Islamic Banking and Finance Review

MICRO-MONEY AND REAL ECONOMIC RELATIONSHIP IN THE 100 PERCENT RESERVE REQUIREMENT MONETARY SYSTEM

Masudul Alam Choudhury
Professor of Economics College of Commerce and Economics Sultan Qaboos University Muscat, Sultanate of Oman and The School of Business University College of Cape Breton Sydney, Nova Scotia, Canada masudc@squ.edu.com

Research Paper Information:

To cite this article

Choudhury, Masudul Alam. (2014). Micro-money and real economic relationship in the 100 percent reserve requirement monetary system. *Islamic Banking and Finance Review, 1*(1), 25–36.
Crossref

Access this article online

Article

https://doi.org/10.32350/ibfr.2014.01.02

Contact Information

INSTITUTE OF ISLAMIC BANKING (IIB)
UNIVERSITY OF MANAGEMENT AND TECHNOLOGY
C-II, Johar Town, Lahore +92-42-3521-2801-10 (Ext – 3418)

Volume 1 **1435-H/ 2014**
ISSN (E): **2413-2977**
ISSN (P): **2221-5239**

Journal
https://doi.org/10.32350/ibfr
Issue
https://doi.org/10.32350/ibfr.2014.01

Published By
Institute of Islamic Banking
University of Management and Technology (UMT)

https://iib.umt.edu.pk/ibfr/home.aspx
ibfr@umt.edu.pk

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Masudul Alam Choudhury
Professor of Economics
College of Commerce and Economics
Sultan Qaboos University
Muscat, Sultanate of Oman
and
The School of Business
University College of Cape Breton
Sydney, Nova Scotia, Canada
masudc@squ.edu.om

Abstract

The structure of Islamic transformation into 100 per cent reserve requirement monetary system is explained in terms of the foundational epistemology of the unity of divine knowledge (*tawhid*). In this, the role of micro-money and real economic exchange relations is shown to arise by a natural causality. A comparative study of endogenous money in the quantity theory of money points out significant differences between the endogenous theory of money in Islam and mainstream methodologies (Choudhury, 1997). A formal model of micro-money and its endogenous relationship with the real economy is formulated with the objective goal of realizing well-being, economic stabilization and sustainability of development regimes. Policy recommendations for *ummatic* transformation into a 100 per cent reserve requirement monetary system with the gold-backed micro-money as currency in relation to real economic transaction vis-a-vis *shari'ah* are given towards the end of the paper.

The principal objective of this paper is to derive a simulation model explaining the interrelationships between money, real economy, prices, economic growth and social well-being. We argue that such a relationship between money and the real economy cannot be explained by the existing macroeconomic conception of monetary relations, and thereby, by the institutional structure of monetary policies in the macroeconomic framework. Substantial changes that follow by redefining the money-real economy relations in view of market forces and institutional structure bring forth the study of specific linkages between money and resource mobilization within the market order. Here a substantive study of micro-money appears. Furthermore, in the Islamic framework of reference we find that the substantive nature of the model of money and real economy relationship is derived from the Islamic epistemological foundations. We will elaborate upon this epistemological derivation to establish our money-real economy model. We will show thereby, that the most appropriate monetary system that results in the case of the micro-money and real economy interrelations is the 100% reserve requirement monetary system backed by the gold standard (Dinar).

Choudhury,Masudul Alam (2014). Micro Money And Real Economic Relationship In The 100 Percent Reserve Requirement Monetary System. *Islamic Banking and Finance Review*, *1*(1), 25-37. ISSN 2221-5239. © 2014

This paper is divided into the following sections: Section 1 gives a brief review of the literature on the gold standard from which we derive the evolution of micro-money in the history of economic thought. In Section 2 we derive our own specification of micro-money concept after noting its context within the quantity theory of money. In Section 3 we formulate the general epistemological background in the light of which our model of micro-money and its real economic relations is established. In Section 4 we explain some of the glaring methodological contrasts in the concept of micro-money between Islamic political economy and mainstream economic thought. In Section 5 we connect the micro-money concept with a 100 per cent reserve monetary system backed by the gold standard (Dinar). In Section 6 we point out other kinds of endogenous micro-monetary *numeraire* suggested in recent times (Choudhury, 1998). In Section 7 we conclude with certain policy recommendations in favour of micro-money within the context of 100 per cent reserve requirement monetary system.

