

# THE ISLAMIC GRACIOUS MONETARY INSTRUMENTS: A THEORETICAL APPROACH

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## Abstract

The paper attempts to propose the Islamic gracious monetary instruments under three contracts namely Qardh hassan, Waqf and Gift central bank certificates. All of them provide benefit for the public especially the needies as the givers are generous depositors. However, the central bank and its counterparts still need to manage the funds professionally to produce profit, maintain the values of the funds and prevent business losses. Particularly, the paper exercises those three Islamic gracious central bank certificates for investment based (Mudarabah and Musharakah) financing and trading based (Ijarah and Murabahah) financing. Every Islamic gracious central bank certificate is elaborated mathematically to analyze its economic impact, treatment of profit and loss coming from the business and status of the funds. Then, the paper compares each certificate and explains the term and condition to ideally use it. Finally, the paper finds the unique characteristics, operations and contribution of every Islamic gracious monetary instrument to the economy. Based on the economic impact, nature of the contracts and management of funds, the central bank can now have alternative Islamic monetary instruments to be offered to the generous depositors in order to improve the welfare of the people particularly the needies.

**Keywords** – Qardh hassan, Waqf, Mudarabah, Musharakah

## 1. BACKGROUND

In conducting its monetary operations such as contracting or injecting liquidity from/to the economy, a central bank uses some monetary instruments. The same as conventional monetary operations which have conventional monetary instruments, the Islamic monetary operations have also some Islamic monetary instruments (Chapra, 1996:20-22). However, unlike the conventional monetary instruments which use interest as a price and basis of the transactions, such Islamic monetary instruments use profit and loss sharing, mark up or fee as the concepts and basis of the transactions. In addition, every Islamic monetary instrument should comply with Sharia principles and values.

For example, Sharia requires Islamic monetary operations and every Islamic monetary instrument to be free from interest (*Riba*), from uncertain conditions (*Gharar*) and speculative (*Qimar*) activities, link with the real sector activities and, give value added to the economy. But the most important one, the main objective of the central bank monetary operation in Islamic perspective is to increase the economic activities through relocating unutilized funds to the productive projects in the real sectors (Ahmad, 2000:16-18).

Further, the Islamic monetary operations can be applied with both Islamic commercial (*Tijarah*) contracts and Islamic gracious (*Tabbaru*) contracts. In particular, the former are arranged with: investment based contracts such as *Mudarabah* (profit sharing financing) and *Musharakah* (joint financing); leasing based contracts such as *Ijarah* and; trading based contracts such as *Murabahah* (deferred payment), *Salam* (agriculture financing) and *Istishna* (manufacturing financing). Meanwhile, the latter occupy gracious contracts such as *Qard hassan* (free loan), *Waqf* (endowment), *Ibra* (loan forgiven), *I'arah /a'riyah* (free leasing of non fungible item) or *Hibah* (Gift) (Ayub, 2007:122).

In fact, the application of Islamic gracious monetary instruments in forms of the central bank certificates allows generous depositors to participate in the economy by locating/donating funds to finance projects/business in the real sectors. In addition, it also shows that the orientation of a central bank which issues gracious central bank certificates based on Sharia principles is not merely on seeking profit. While injecting/contracting gracious funds to/from the economy, it aims to foster the economic activities by extending funds to finance investment or trade based financing. For the generous depositors, the main intention of locating/donating funds in the central bank gracious certificates is to seek the bounty of Allah SWT (Lord).

This paper attempts to elaborate theoretical constructions of the application of central bank certificates with gracious contracts (gracious central bank certificates) as underlying contracts in the Islamic monetary instruments. Particularly, it considers gracious contracts of Qard hassan (free loan), Waqf and Hadiah (gift) to employ funds from generous depositors. Upon receiving funds from such depositors through the gracious central bank certificates, it extends funds to finance the productive real sector projects with investment based, leasing based or trading based financing. The most important one, the paper explains the benefit and utilization of applying central bank gracious contracts to the economy which not only comply with Sharia but also increase the economic performance.

## 2. GENERAL ASSUMPTIONS

The paper sets some assumptions regarding monetary operations of a central bank, the motivation of generous depositors to locate funds in the Islamic gracious monetary instruments and, the structures of Islamic gracious monetary instruments and commercial financing contracts. First, the international practices of monetary operations do not allow a central bank to deal with commercial business contracts. It is because the ultimate aim of conventional monetary operations, in the case of monetary contraction, is to reduce liquidity (absorb the excess liquidity) from the economy and hold it until the end period of conventional monetary instruments and vice versa (Zaman, 1986:15-16).

However, unlike such conventional practices, the orientation of Islamic monetary operation is to foster the economic activities by utilizing idle funds in the economy (Darrat and Bashir, 2000:6). Hence, as mentioned previously, absorbing excess liquidity (idle funds) with the Islamic monetary instruments and releasing it to finance productive projects is the ultimate purpose of the Islamic monetary operations. In this case, employing commercial or gracious Islamic monetary instruments is the typical operations of Islamic monetary operations and the paper elaborates the latter Islamic monetary instruments rather than the former.

Indeed, the Islamic gracious monetary instruments are not impossible to be offered to the public. There are always generous depositors who are willing to locate/donate their funds for the sake of the needy. Even, such people should not always come from Moslem depositors because there are also non Moslem depositors who are willing to help others. In the practical level, for example, Bank Negara Malaysia (BNM) ever offered and applied the Qardh hassan central bank

certificate namely Government Investment Issues in 2001 (Hassan and Lewis, 2007:166). It means that the idea of implementing the central bank gracious certificates is workable and the generous depositors gain indirect benefit which is, at least, a more stable and active economy.

The paper considers three Islamic central bank certificates with Islamic gracious contracts namely the Qardh hassan, Waqf and Hadiah central bank certificates. Firstly, the structure of the Qardh hassan (free loan) central bank certificate in particular allows the central bank to use it for the commercial or gracious purposes (Ismal, 2010:5-10). Nonetheless, the central bank is not obligatory to pay any remuneration to the lenders at the end of Qardh hassan period. What is obligatory for the central bank is to return the full amount of Qardh hassan funds in an agreed time to the depositors.

