 1 (for specific project) or product type 2 (for basket of projects) then the estimated rate of return is equal to real rate of return of the project(s) and profit share for each depositor can be calculated by equation 2.

$$\text{If } \sum_{i=1}^n D_i^e t_i^e = \sum_{i=1}^m D_i^a t_i^a \implies r^e_{PLS} = r^a_{PLS}$$

$$a_i = \frac{D_i t_i \pi}{\sum_{i=1}^n D_i t_i} \quad \text{Share of depositor I in participation} \quad (2)$$

D_i : Amount of deposit brought by depositor i for PLS project

t_i : Duration of deposit on project by depositor i for PLS project

π : Specific project return or a basket of projects return or net profit of PLS branch

Equation (3) shows the total shares of sharing in profit and loss for specific project, basket of projects and PLS bank's branch and equation (4) indicates number of shares of a specific depositor (i).

$$n = \frac{\sum_{i=1}^m D_i^a t_i^a}{q_0} \quad (3)$$

q_0 : Par value of each share

n : Total number of shares

$$n_i = \frac{D_i^a t_i^a}{q_0} \quad (4)$$

n_i : Number of shares belong to specific depositor (i)

Accounting operations at the time of settlement for specific end (finitude) projects in PLS banking

After completion of the project on Musharekate-Madani (civil partnership) and selling project by entrepreneur under supervision of bank through auction practices and at the time of getting the amount of the sold project or basket of projects from the entrepreneur or related integrated account, the following articles are issued:

Entry = Debit: Entrepreneur's integrated accounts (IBAN)

Credit: Musharekate-Madani (Civil partnership) joint account (detailed account for PLS project account) as equal amount of the sold project.

At the time of paying entrepreneur share back and settlement accounting for pulling the investment account items out from asset side through Musharekate-Madani joint account, the following articles are issued:

Entry = Debit: Musharekate-Madani (Civil partnership) joint account (detailed account for PLS project) equal to the sold project amount

Credit: Investment account for specific end projects -Musharekate-Madani (detailed account for PLS project) share brought by depositors

Credit: Entrepreneur's integrated accounts (IBAN) for settlement of brought share of entrepreneur

At the time of settlement of the amount of Musharekah for specific project or basket of projects by paying back depositors share at the debt side, the pulling out procedures are done through the following accounting articles:

Entry =Debit: Musharekah certificate for specific project, basket of projects (detailed account for PLS project)

Credit: Depositors integrated accounts (IBAN) for share of Musharekah certificate (principle amount of Musharekah certificate)

The remainder balance of Musharekate-Madani joint account on the detailed account for considered project after paying back of the principle of capital indicates the amount of profit (loss). So based on the same above equation (2) the profit share of depositors, entrepreneur and bank can be calculated and also the commission amount (Karmozd) of bank can be calculated according to the corresponding instructions and the accounting procedures for the settlement of Musharekah certificate for specific end projects as follows:

Entry = Debit: Musharekate-Madani joint account (detailed account for PLS project)

Credit: Transaction gain (detailed account on PLS project) share of bank commission (Karmozd) for Haqol-Amal, supervision and project management

Credit: Entrepreneur's integrated accounts (IBAN) for profit share including cash or non-cash brought

Credit: Depositors integrated accounts (IBAN) for share of Musharekah certificate returns

At the end of settlement operations, the disciplinary accounts including contracts, insurances, and collaterals must be closed as follows:

Entry = Debit: Counterpart of disciplinary accounts for contracts

Credit: Disciplinary account for contracts, Joaleh, Solh

Entry = Debit: Counterpart of disciplinary accounts for insurance of collaterals and guarantees (detailed account for PLS project)

Credit: Disciplinary account for insurance of collaterals and guarantees (detailed account for PLS project)

Entry = Debit: Contracts disciplinary account

Credit: Contracts disciplinary account for Musharekate-Madani

The above issued articles are applicable for all products (Musharekah certificates) on specific end (finitude) projects basis.

Estimation of base price for auctions in specific end (finitude) projects

In English auction method, a low base price is determined and offered then on auction basis, the property is sold at the highest offered price. Whereas in Dutch auction a base price that has not any demand is offered and then by sorting offered prices for purchasing property the property is sold. In both methods a base price is necessary. In Profit and Loss Sharing (PLS) banking to estimate the base price for specific end (finitude) projects is calculated through the following procedure, then it is offered on the internet based PLS banking portal, and the purchasers are invited to offer their priced. To estimate the base price the equations (5) is used. This equation indicates the estimated base price equal to the total nominal principle capital inflated by coefficients of inflation rates (p_i) over the constructing duration, bank income for primary and supplementary assessments and supervision (Co), entrepreneur brought in terms of management, entrepreneurship and technology (TME) and also opportunity cost of capital (OCC). Equation 6 indicates the adjusting coefficient of the par value of the project (principle).