Section 1: A Brief Review of the Literature: Gold Standard and the Nature of Relationship between Money and Market Exchange

Within the economic argument of the classical type the gold standard was thought of as any similar commodity that could be freely transacted in the market system setting its own prices without government intervention, and thereby, causing a trend in the general price level in goods and services in exchange (Block, 1999). The gold standard was thus thought to be behind the social philosophy of a free market and private ownership economy in which most importantly the individual made free choices without a statist intervention. It is pointed out that over the long-run trend in prices and real transactions determined by the gold standard there existed a profound stability in the gold price level despite certain short-run exceptions.

Consider the disaggregate version of the equation of exchange (Friedman, 1989, pp.1-40),

$$M_1V_1 + M_2V_2 = PT = Py \quad \ldots\ldots\ldots\ldots \quad (1)$$

Where, M_i is the money in circulation in the ith goods basket;
V_i is the velocity of money in circulation;
P is the general price level of goods and services transacted in the economy;
T is the number of transactions performed by the circulation of the quantity of money, M_1+M_2;
y is per capita national income;
i =1,2 goods or markets.

The identity (1) can be generalized to any number of specific transactions including the market for securities. The resulting quantity of money expressed as the demand for money, M_i^D, then is,

$$M_i^D = P.D(y,w,i_1, i_2, u), \quad \ldots\ldots\ldots\ldots \quad (2)$$

where, w denotes the capitalized wealth;

i_1 denotes interest rate on money assets;

i_2 denotes interest rate on securities;

i_1 and i_2 can be furthermore considered as term structures of interest rates over different kinds of assets over time.

u denotes all other variables, most importantly non-bank preferences, as in the 'real bills' hypothesis;

Section 2: Definition and Analytics Concerning Micro-money

A generalization of the disaggregate forms of the expressions (1) and (2) brings us to the definition of micro-money. Micro-money is the money in circulation specific to particular goods, services, assets, also clientele and thus multimarkets. Now to understand the meaning of micro-money we must turn firstly to the specific markets for real transactions and to the preferences of the non-banking agents to determine the quantity of money that needs to be in circulation to finance such real transactions.

Our definition of micro-money requires a broader deconstruction of the expressions (1) and (2) of the quantity theory. The resulting specification appears as follows:

$$\Sigma_i M_i V_i = \Sigma_i P_i y_i \quad \ldots\ldots\ldots\ldots\ (3)$$

Where, P_i denotes price in the ith market;
y_i denotes per capita income in the ith market;
i = 1,2, …, n.

The expression like (3) has not appeared in the equation of exchange particularly due to the inability in defining the right hand side in terms of a total quantity of money in circulation. However, by allowing for a large number of multimarkets with borrowing in the Walrasian sense of the entire economy being viewed as the sum total of such equilibrium multimarkets, an equilibrium in the micro-monetary sector will cause a simultaneous equilibrium in the corresponding real goods market (Henderson & Quandt, 1971). Expression (3) now devolves into,

$$M_i V_i = P_i y_i, \text{ for each } i = 1,2,\ldots,n \quad \ldots\ldots\ldots\ldots\ (4)$$

We re-write (4) as, $M_i V_i / P_i y_i = M_j V_j / P_j y_j$.

That is, $M_i V_i / M_j V_j = P_i y_i / P_j y_j = (P_i / P_j)(y_i / y_j)$ …… (5)

Expressions (4) and (5) convey the meaning that for the total volume of micro-money in financing the nominal value of transactions in the ith market, relative prices in money terms between the markets must remain stable and the markets must be in equilibrium. This result would assume well determination of the agent-specific preferences as in the case of the 'real bills' hypothesis. But the same result on the existence of pre-determined stable and equilibrium relative prices negates the complex nature of intertemporal price and quantity relations as explained by Hayek's (1990, 1999 reprints) analysis of intertemporal resource allocation. Consequently, the above kind of deconstruction of the exchange equation of the quantity theory of money does not contribute to any fresh understanding of interaction in multimarkets with the presence of money prices affecting exchange prices in terms of the influence of micro-monies in those markets.

From the above discussion we note that in the quantity theory of money both the analytical as well as the institutional contexts of micro-money fall short of their proper definition with respect to real economic transactions. The analytical perspective shows a serious problem of aggregation in the micro-money model of the quantity theory. The institutional perspective points out the need for a new arrangement between the central bank, the commercial banks and markets within a gold standard and with the full force of market exchange determining the micro-money and real economic interrelationships. We now turn to these issues.