Meanwhile, the structure of Waqf central bank certificate gives permission to the central bank as Nadzir (the manager of Waqf funds) to manage funds for the benefit of the people (the needies ultimately). The owner of Waqf funds is Allah SWT (Lord) and hence the beneficiary of any income coming from Waqf funds is the needies (public) in general. Most importantly, the Waqf funds are not allowed to face losses (El-Gamal, 2006:187). As such, it is not appropriate to be used to finance investment based projects which may probably face business losses. Additionally, the contemporary Islamic scholars permit Waqf in the form of money instead of an asset and with a temporary basis.

Then, the structure of Hadiah (Gift) central bank certificate gives full authority to the central bank to utilize the funds to finance investment based, leasing based or trading based financing (Kamali, 2008:111-112). It is because the central bank is now the owner of such gift funds. Hence, it does not have obligation to pay any reward, return the funds to the givers or extend funds to certain (requested) projects commended by the givers. However, implicitly and explicitly the central bank still has to be responsible for using such funds for the productive economic activities as stipulated by Sharia.

Based on the structures of Qardh hassan, Waqf and Hadiah above and assuming that the Waqf central bank certificate is issued for the temporary basis, it is known that both Qard hassan and Waqf central bank certificates are available for the temporary period meaning that they have maturity date (Shanmugam and Zahari, 2009:20). Consequently, the central bank needs to manage the funds optimally to improve economic performance in the temporary period. Most importantly, the management of both funds should be professional because the central bank bears

all losses coming from such funds. In this case, to minimize the chance of having losses, the central bank might ideally finance government projects which should be maintained professionally by both the central bank and the government and is provided for the benefit of the public.

Meanwhile, the funds coming from Hadiah (gift) central bank certificate are available for permanent period meaning that once they are given, the central bank becomes the sole owner of the funds and is free of using such funds for the productive business purposes (Choudhury, 2004:151). All losses come from the operation of gift funds are born by the central bank. However, the same as managing Qardh hassan and Waqf funds above, the central banks is hoped to ideally finance government projects which have national impact to the economy and public welfare in general.

### **3. THE ISLAMIC GRACIOUS MONETARY INSTRUMENTS**

#### **3. 1. Qardh Hassan Central Bank Certificate**

The application of Qardh hassan central bank certificate starts from offering such certificate to the public available for the certain period. Assuming that the total amount of Qard hassan funds have been collected, called  $X_q$  for the  $t$  period between  $0 < t < n$ ,  $X_q$  will then mature at  $t_n$  in the future. Upon receiving  $X_q$ , the central bank will ideally use it for investment based financing namely Mudarabah and Musharakah financing. Indeed, the economic impact of both Mudarabah and Musharakah financing is higher than other types of Islamic financing. Furthermore, in order to minimize potential losses, such investment based financing should ideally be the government projects instead of private projects as suggested before.

#### **A. Mudarabah Financing**

Mudarabah financing deals with the probability of having profit, to be shared with the business partner (Mudarib or entrepreneur/government) and the probability of having loss to be born solely by the owner of the funds (Shahibul maal) or the central bank itself. The probability of having profit is assumed as  $\alpha$ , the probability of having loss is  $(1-\alpha)$  while  $\alpha$  stands between  $0 < \alpha < 1$ . Further, both the rate of return and rate of loss are represented by  $r_p$  and  $r_l$  with  $0 < r_p, r_l < 1$ . As stipulated in the Mudarabah contract, if the business generates profit, it will be shared and

the ratio is assumed p:q, where p represents portion of profit sharing for the central bank and q is portion of profit sharing for the entrepreneur. The values of p and q stand between  $0 < p, q < 1$ .

With such assumptions, the monthly return ( $R_t$ ) of a Mudarabah project from the first month of its operation ( $t=1$ ) until the last month of its operation ( $t=n$ ) or  $1 < t < n$  is estimated to be:

$$R_t = \left[ (\alpha_p X_q)_1 + \dots + (\alpha_p X_q)_n \right] - \left\{ [(1-\alpha) r_1 X_q] + \dots + [(1-\alpha) r_n X_q] \right\} \text{ or simply} \quad (1)$$

$$R_t = \sum_{t=1}^n (\alpha_p X_q)_t - [(1-\alpha) r_1 X_q] \quad (2)$$

Equation (2) contains two parts, the first part represents positive return or  $\alpha_p X_q$  and the second part is negative return (loss) or  $(1-\alpha) r_1 X_q$ . Figure 1 below illustrates the two parts in a graph. However, the monthly costs ( $C_t$ ) during  $1 < t < n$  are assumed to have fixed costs of C and variable costs of  $cX_q$ , or as formulated in equation (3) below. Figure 2 below illustrates total costs in this Mudarabah financing.

$$C_t = [(C)_1 + \dots + (C)_n] + [(cX_q)_1 + \dots + (cX_q)_n] \text{ or simply} \quad (3)$$

$$C_t = \sum_{t=1}^n (C)_t + (cX_q)_t \quad (4)$$

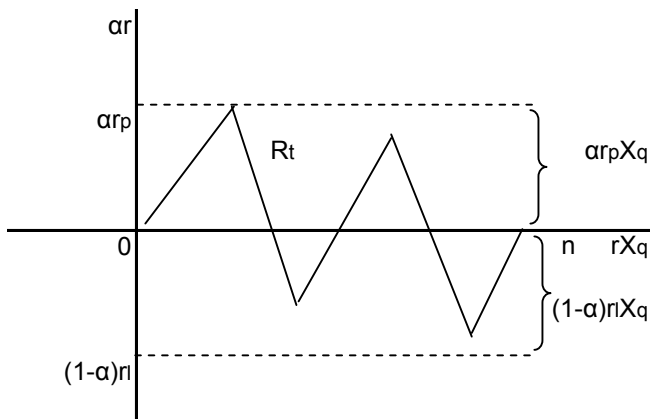


Figure 1. Total Return of Mudarabah

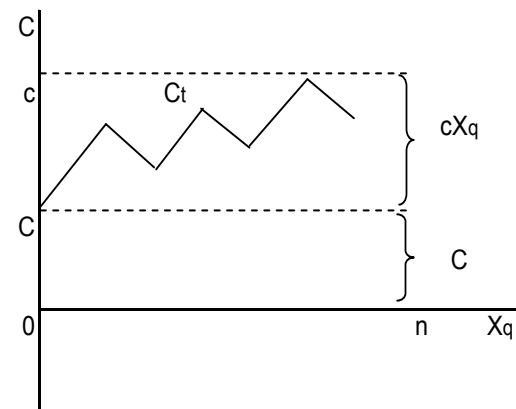


Figure 2. Total Costs of Mudarabah

Then, if the Mudarabah project generates profit or  $\pi_t > 0$ , the formulas of profit and the maximum profit will be:

$$\pi_t = \left[ (\alpha_p X_q)_1 + \dots + (\alpha_p X_q)_n \right] - \left\{ [(1-\alpha) r_1 X_q] + \dots + [(1-\alpha) r_n X_q] \right\} - [(C)_1 + \dots + (C)_n] - [(cX_q)_1 + \dots + (cX_q)_n] \quad (5)$$

$$\text{or simply, } \pi_t = \sum_{t=1}^n (\alpha r_p X_q)_t - [(1-\alpha)r_1 X_q] - [(C)_t + (cX_q)_t] \quad (6)$$

$$\frac{\partial \pi_t}{\partial X_q} = (r_p + r_1)\alpha - c \quad (7)$$

Whilst, if it faces losses ( $L_t$ ), the total costs and negative return are higher than positive return and it can be formulated as in equation (9) below:

$$L_t = \{[(1-\alpha)X_q]_1 + \dots + [(1-\alpha)X_q]_n\} + [(C)_1 + \dots + (C)_n] + [(cX_q)_1 + \dots + (cX_q)_n] - [(\alpha X_q)_1 + \dots + (\alpha X_q)_n] \quad (8)$$

$$\text{or simply, } L_t = \sum_{t=1}^n [(1-\alpha)X_q] + [(C)_t + (cX_q)_t] - (\alpha X_q)_t \quad (9)$$

As mentioned above that the profit is shared between the central bank and the entrepreneur (government) and, the loss is born solely by the central bank, portion of profit sharing for the central bank is:

$$\pi_{cb} = \frac{p}{p+q} \left\{ \sum_{t=1}^n (\alpha r_p X_q)_t - [(1-\alpha)r_1 X_q] - [(C)_t + (cX_q)_t] \right\} \quad (10)$$

and the one for the entrepreneur is  $\pi_e = (\pi_t - \pi_{cb})$ . Following equation (10), the maximum profit for the central bank is when  $(\pi_{cb})' = p/(p+q)[(r_p+r_1)\alpha-c]$ . At the end of the period (n), total Mudarabah investment is matured ( $X_n$ ). Assuming that the government has professionally managed the project so that the central bank does not bear any loss or the total losses are minimum, the total Mudarabah investment at the end of the period will approximately be the same as total Qardh hassan funds from the Qardh hassan central bank certificate plus profit. Then, total of funds at the end of Mudarabah financing contracts ( $X_n$ ) are:

$$X_n = \pi_{cb} + X_q \quad (11)$$

which are certainly higher than  $X_q$ . In this maturity time,  $X_q$  is returned to the holders of Qardh hassan central bank certificate, while  $\pi_{cb}$  and  $\pi_e$  go subsequently to the central bank and the government (entrepreneur).

In the maturity date, because of the application of Qardh hassan central bank certificate, the economy gains benefits at least in the forms of: (i) accomplishment of the government projects which are useful for the public, (ii) utilization of idle funds which prevents inflation, (iii)

reduction of unemployment because they are now working in the projects and, (iv) increasing the national output (GDP) or economic performance. Those benefits are not only enjoyed by the holder of Qardh hassan central bank certificate, the government or the central bank but also the public in general.

## B. Musharakah Financing

Musharakah financing is more or less the same as Mudarabah financing. But, the main difference is that Qardh hassan funds ( $X_q$ ) from the Qardh hassan central bank certificate is commingled with entrepreneur's (government's) funds ( $X_e$ ). Thus, total Musharakah financing or ( $X_m$ ) is  $X_m = X_q + X_e$ . The same as in Mudarabah financing, profit occurs from the business is still being shared between the central bank and entrepreneur. However, loss in Musharakah financing is not born solely by the central bank, instead it is also being shared with entrepreneur (government) according to capital share of each party.

As such, if the probability of having profit is  $\alpha$  and probability of having loss is  $(1 - \alpha)$ , profit is shared with the ratio of  $p : q$ .  $p$  is portion of profit for the central bank and  $q$  is for entrepreneur with the values of  $p$  and  $q$  ranging between  $0 < p, q < 1$ . The same as profit sharing, losses are also shared or  $X_q : X_e$ . Additionally, rate of return and rate of loss are represented by  $r_p$  and  $r_l$  with the values of  $r_p$  and  $r_l$  ranging between  $0 < r_p, r_l < 1$ . With such assumptions, the monthly return ( $R_t$ ) of a Musharakah investment from the first month of its operation ( $t = 1$ ) until the last month of its operation ( $t = n$ ) or  $1 < t < n$  is estimated to be:

$$R_t = \left[ (\alpha r_p X_m)_1 + \dots + (\alpha r_p X_m)_n \right] - \left\{ [(1 - \alpha) r_l X_m]_1 + \dots + [(1 - \alpha) r_l X_m]_n \right\} \quad \text{or simply} \quad (12)$$

$$R_t = \sum_{t=1}^n (\alpha r_p X_m)_t - [(1 - \alpha) r_l X_m]_t \quad (13)$$

The same as in equation (2) before, equation (13) contains positive return or  $\alpha r_p X_m$  and negative return (loss) or  $(1 - \alpha) r_l X_m$ . Considering that the monthly costs ( $C_t$ ) during  $1 < t < n$  are similar to Mudarabah financing with fixed costs of ( $C_t$ ) and variable costs of ( $cX_m$ ), the formulas of costs are written in equations (15) and (16) below. The figures of total return and costs of Musharakah are also the same as in figures 1 and 2, except the total funds is now  $X_m$  instead of  $X_q$ .