$$BP = \sum_{i=1}^m D_i^a t^a_i (1 + \sum_{i=1}^n p_i + Co + TME + OCC) \quad (5)$$

$$BP\% = \frac{BP - \sum_{i=1}^m D_i^a t^a_i}{\sum_{i=1}^m D_i^a t^a_i} \quad (6)$$

BP: The estimated base price for auction

BP%: Adjustment coefficient

p_i : Inflation rate at i^{th} year

C_o : Coefficient for bank incomes for assessment, supervision and capital management services

TME: Coefficient for entrepreneur's brought (technology, management, entrepreneurship)

OCC: Coefficient for opportunity cost of capital over construction duration

Accounting operations at the time of settlement for PLS banking for endless projects

The whole entries and accounting procedures till doing settlement time for Pazireh certificate holders are same as the accounting procedures for Musharekah certificates. After finishing the endless project construction period and at the beginning of the exploitation period, depending on issuance of Pazireh certificates for either entrepreneur's corporation or a newly established corporation, bank transforms Pazireh certificates to shares, anyhow all Pazireh certificates holders must be transformed to shareholders of investment project or newly established corporation in proportion to the brought capital and duration of partnership according to equation (2). All issued Pazireh will be transformed to corporation's capital account and based on equation (2) equities are issued. For settlement accounting, bank's supervision and capital management services fees and other expenditures must be deducted from the entrepreneur's or newly established corporation account as follows:

Entry = Debit: Entrepreneur's or newly established corporation integrated account (IBAN) equal to bank's capital management and supervision fees

Credit: Transactions income (detailed account for PLS project) share of bank equal to commission (Karmozd) for Haqol-Amal (wage), supervision and project management

For pulling out the Pazireh certificates items for endless projects from debt side of the balance sheet and for performing settlement procedures in accounting system the following entries are issued:

Entry = Debit: Pazirh certificates for endless projects (detailed account for PLS project)

Credit: Investment project account for endless projects (detailed account for PLS project)

Closing disciplinary accounts for contracts, insurance, collaterals are done similar to accounting procedures for specific ends (finitude) projects.

Inflation impact on return of projects

Case 1: Inflation impacts on investment expenditures can be calculated by applying equation (7). Inflation coefficient ρ_{Cost} can be known as adjusting coefficient for increasing investment expenditures of PLS products either type 1 or type 2.

$$\rho_{Cost\ 1} = \sum_i \frac{p^a_i q^e_i}{p^e_i q^e_i} \quad (7)$$

p^a_i : Actual cost price of i^{th} used material in PLS project

p^e_i : Estimated cost price of i^{th} used material in PLS project

q^e_i : Estimated quantity of i^{th} used material in PLS project

Case 2: Effect of cunctation of entrepreneur in doing her commitments on the net return of project is calculated by following equation (8). Based on Amin (trustee agent) evaluation and bank approval, if the

cunctation of entrepreneur has increased project expenditures then the effects of inflation on investment expenditures can be calculated by applying equation (8) and finally can be deducted from the share of entrepreneur's gain.

$$\rho_{Cost2} = \sum_i \frac{p^a_i q^a_i}{p^e_i q^e_i} \quad (8)$$

Inflation effects on PLS project revenues can be calculated by equation (10). Inflation coefficient $\rho_{Benefit}$ is used as increment coefficient of investment expenditures for PLS products of type 1 or type 2.

$$\rho_{benefit} = \sum_j \frac{L^a_j V^e_j}{L^e_j V^e_j} \quad (9)$$

L^a : Actual sold price based on market price of PLS project

L^e : Estimated sold price of PLS project

V^e_j : Quantity of j^{th} marketable products in PLS project

Using the two calculated coefficients on PLS products (type 1 and type 2), the inflation effect on revenue and expenditure flows is calculated according to equation (10):

$$\rho = \frac{\rho_{benefit}}{\rho_{Cost}} \quad (10)$$

- If the two coefficients ratio indicated by ρ is greater than 1, the inflation flow effect on revenue is greater than the inflation effect on expenditure flow. In other words inflation effect will have more benefits for depositors. In this case, mathematical expectation of the market price of Musharekah certificates will be increased by ρ coefficient.
- If ρ is equal to 1, inflation on revenue and expenditure flows will have a similar effect on investment project. Therefore, because of inflation, mathematical expectation of market price of Musharekah certificates will not be changed.
- If ρ is less than 1, the revenue flow is less affected by inflation than the expenditure flow. In this case mathematical expectation of market price of Musharekah certificates will be decreased with ρ coefficient.