Section 3: An Epistemological Model of Micro-money and Real Economic Transactions in Islamic Perspective

The institutional and analytical problems of micro-money in the quantity theory of money lead us to investigate whether these problems can be addressed by received mainstream economics or is another methodology required. The quantity theory as formulated being an identity, it cannot answer the following question: Does money affect price level or does the price level affect money stock in circulation through the output effect? (Laidler, 1989)

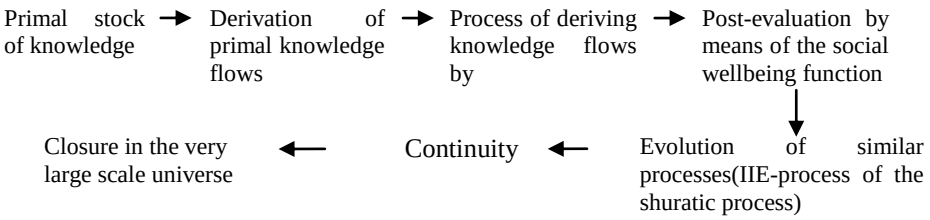
Between the contending approaches we find that money is treated in the mainstream literature either as an exogenous asset created by the central banking authority to establish price and output stabilization or when there exists endogenous feedback between money and economic activities the exact nature of the price-money causality is not determined. Furthermore, in all such feedback a model there exists the permanent prospect for inflationary pressure, as spending can forever cause upward pressure on output and prices. In the end, the question of stable price and output effects in relation to the feedback between money and real economic transactions remains unanswered.

A return to the gold standard with micro-money in a 100 per cent reserve requirement monetary system must analytically answer and realize this very missing phenomenon of the money-real economy linkages in the quantity theory of money and prices. Our critical project is now explained by the building blocks of an alternative methodology and its institution-economy consequences.

Section 4: The Tawhidi Epistemological Worldview of Unity of Knowledge in World-Systems

Our epistemological premise commences from the following argument. Unity of systemic knowledge as a relational worldview can be realized by means of extensive interaction, linkages, complementarity and their dynamic sustainability according to certain precise economic instruments and preferences (behaviour) that are formed within a political economy that recognizes unity of knowledge as its epistemological premise. Parting away with this critical foundational assumption of unity of knowledge and its attributes in terms of specific instruments, behaviour and methodology will leave any system of money-real economy relations to evolve by the force of uncontrolled anomie, thus leaving indeterminate the money-real economy feedback unchecked.

In this paper, instead of divulging the details of the process model of interaction, integration and creative evolution (IIE-process) premised on the unity of divine knowledge that has been developed in details elsewhere (Choudhury, 1995), we will briefly delineate and use it for formulating our money-real economy model. Our focus now is on formalizing a process model of generalized systems as shown below:



In the above string the primal stock of knowledge is the *tawhidi* epistemology. It explains the fundamental *Qur'anic* axiom of divine oneness and assumes a formal relation in the system (Choudhury, 1995, 1999, 2000a). From the *tawhidi* premise is derived fundamental *shari'ah* knowledge as primal knowledge-flows. Knowledge-flows so derived at once unravel the spontaneous and pervasive unveiling of divine oneness in the all experiential systems. This is the start of the process of deriving knowledge in relation to the unity of the experiential systems. We will denote the knowledge-flows by$\{\theta\}$ and is derived by the exercise of the discursive IIE process, which in accordance with Qur'anic terminology is also termed as the *shuratic* discourse at the level of deriving *shari'ah* rules from the episteme of *Qur'an* and *sunnah*. From the organization of the world-system in relation to the unity of knowledge-flows comes about the post-evaluation of this unity of knowledge by means of the well-being criterion used by the discursive system. We call this criterion as the social well-being function. From the post-evaluation of unity of knowledge in the context of the specific problems at hand follow similar relations in continuity until the completion of the original stock of knowledge is realized in the Hereafter. Thus we realize closure in the very large scale universe.

Now to specify, we can imagine two similar strings of relations similar to (6), one for money and the other for real economic activities. This means that in the epistemological sense money is a creation of Allah for the purposeful use in attaining well-being of individuals and society. Likewise, the economic order is patterned for the same purpose according to ethical values that are to be found in the Islamic Law, *shari'ah*. These two together, namely money-real economy relationship along with institutional guidance as complementary pairs follow from the *Qur'anic* principle of the 'paired universe' in the good things of life. The IIE-processes (*shuratic* processes) within and between the money-real economy relations would now proceed in the way explained by expression (6).