$$C_t = \left[ (C)_1 + \dots + (C)_n \right] + \left[ (cX_m)_1 + \dots + (cX_m)_n \right] \quad \text{or simply} \quad (14)$$



$$C_t = \sum_{t=1}^n (C)_t + (cX_m)_t \quad (15)$$

Then, if the Musharakah project generates profit or  $\pi_t > 0$ , the formula of profit and the maximum profit will be:

$$\pi_t = [(\alpha_p X_m)_1 + \dots + (\alpha_p X_m)_n] - \{[(1-\alpha)r_1 X_m]_1 + \dots + [(1-\alpha)r_1 X_m]_n\} - [(C)_1 + \dots + (C)_n] - [(cX_m)_1 + \dots + (cX_m)_n] \quad (16)$$

$$\text{or simply, } \pi_t = \sum_{t=1}^n (\alpha_p X_m)_t - [(1-\alpha)r_1 X_m]_t - [(C)_t + (cX_m)_t] \quad (17)$$

$$\frac{\partial \pi_t}{\partial X_m} = (r_p + r_1)\alpha - c \quad (18)$$

Whilst, if it faces losses ( $L_t$ ), the total monthly costs and negative return are higher than positive return and it can be formulated as below:

$$L_t = \{[(1-\alpha)X_m]_1 + \dots + [(1-\alpha)X_m]_n\} + [(C)_1 + \dots + (C)_n] + [(cX_m)_1 + \dots + (cX_m)_n] - [(\alpha X_m)_1 + \dots + (\alpha X_m)_n] \quad (19)$$

$$\text{or simply, } L_t = \sum_{t=1}^n [(1-\alpha)X_m]_t + [(C)_t + (cX_m)_t] - (\alpha X_m)_t \quad (20)$$

As the profit is shared between the central bank and entrepreneur (government) and, the loss is born by two parties referring to the capital share of each party, portion of profit and loss sharing for the central bank is written in equations (22) and (23) below:

$$\pi_{cb} = \frac{p}{p+q} \left\{ \sum_{t=1}^n (\alpha_p X_m)_t - [(1-\alpha)r_1 X_m]_t - [(C)_t + (cX_m)_t] \right\} \quad (21)$$

$$L_{cb} = \frac{X_q}{X_q + X_e} \left\{ \sum_{t=1}^n [(1-\alpha)X_m]_t + [(C)_t + (cX_m)_t] - (\alpha X_m)_t \right\} \quad (22)$$

Meanwhile, portion of profit and loss sharing for the government (entrepreneur) is  $\pi_e = (\pi_t - \pi_{cb})$  and  $L_e = (L_t - L_{cb})$ . Following equation (21), the maximum profit for the central bank is when  $(\pi_{cb})' = p/(p+q)[(r_p+r_1)\alpha-c]$ . At the end of Musharakah period ( $n$ ),  $X_n$  is matured and with the same assumption with Mudarabah financing where the central bank can successfully minimize business losses, total Musharakah investment at the end of the period will hopefully

the same as total Qardh hassan funds from the Qardh hassan central bank certificate plus profit. Then, total of funds at the end of Musharakah investment are:

$$X_n = \pi_{cb} + X_q \quad (23)$$

which are higher than  $X_q$ . In this maturity time,  $X_q$  is returned to the holders of Qardh hassan central bank certificate, while  $\pi_{cb}$ ,  $L_{cb}$  and  $\pi_e$ ,  $L_e$  go subsequently to the central bank and entrepreneur (government).

In the maturity date, because of using funds from Qardh hassan central bank certificate in Musharakah financing, the central bank, government and all related parties provide benefits to the economy which are more or less similar to Musharakah financing, except : (i) completion the government projects with profit and loss sharing mechanism (reducing the credit risk of each party), (ii) utilization of idle funds by using both Islamic monetary instrument (the central bank funds) and fiscal policy (the government funds), (iii) more reduction of unemployment because more employees involved in the projects and, (iv) increasing the scale of projects to be done as the combination of funds from the central bank and government finances larger and more projects.

### 3. 2. Waqf Central Bank Certificate

Besides offering Qardh hassan central bank certificate, the central bank might employ Waqf central bank certificate. As mentioned earlier that the contemporary Islamic scholars permit Waqf in the form of money instead of asset and with a temporary basis, such certificate is possible to have short-term, medium-term or long-term tenors. But, the most important one, the Nazir (central bank) is not allowed to face business losses in utilizing Waqf funds. Thus, to safe its investment activities and minimize losses, the best forms of financing are either leasing (Ijarah muntahia bitamlik financing) or trading an asset (Murabahah financing).

Particularly, financial leasing (Ijarah muntahia bitamlik) where the central bank just purchase a leassable asset (project) and leases it with the commitment of the lessee to own it at the end of the lease period, ensures the central bank to earn fixed income in the form of rental rate, regain the earlier investment and avoid maintaining such a leasable asset for a long time. Similarly, trading an asset (Murabahah financing) allows the central bank to purchase an asset (project) from the second party then sells it to the third party with mark up price (profit).

**A. Ijarah Muntahia Bitamlik Financing**

Assuming that the total amount of Waqf funds have been collected, called  $X_w$  for the  $t$  period between  $0 < t < n$ , the central bank will immediately purchase a leasable asset worth  $X_w$ . In practice, in order to give optimal advantage to the economy, the central can purchase an asset (project) (for example, hospital, school, etc) owned by private entrepreneur to be leased to the government under Ijarah muntahia bitamlik contract. The rental rate is assumed to be fixed with the rental rate of  $(r_i X_w)$  and total price of the asset is divided proportionally or  $(X_w/t)$  during the rental period so that the government will fully own the project at the end of leasing period while the central bank receives both initial investment and return from leasing the project.

With those scenarios, total monthly return ( $R$ ) for the entire leasing period is modeled in equation (24) and (25) below. Further, if monthly costs are assumed fixed or  $C_t$  and less than  $(X_w/t)$  plus  $(r_i X_w)$ , figures 3 and 4 illustrate total monthly return and costs of Ijarah muntahia bitamlik contract as below.