Case 3: Entrepreneur's cunctation from delaying in her duties and commitments in comparison with scheduled timetable: In case of occurring entrepreneur cunctation in which the allocated resources were not utilized according to the contract context and the written commitments, then entrepreneur will be obliged to compensate as same amount as occurring overcharge of project financial flows resulted from her delay to depositors. Based on the entrepreneur reporting instruction, bank monitors the whole financial operations on project and at the time of settlement, the amount of penalty of delay in completing project will be calculated.

$$\text{If } \sum_{i=1}^n D^e_i t^e_i < \sum_{i=1}^n D^a_i t^a_i \rightarrow r^e_{PLS} > r^a_{PLS}$$

The penalty rate for delay will be deducted from share of entrepreneur according to equation (11) at the end of project

$$p = \frac{(\sum_{i=1}^n D^a_i t^a - \sum_{i=1}^n D^e_i t^e_i) \sum_{i=1}^n D^e_i}{\sum_{i=1}^n D^e_i t^e_i} \quad (11)$$

By multiplying the rate of penalty of above equation to total par value (disregard to duration) of the estimated amount of required resources for completing the project, the amount of collectable penalty can be calculated. Evaluation procedure of bank must include profit changes resulted from delay to completion of project regarding increase of project value due to delay.

Basis of PLS banking accounting

There are two accounting methods for booking income and expenditure financial flows as follows:

Cash accounting: In this method, incomes and expenditures are recognized and booked at the same time of receipt or payment. In other words, before fulfillment of receipt or payment of cash the transaction is not booked in. In this method, cash profit for a fiscal year is equal to the balance of the whole cash receipts and payments of income and expenditure flows.

Accrual accounting: In this method income and expenditure are recognized and booked according to time of performance of transaction, even any receipt or payment not made. Accrual accounting is based on two accounting principles of “realization principle” (Income must be recognized and booked at the time of transaction disregarding occurrence of cash payment or receipt) and “accordance principle”(expenditures of each fiscal year should be deducted from the incomes generated at the same period).

In PLS banking, since one of the PLS products is profit and loss sharing on PLS bank outcomes and Musharekah certificate holders participate on real profit or loss of the branch, so income and expenditure flows must be recognized and booked on accrual-based accounting system. In other words, in case of allocating PLS resources on long term investment projects by bank, and investment returns of the project might be fulfilled gradually in subsequent future years, based on the portion of each expenditures for a project at each year the estimated investment return for each year must be recognized and booked as accrual accounting system. But bank needs to settle profit and loss with Musharakah certificate holders at the end of fiscal year. This process needs some accounting elaborations and inventions such as purchasing the remainder of the certificate holders’ right by bank at end of fiscal year. Another solution is that at the end of each fiscal year a temporary amount equal to net balance of completed projects is paid to certificate holders and final settlement with certificate holders will be done when all the projects corresponding to the year that depositor has participated in profit and loss of bank are completed. In this method income and expenditure are recognized and booked according to time of performance of transaction, and no receipt or payment is made up to the cash realization of transaction. In other words expenditures of each fiscal year should be deducted from the incomes of that year which affected in generation of income. But the payment of cash is due to receipt.

Summary and Conclusions

The foundation of profit and Loss Sharing (PLS) baking is based on participation of depositors in investment returns of real economy sector, so the dissimilarity of PLS banking accounting system and conventional banking accounting system is inevitable and it is necessary to define a new specific skeleton for PLS banking to fulfill a specific accounting system for this kind of banking method. The PLS banking accounting system must be designed in such a way that the PLS bank become empowered to trace and

recognize the money resources of depositors on different investment projects. In other words, in PLS banking financial statements particularly in the balance sheet, the monetary resources of depositors at debt side must be recognized and traceable at the asset side of the PLS bank. The reason for this capability is to create ability to allocate the real profit of capital among depositors based on the duration of investment.