The functional mappings existing between extensive interactions between money and real economy now generate compound functions (Choudhury, 2000a). The social well-being criterion function resulting from pervasive interaction across the interactive, integrative and evolutionary branches of (6) in the two interconnected levels of money and the real economy is represented by non-linear and complex aggregation of the separate well-being functions belonging to these branches at their nodes.

The inter-systemic interactions, integration and evolution between money and the real economy generates a circular causation and continuity model of unified reality. Such an IIE-worldview makes risk-diversification, product-diversification, institutional development and participation among the agents, variables, resources and their relations to acquire permanent consequences of evolutionary learning. Knowledge augmentation by means of new learning constantly reduces the risk and unit cost of production and investment through product-, risk- and economic- diversification in the framework of the unity of knowledge as signified by the principle of universal complementarily across diversity.

Section 5: The Epistemologically Derived Specific Model of Money-Real Economy Relations

It is noted that every variable of the well-being function is of the micro-type. Aggregation to higher levels of ethical decision-making is explained by IIE-type compound mappings that result in non-linear multiplicative indexes. Although the IIE-expression (6) is now generalized to all types of socio-scientific problems in the

framework of the *tawhidi* unity of knowledge, its specificity to the money-real economy interrelationship is now formulated. The simulative form of the money-real economy relationship is explained by the following system of relationships:

Simulate $\{\theta_{ikl}\}$ $[W([\theta_{ikl}],[X_{ikl}(\theta_{ikl})]]$ …… (7)

Subject to the *circular causation recursive relations*,

$$X_{ikl}(\theta_{ikl}) = f_{jkl}\,(X_{jkl}(\theta_{jkl})), \quad \ldots\ldots\ldots\ldots \quad (8)$$

$$\theta_{ikl} = g_{jkl}\,([\theta_{jkl}],[X_{jkl}(\theta j_{kl})]) \quad \ldots\ldots\ldots\ldots \quad (9)$$

i,j $(i \neq j) = 1,2,\ldots;$

k = monetary system; l= real economy.

All variables, $\{X_{ikl}, \theta_{ikl}\}$ are to be taken in vector notation. f_{jkl} and g_{jkl} are recursive relations of the circular causation model over interactions (i) within and between the k,l-systems.

Specifically, we can write for money and two markets both endowed with a limiting consensual value of $\theta_i = \theta^*$ over k and l,

$$X_{ikl}(\theta^*) = (M_{k1}, p_{k1}, y_{k1})[\theta^*], \quad \ldots\ldots\ldots\ldots \quad (10)$$

k,l =1,2 as k = micro-money specific to two categories of spending and valuation in markets, l = 1,2.

The nature of complementarity across diversity and dynamic evolution in the well-being function is causally linked with complementary relations between every one of the variables in the vector (10). This means that ethicizing markets emerge by complementary spending in real goods and services, whose valuation is shown in terms of micro-money supporting such complementary spending patterns. Likewise, the existence of regimes of dynamic basic needs as life-fulfilling goods cause complementary outputs in the two sets of goods and services. There is no substitution now, only relative choice within a discursive framework interlinking money and real economy through the medium of the *shuratic* process, as explained earlier.

Such unifying relations among the variables require appropriate development and policing of money-market linking instruments. Examples of such instruments are valuation in the absence of interest-based discount factors, equity and profit-sharing joint venture instruments revolving around economic cooperation, trade financing and secondary instruments that revolve around these principal ones. Above all, there is the central role played by human resource development along the lines of the *ummatic* transformation in the light of the *tawhidi* worldview. All of these knowledge-inducing factors and instruments are comprised in the θ-induced policies and preference changes determined in and by the IIE-process.