$$R_t = \{(r_i X_w)_1 + \dots + (r_i X_w)_n\} + \left[ \left( \frac{X_w}{t} \right)_1 + \dots + \left( \frac{X_w}{t} \right)_n \right] \quad \text{or simply} \quad (24)$$

$$R_t = \sum_{t=1}^n (r_i X_w)_t + \left( \frac{X_w}{t} \right)_t \quad (25)$$

$$C_t = (C)_1 + \dots + (C)_n \quad \text{or simply} \quad (26)$$

$$C_t = \sum_{t=1}^n (C)_t \quad (27)$$

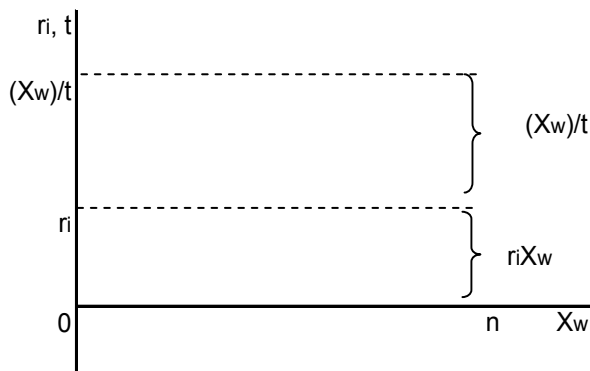


Figure 3. Total Return of Ijarah muntahia bitamlik

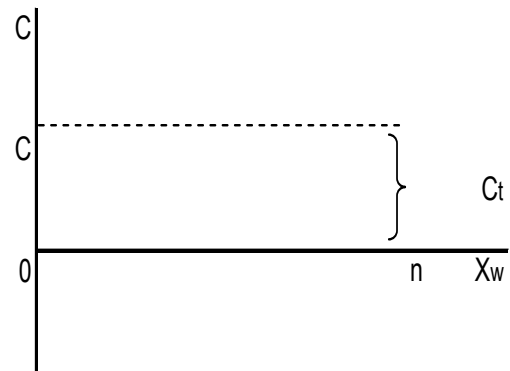


Figure 4. Total Costs of Ijarah muntahia bitamlik

As  $(X_w/t)$  is actually a monthly installment of  $X_w$ , it is not considered in counting total profit. Thus, total profit is formulated in equations (28) and (29) whilst the maximum profit is reached in equation (30):

$$\pi_t = \sum_{t=1}^n \{[(r_i X_w)_1 + \dots + (r_i X_w)_t] - (C)_1 - \dots - (C)_t\} \quad (28)$$

$$\pi_t = \sum_{t=1}^n [r_i X_w]_t - (C)_t \quad (29)$$

$$\frac{\partial \pi_t}{\partial X_w} = r_i \quad (30)$$

$$X_n = \pi_{cb} + X_w \quad (31)$$

Due to the nature of Waqf contract, there is no obligation for the central bank to reward the holders of Waqf central bank certificate and the most important target of the central bank is to maintain Waqf value which is the value of  $X_w$ . All of the profit above belongs solely to the central bank and is extended to the public. Lately, at the end of the leasing period,  $\pi_t$  is expected to be positive meaning income from Ijarah muntahia bitamlik from  $1 < t < n$  is higher than total fixed cost and such profit is added with total installment of initial investment ( $X_w$ ) so that  $X_n$  is higher than  $X_w$  (see equation 31).

Finally, the benefits for economy (public in general), amongst all, are: (i) the trading (buying and leasing) of a project which is increasing the economic activity, (ii) paying return (profit) and fee to the related parties (private owner of the project, the government council for the government tax, services from intermediaries of the transaction, etc), (iii) helping the government to lease and finally own the project for the public benefits and, (iii) adding the number of public infrastructures (for example, hospital, school, etc) meaning improving the welfare of the people (needies).

## B. Murabahah Financing

Besides Ijarah muntahia bitamlik which can maintain the Waqf value, the central bank can occupy Murabahah contract as mentioned before. Assuming that total amount of Waqf funds have been collected, called  $X_w$  for the  $t$  period between  $0 < t < n$ , the central bank will immediately purchase an asset (project) worth  $X_w$ . And, the same as in Ijarah muntahia bitamlik,

to give optimal advantage to the economy, the central should buy an asset (project) (for example, hospital, school, etc) owned by private entrepreneur to be sold to the government under Murabahah contract (deferred payment basis).

After owning a project, the central bank sells it to the government with mark up price of  $(X_w + m)$  available to be paid by installment in an agreed period of  $n$  which is less than or at least the same as  $n$  period in Waqf agreement. With such scenarios, total monthly return  $(R)$  for the entire Murabahah period is modeled in equations (32) and (33) below and is figured in figure 5 below.

$$R_t = \left[ \left( \frac{X_w + m}{t} \right)_1 + \dots + \left( \frac{X_w + m}{t} \right)_n \right] \quad \text{or simply} \quad (32)$$

$$R_t = \sum_{t=1}^n \left( \frac{X_w + m}{t} \right)_t \quad (33)$$

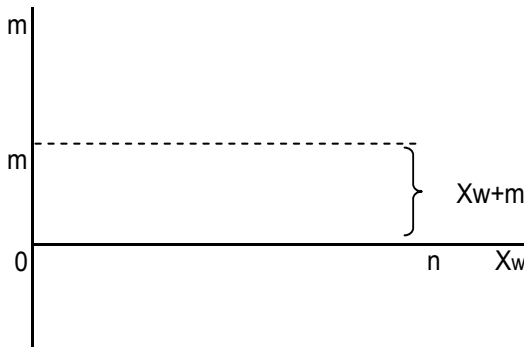


Figure 5. Total Return of Ijarah muntahia bitamlik

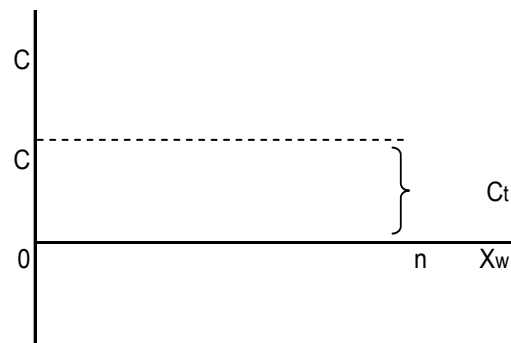


Figure 6. Total Costs of Ijarah muntahia bitamlik

Further, if monthly cost is assumed fixed or  $C_t$  and,  $((X_w + m)/t)$  is higher than  $C_t$ , the central bank can expect to earn profit as modeled in equations (34) and (35) in the following and figured by figured below. In addition, the maximum profit is formulated in equation (36).

$$\pi_t = \sum_{t=1}^n \left[ \left( \frac{X_w + m}{t} \right)_1 + \dots + \left( \frac{X_w + m}{t} \right)_t - (C)_1 - \dots - (C)_t \right] \quad (34)$$

$$\pi_t = \sum_{t=1}^n \left[ \left( \frac{X_w + m}{t} \right)_t - (C)_t \right] \quad (35)$$

$$\frac{\partial \pi_t}{\partial X_t} = \frac{1}{t} \quad (36)$$

Unlike in Ijarah muntahia bitamlik contract, in Murabahah, the initial investment ( $X_w$ ) is included in the installment or ( $X_w + m$ ) thus the determination of mark up is crucial to cover the costs and finally to earn positive return on investment. Meanwhile, the benefits for economy (public in general), are almost the same as in Ijarah muntahia bitamlik contract which are: (i) the trading (buying and selling with mark up) of project which is increasing the economic activity, (ii) paying return (profit) and fee to the related parties (private owner of the project, government council for the government tax, services from intermediaries of transaction, etc), (iii) helping the government to own a project for the public benefit and, (iii) adding the number of public infrastructures (for example, hospital, school, etc) meaning improving the welfare of people.