Money resources and utilizations equality in this banking method is necessary. In other words it is necessary to have enough resources for project financing of approved projects by PLS bank. In case of coming up some specific risks namely unreliable forecast of required resources for project financing, increasing inflation rate, cunctation or fault of entrepreneur and increasing required capital for project financing will be solved according to compiled instructions in PLS banking. If a project needs more resources, issuance of Musharekah and Pazireh certificates possibility in case of approval of trustee agent of the PLS bank will be considered for recapitalization of the project financing. Separation of financial flows for accounts of each investment project for calculating profit or loss of each project or basket of projects is necessary and inevitable. Accounting entries for PLS banking products for specific end (finitude) and endless projects at both debts and assets sides will be booked in accordance with the process flow for each project financing. After approving the project including finitude or endless projects and starting money resource payment, issuance and selling of Musharekah and Pazireh certificates accounts at the debt side of balance sheet are created. Specific accounts will be created namely Musharekah certificate for specific end, Musharekah certificate for sharing on profit and loss of PLS branch/bank, Musharekah certificate for basket of finitude projects and Pazireh certificate for endless projects in separation of detailed accounts (as parent and child features in database structure). These detailed accounts are booked on basis of integrated account numbers. Value of issued Musharekah and Pazireh certificates by the PLS bank must be equal to required capital for investment project financing approved by PLS bank. In assets side, some investment accounts will be created namely investment project accounts (specific end), investment project accounts (endless) in such a way that the detailed accounts at each category indicate the amount of investment on each project. Value of commitments of PLS bank for investment projects and the related counterpart accounts that come from taking required collaterals from entrepreneurs must be shown in order at the off balance sheet both at assets and debts sides. Accounting articles for insurance of deposits similar to collaterals and guarantees and the disciplinary accounts related to Joaleh and Solh contracts (agreement with depositors) and Musharekate-Madani (civil partnership) contract with entrepreneur will be issued as same as conventional Islamic banking accounting system. Recognizing and booking of income and expenditure flows in PLS banking is issued on accrual accounting system basis.

References

- IFSB Capital Adequacy Standard (CAS), December 2005. http://www.ifsb.org/docs/compilation_guide.pdf
- Bahrain Monetary Agency Issues New Islamic Banking Regulations, Vol. XLV No 5, 4 February 2002.
- Bidabad, Bijan and Mahmoud Allahyarifard, "Implementing IT to fulfill the profit and loss sharing mechanism", Islamic Finance News (IFN) Journals, Vol. 3, Issue 3, 6th February 2006. <http://bidabad.com/doc/summery-pls-it-1.pdf>
- Bidabad, Bijan and Mahmoud Allahyarifard, "IT role in fulfillment of profit and loss sharing", Proceeding of The 3rd International Islamic Banking and Finance Conference, Monash University, Kuala Lumpur, Malaysia, 16th and 17th November 2005. <http://www.bidabad.com/doc/english-pls-5.pdf>
- Bidabad, Bijan, Mahmoud Allahyarifard, Assets and Liabilities Management in Islamic Banking, Paper presentet at the 3rd International Conference on Islamic banking and Finance. Bidakara, Jakarta, Indonesia, 23 -26 February, 2010. Proceeding of the Conference: Risk Management, Regulation and Supervision, pp. 396-413. <http://www.bidabad.com/doc/alm-english.pdf>
- Bidabad, Bijan; Mahmoud Allahyarifard, The Executive Mechanism of Profit and Loss Sharing (PLS) Banking. <http://www.bidabad.com/doc/PLS-banking-Executive-Mechanism.pdf>
- Bidabad, Bijan, Non-Usury Bank Corporation (NUBankCo), The Solution to Islamic banking, Proceeding of the 3rd International Islamic Banking and Finance Conference, Monash University, KL, Malaysia, 16-17 November, 2005. <http://www.bidabad.com/doc/nubankco.html>
- Bidabad, Bijan, Mahmoud Allahyarifard, Assets and Liabilities Management in Islamic Banking. Paper prepared to be presented at the 3rd International Conference on Islamic banking and Finance, Karachi, Pakistan, 27 -27 October, 2008. <http://www.bidabad.com/doc/alm-english.pdf>
- Rammal, H. G. (2003) 'Mudaraba in Islamic finance: Principles and application', Business Journal For Entrepreneurs, Vol.4, pp.105–112. <http://www.westga.edu/~bquest/2004/musharaka.htm>
- Hussain Gulzar Rammal and Ralf Zurbruegg, "Awareness of Islamic banking products among Muslims: The case of Australia", *Journal of Financial Services Marketing* (2007) **12**, 65–74, doi:10.1057/palgrave.fsm.4760060, <http://www.palgrave-journals.com/fsm/journal/v12/n1/full/4760060a.html#bib24>
- Humayon A. Dar and John R. Presley (2000), "Lack of Profit Loss Sharing in Islamic Banking: Management and Control Imbalances", Loughborough University, Department of Economics, Economic Research Paper No. 00/24, <http://www.lut.ac.uk/departments/ec/Reasearchpapers/2000/00-24/erp00-24.pdf>
- Chong, B.S., Liu, M.H, 2007, "Islamic Banking: Interest-Free or Interest -Based", <http://www.efmaefm.org/0EFMAMEETINGS/EFMA%20ANNUAL%20MEETINGS/2007-Vienna/Papers/0019.pdf>
- Khan, M.S., 1986. Islamic interest-free banking. IMF Staff Papers 33, 1–27
- World Bank, 2006. Country brief report: Malaysia. <http://siteresources.worldbank.org/INTEAPHALFYEARLYUPDATE/Resources/550192-1143237132157/malaysia-March06.pdf>