### **3. 3. Hibah (Gift) Central Bank Certificate**

Finally, besides offering Qardh hassan and Waqf central bank certificates, the central bank has another alternative namely Hadiah (Gift) central bank certificate. Although it seems unworkable to collect funds by issuing Gift based central bank certificate, some contemporary experiences especially if a country or certain area faces natural calamity (for example, tsunami, earth quake, flood), show that there are some generous people, international organizations, or social organization who are willing to give donation to help others. In this case, there should be the case where “the haves” are willing to donate their money to help “the needies” to improve their standard of living by buying Gift central bank certificate (Tripp, 2006:67-68).

According to Sharia, such money belongs to the needy and has to be used for the charity purposes. As the owner of Hadiah funds but is obliged to use it for charitable purposes, the central bank (organizer of the donation funds) is neither obligatory to give bonus/fee to the donors nor returning the funds to them. Even, unlike Waqf funds, the donation funds are allowed to face losses as long as it is not because of the central bank’s negligence. Hence, the central bank does not have to be worried of utilizing the funds in the investment based contracts for the optimal benefit for the needies. Indeed, for the sake of the continuation of the economic activities, the central bank is recommended to professionally maintain such funds to continuously help the needies and to maintain the values of funds.

As such, applying both Mudarabah and Musharakah financing are preferable to provide maximum benefits as those contracts can give higher and wider impacts to only the needies but also the whole economy (Iqbal and Molyneux, 2005:28). In addition, as the funds are donation

from the haves, the central acts as the owner of the funds (Shahibul maal) with the government (Mudarib) who utilize such funds in the real business activities.

### A. Mudarabah Financing

Referring to the previous explanation of Mudarabah contract and its scenarios in Qardh hassan central bank certificate with Mudarabah financing and assuming that the total gift funds is  $X_g$ , the monthly return ( $R_t$ ) of a Mudarabah project from the first month of its operation until the last month of its operation or  $1 < t < n$  is estimated to be:

$$R_t = \left[ (\alpha r_p X_g)_1 + \dots + (\alpha r_p X_g)_n \right] - \left\{ [(1-\alpha)r_1 X_g]_1 + \dots + [(1-\alpha)r_1 X_g]_n \right\} \text{ or simply} \quad (37)$$

$$R_t = \sum_{t=1}^n (\alpha r_p X_g)_t - [(1-\alpha)r_1 X_g]_t \quad (38)$$

The same as the previous scenario, with the monthly fixed costs of ( $C_t$ ) and variable costs of ( $cX_q$ ), the total costs are found in equations (39) and (40) which are:

$$C_t = [(C)_1 + \dots + (C)_n] + [(cX_g)_1 + \dots + (cX_g)_n] \text{ or simply} \quad (39)$$

$$C_t = \sum_{t=1}^n (C)_t + (cX_g)_t \quad (40)$$

Then, if the Mudarabah project generates profit or  $\pi_t > 0$ , recalling the previous ones, the formulas of profit and the maximum profit are given by equations (41), (42) and (43) below:

$$\pi_t = \left[ (\alpha r_p X_g)_1 + \dots + (\alpha r_p X_g)_n \right] - \left\{ [(1-\alpha)r_1 X_g]_1 + \dots + [(1-\alpha)r_1 X_g]_n \right\} - [(C)_1 + \dots + (C)_n] - [(cX_g)_1 + \dots + (cX_g)_n] \quad (41)$$

$$\text{or simply, } \pi_t = \sum_{t=1}^n (\alpha r_p X_g)_t - [(1-\alpha)r_1 X_g]_t - [(C)_t + (cX_g)_t] \quad (42)$$

$$\frac{\partial \pi_t}{\partial X_g} = (r_p + r_1)\alpha - c \quad (43)$$

On the contrary, if it faces losses ( $L_t$ ) meaning when the total costs and negative return are higher than positive return, the formula becomes:

$$L_t = \left\{ [(1-\alpha)r_1 X_g]_1 + \dots + [(1-\alpha)r_1 X_g]_n \right\} + [(C)_1 + \dots + (C)_n] + [(cX_g)_1 + \dots + (cX_g)_n] - \left[ (\alpha r_p X_g)_1 + \dots + (\alpha r_p X_g)_n \right] \quad (44)$$

$$\text{or simply, } L_t = \sum_{t=1}^n [(1-\alpha)X_g] + [(C)_t + (cX_g)_t] - (\alpha X_g)_t \quad (45)$$

Then, according to the profit sharing ratio, portion of profit sharing for the central bank as the Shahibul maal is:

$$\pi_{cb} = \frac{P}{p+q} \left\{ \sum_{t=1}^n (\alpha_p X_g)_t - [(1-\alpha)r_1 X_g] - [(C)_t + (cX_g)_t] \right\} \quad (46)$$

$$\frac{\partial \pi_{cb}}{\partial X_g} = \frac{P}{p+q} [(r_p + r_1)\alpha - c] \quad (47)$$

and the one for the entrepreneur is  $\pi_e = (\pi_t - \pi_{cb})$ . Following equation (46), the maximum profit for the central bank is given by equation (47). Nonetheless, based on the Mudarabah contract and as the central bank is the Shahibul maal of the funds, it has to bear all losses (equation 45) if the business faces losses. In addition, it does not need to share profit with the government.

However, assuming that the government has professionally managed the project, hopefully, the central bank does not need to bear any loss, thus the total Mudarabah investment at the end of an agreed period will approximately the same as total donation funds from the gift central bank certificate plus profit. Then, total of funds at the end of Mudarabah investment ( $X_n$ ) are (see equation 48):

$$X_n = \pi_{cb} + X_g \quad (48)$$

which are higher than  $X_g$  itself.

Furthermore, in the maturity time,  $X_g$  does not need to be returned to the holders of gift of central bank certificate as well as  $\pi_{cb}$  and  $\pi_e$  which go subsequently to the central bank and entrepreneur (government). It means that under a gift contract, the funds keep growing both its initial values and revenue sharing. However, rather than enjoying the result of the investment alone, the central bank is recommended to share such  $\pi_{cb}$  to show its appreciation to the donators (the holders of gift central bank certificate) and to attract more donators as well. Even, in addition to sharing the central bank profit, the project done by the government (Mudarib) is in fact for the sake of the public hence double benefit is generated by the Gift central bank certificate for the needies and economy.



## B. Musharakah Financing

Besides Mudarabah financing, Musharakah financing is another alternative. In this case, both the central bank and the government act as the owners of the funds and have to commit with both profit and loss sharing ratio agreement. Referring to the previous assumptions and scenarios, the monthly return ( $R_t$ ) of a Musharakah investment which is  $X_m = X_g + X_e$  from the first month of its operation until the last month of its operation or  $1 < t < n$  is estimated to be:

$$R_t = \sum_{t=1}^n (\alpha r_p X_m)_t - [(1 - \alpha)r_1 X_m]_t \quad (49)$$

With the monthly costs ( $C_t$ ) of fixed costs of ( $C_t$ ) and variable costs of ( $cX_m$ ), the total costs formulas are written in equations (50) in the following:

$$C_t = \sum_{t=1}^n (C)_t + (cX_m)_t \quad (50)$$

Then, if the Musharakah project generates profit or  $\pi_t > 0$ , the formula of profit and the maximum profit will be:

$$\pi_t = \sum_{t=1}^n (\alpha r_p X_m)_t - [(1 - \alpha)r_1 X_m]_t - [(C)_t + (cX_m)_t] \quad (51)$$

$$\frac{\partial \pi_t}{\partial X_m} = (r_p + r_1)\alpha - c \quad (52)$$

Whilst, if it faces losses ( $L_t$ ), the total monthly costs and negative return are higher than positive return and it can be formulated as below:

$$L_t = \sum_{t=1}^n [(1 - \alpha)X_m]_t + [(C)_t + (cX_m)_t] - (\alpha X_m)_t \quad (53)$$

Finally, portion of profit sharing and maximum profit for the central bank is written in equations (54) and (55):

$$\pi_{cb} = \frac{P}{p + q} \left\{ \sum_{t=1}^n (\alpha r_p X_m)_t - [(1 - \alpha)r_1 X_m]_t - [(C)_t + (cX_m)_t] \right\} \quad (54)$$

$$\frac{\partial \pi_{cb}}{\partial X_m} = \frac{P}{p+q} [(r_p + r_i)\alpha - c] \quad (55)$$

Meanwhile, profit sharing for the government as the entrepreneur is  $\pi_e = (\pi_t - \pi_{cb})$  and similar to maximum profit applies to the government. Fortunately, the business losses are born by both parties according to its capital share, thus the loss sharing formula of the central bank is:

$$L_{cb} = \frac{X_q}{X_q + X_e} \left\{ \sum_{t=1}^n [(1-\alpha)X_{m,t}] + [(C)_t + (cX_m)_t] - (\alpha X_m)_t \right\} \quad (56)$$

and the one of the government is  $L_e = L_t - L_{cb}$ .

Again, assuming that the losses are minimum and insignificant, at the end of investment period, total Musharakah investment funds held by the central bank are:

$$X_n = \pi_{cb} + X_g \quad (57)$$

which are higher than  $X_g$ . The same as in the Mudarabah financing above, double benefit are provided for the needies and economy besides the values of funds keep growing as the central bank does not need to return them.

#### 4. UTILITY OF THE ISLAMIC GRACIOUS MONETARY INSTRUMENTS

This part compiles and compares the utility of every proposed Islamic gracious monetary instrument especially its benefits for the economy (public) and status of the funds (see table 1). Basically, all profit earned by both the central bank and the government is used for the public benefits especially the needies. Unexceptionally, the asset(s) or project(s) used as underlying contracts are also occupied or owned for the public benefits. It is because both the central bank and the government are non commercial institutions which prioritize prosperity of the people. Moreover, the Islamic gracious monetary instruments (Qardh hassan, Waqf and Hadiyah central bank certificates) are applied to improve the people welfare and offered to the generous depositors.

First of all is Qardh hassan central bank certificate under Mudarabah and Musharakah financing contracts. Both of financing contracts give benefits for the economy but the one from Musharakah financing give more benefits than Mudarabah financing. It is because, funds utilized in Musharakah financing is a combination of funds from the Qardh hassan central bank

certificate and from the government (entrepreneur) funds. However, the usage of the Qardh hassan funds should consider the tenor and maturity date as such funds have to be returned to the certificate holders at the end of the Qardh hassan certificate period.

**Table 1. Utility of the Islamic Gracious Monetary Instruments**

Islamic Gracious Monetary Instruments	Benefit for the Economy (Public)	Status of the Funds
Qardh hassan central bank certificate (Mudarabah Financing)	$\pi_t = \sum_{t=1}^n (\alpha r_p X_q)_t - [(1 - \alpha)r_l X_q] - [(C)_t + (cX_q)_t]$	Returned to the Certificate' Holders
Qardh hassan central bank certificate (Musharakah Financing)	$\pi_t = \sum_{t=1}^n (\alpha r_p X_m)_t - [(1 - \alpha)r_l X_m] - [(C)_t + (cX_m)_t]$	Returned to the Certificate' Holders
Waqf central bank certificate (Ijarah Muntahia bitamlik Financing)	$\pi_t = \sum_{t=1}^n [r_l X_w] - (C)_t$	Belonged to the God
Waqf central bank certificate (Murabahah Financing)	$\pi_t = \sum_{t=1}^n \left[ \left( \frac{X_w + m}{t} \right)_t - (C)_t \right]$	Belonged to the God
Gift central bank certificate (Mudarabaha Financing)	$\pi_t = \sum_{t=1}^n (\alpha r_p X_g)_t - [(1 - \alpha)r_l X_g] - [(C)_t + (cX_g)_t]$	Belonged to the Central Bank
Gift central bank certificate (Musharakah Financing)	$\pi_t = \sum_{t=1}^n (\alpha r_p X_m)_t - [(1 - \alpha)r_l X_m] - [(C)_t + (cX_m)_t]$	Belonged to the Central Bank

Secondly is Waqf central bank certificate under Ijarah muntahia bitamlik and Murabahah financing contracts. Both of the contracts give main benefits in terms of purchasing or leasing to be purchased an asset(s) or project(s) to increase the public benefits. The Waqf funds are assumed not permanent thus they are going to be returned to the holders of the Waqf central bank certificates. However, the central bank as the manager of the Waqf funds (Nadzir) has to be professional in managing them as loss is not allowed to occur in this type of Islamic contract. Compared with the first Islamic gracious certificate, the economic impact of trading based financing contracts (Ijarah muntahia bitamlik and Murabahah) is less than investment based financing contracts (Mudarabah and Musharakah).

The last one is Hadiah (Gift) central bank certificate under Mudarabah and Musharakah financing contracts. The same as Qardh hassan central bank certificate, both of financing contracts give benefits for the economy. Nevertheless, the Hadiah central bank certificate provides even more benefits than the one from the Waqf central bank certificate. It is because the Hadiah (Gift) central bank certificate is not time restricted (tenor and maturity date) such as the one in Qardh hassan central bank certificate. Hence, the central bank should not strictly avoid business losses and has a full control over the management of funds.

## 5. CONCLUSION

Unlike the conventional central bank monetary instruments, Islam (Sharia) has special central bank monetary instruments called the Islamic gracious central bank certificates. The ultimate purpose of such certificates is for the public benefits and the needies in particular. In this case, there are at least three proposed central bank certificates which are: (i) Qardh hassan central bank certificate, (ii) Waqf central bank certificate and, (iii) Hibah (Gift) central bank certificate. All of them contribute to the economy in different ways even the profit earned by both central bank and the government is for the welfare of the people as well.

From the perspective of monetary control and easiness to attract generous depositors, Qardh hassan and Waqf central bank certificates come as the first option followed by Gift central bank certificate. It is because the formers may potentially absorb more funds than the latter. In addition, Qardh hassan, in particular, has maturity date (temporary placement) hence it is similar with the commercial (Tijarah) central bank certificates. However, in terms of the flexibility of the central bank to manage funds, Hadiah (Gift) central bank certificate is the first one followed by Qardh hassan and Waqf central bank certificates. Occupying the former does not require the central bank to be aware of business losses and time limit. Meanwhile, the latter has to be managed professionally to mitigate business losses.

## Glossary of Arabic Words

**Gharar** : Any element of absolute or excessive uncertainty in any business or a contract about the subject of contract or its price, or mere speculative risk. It has the potential to lead to undue loss to a party and unjustified enrichment of the other, which is prohibited.

**Ibra** : it means forgiving the loan. A generous creditor forgive the loan for the benefit of the debtor.

**I'arah** : it means the loan of a particular piece of property, the substance of which is not consumed by its use, without anything taken in exchange, In other words, it is the gift of usufruct of a property or commodity that is not consumed on use.

**Ijarah Muntahia bitamlik** : A mode of financing, by way of hire-purchase, adopted by Islamic banks. It is a contract under which the Islamic bank finances equipment, building or other facilities for the client against an agreed rental together with a unilateral undertaking by the bank or the client that at the end of the lease period, the ownership in the asset would be transferred to the lessee. The undertaking or the promise does not become an integral part of the lease contract to make it conditional. The rental and the purchase price are fixed in such a manner that the bank gets back its principal sum along with some profit, which is usually determined in advance.

**Istishna** : this is a contractual agreement for manufacturing goods and commodities, allowing cash payment in advance and future delivery or a future payment and future delivery. A manufacturer or builder agrees to produce or build a well described good or building at a given price on a given date in the future. Price can be paid in installments, step by step as agreed between the parties. Istisna'a can be used for financing the manufacture or construction of houses, plant, projects, and the building of bridges, roads and highways.

**Mudarabah** : This is an agreement between two parties, one provides 100% of the capital for a venture and the other, known as the Mudarib, manages the venture using his/her skills. Profits from the project are distributed according to a pre-agreed ratio. Losses are borne only by the provider of the capital while the Mudarib loses his/her time, effort, and the chance for a reward. Management is provided by the Mudarib only. The Mudarib does not share the loss for the simple reason being in Islam, one cannot lose what they did not contribute. This is one of the most common modes of Islamic financing.

**Murabahah** : A contract of sale between the bank and its client for the sale of goods at a price plus an agreed profit margin for the bank. The contract involves the purchase of goods by the bank which then sells them to the client at an agreed mark-up. Repayment is usually in instalments.

**Musharakah** : It is a mutual consent business contract to share profits and losses in the joint business. Islamic bank (central bank) and enterprise (investors) provides funds together. Any profit will be distributed among partners in pre-agreed ratios and loss will be borne by every partner in proportion to respective capital contributions.

**Riba** : means an excess or increase. Technically, it means an increase over the principal in a loan transaction or in exchange for a commodity accrued to the owner (lender) without giving an equivalent counter-value or recompense ('iwad) in return to the other party; every increase which is without an 'iwad or equal counter-value.

**Salam** : Salam means a contract in which advance payment is made for goods to be delivered later. The seller undertakes to supply some specific goods to the buyer at a future date in exchange for being paid in advance a price fully paid at the time of contract.

**Sharia** : The term Shariah refers to divine guidance as given by the Holy Qur'an and the Sunnah of the Prophet Muhammad and embodies all aspects of the Islamic faith, including beliefs and practice.

**Qardh hassan** : An interest-free loan given mainly for welfare purposes. The borrower is only required to pay back the amount borrowed.

**Qimar** : Qimar means gambling. Technically, it is an arrangement in which possession of a property is contingent upon the happening of an uncertain event. By implication it applies to a situation in which there is a loss for one party and a gain for the other without specifying which party will lose and which will gain.

**Waqf** : Technically appropriation or tying-up of a property in perpetuity so that no propriety rights can be exercised over the usufruct. The Waqf property can neither be sold nor inherited or donated to anyone. Awqaf consists of religious foundations set up for the benefit of the poor.

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