When an evolution from lesser to higher regimes of micro-money and real economy linkages are being established in the knowledge-inducing systemic change, θ-induced policies and preference changes determined in and by the IIE-process are once again active in progressively reducing the 'marginal substitutions' between the goods and services and thus creating greater complementary relation between them. The unwanted goods and services are thus phased out by the θ-induced policies and preference changes determined in and by the IIE-process. In this way, the progressive evolution of the interactive and integrative processes reflect growing unification and responsiveness between the variables in a regime of change characterized by convergence between the growth rates of spending and the quantity of micro-money. This is a sure sign of

progressive reduction of instability and inflationary pressure in the economy with pervasive money-real economy linkages. With gains in output arising from the side of technological change, organizational efficiency and accentuated mobilization of resources (spending) the money-economy interrelationship would yield the growth rate of output to exceed the growth rate of spending and price level. Thereby, a sustained increase in real output growth is maintained both by the endogenously allocative and the X- efficiency conditions of the money- real economy interrelationships.

We can now write down the complete form of the money-real economy relationship in the light of the simulative well-being goal of the knowledge-centered worldview of Islamic political economy. Because of the nonlinear aggregation due to interaction and relational complementarity that are embodied in the well-being function, we take it in the multiplicative form denoted by intersection $\cap_{jkl}$ over j variables interacting across (k,l)-systems.

$$\text{Simulate } \{\theta\}\ W(\theta) = \cap_{jkl} X_{jkl}^{aj}, \qquad \ldots\ldots\ldots\ldots\ (11)$$

k, l = 1,2 are the money and economy as the two interactive and co-determining systems. $X_{jkl} = \{M_1,M_2,p_1,p_2,y_1,y_2\}$ is the vector of various variables pertaining to markets that are interconnected with the micro-money flows. Because of the knowledge-inducing process of the IIE-kind all variables including the a_j coefficients are θ-induced. We have taken this θ-value in the limiting form. X_{jkl}^{aj} are thus the indexed variables $\{M_1,M_2,p_1,p_2,y_1,y_2\}$ by the elasticities a_j , j ranges over the given variables. The recursive relations according to the circular causation system are,

$$M_1 = f_1\ (M_2,p_1,p_2,y_1,y_2) \qquad \ldots\ldots\ldots\ldots\ (12)$$

$$M_2 = f_2(M_1,p_1,p_2,y_1,y_2) \qquad \ldots\ldots\ldots\ldots\ (13)$$

$$p_1 = f_3(M_1,M_2,p_2,y_1,y_2) \qquad \ldots\ldots\ldots\ldots\ (14)$$

$$p_2 = f_4(M_1,M_2,p_1,y_1,y_2) \qquad \ldots\ldots\ldots\ldots\ (15)$$

$$y_1 = f_5(M_1,M_2,p_1,p_2,y_2) \qquad \ldots\ldots\ldots\ldots\ (16)$$

$$y_2 = f_6(M_1,M_2,p_1,p_2,y_1) \qquad \ldots\ldots\ldots\ldots\ (17)$$

$$\theta+ = f_7(\theta,M_1,M_2,p_1,p_2,y_1,y_2) \qquad \ldots\ldots\ldots\ldots\ (18)$$

All of the above variables are recursively θ-induced through the IIE circular causation processes. The sign '+' indicates a forward recursive value upon the lagged values of both the institutional *shuratic* policies and preferences and the socioeconomic variables. The recursive lag indicated by '-' is shown to govern all the variables inside the bracket. All the functions denoted by f's are nonlinear.

In a progressively transforming Islamic money-real economy complementary system the coefficients of the relationships are expected to be either positive or tending towards positive signs out of progressively weakening negative relations. This signifies the passage from a non-learning system, such as the one characterized by the neoclassical marginal substitution methodology (Shackle, 1972), to increasingly pervasive

complementarity as signified by the *shuratic* process or equivalently the IIE-process methodology.

The above trends translate into the following analytical results. In the evolutionary life-fulfilling regimes of development promoted by the *shari'ah* preference changes and use of instruments selected out of discourse and extensions, p_i and y_i denote prices and outputs of such goods, respectively. Thereby, (p_iy_i-cost of production) are distributed among participants in a cooperative Islamic political economy. This implies that the cost of production is also shared and no opportunity cost of production concept can therefore remain.

Spending in the production and consumption of y_i at prices p_i is financed by M_i. Thereby, some of the spending flows between production value and consumption value of interrelated goods and services. The equations (12)-(18) bring out this kind of interdependence. Such an interdependence follows the circular causation methodology as epistemologically derived from the extended form of expression (6).

Equations (12) and (13) are the micro-money equations for the quantity of money in circulation in multimarkets. Note that interest rates are logically ruled out in this system of relations by the absence of the opportunity cost of money and real goods and services as is otherwise expressed by their relative prices in neoclassical economic theory. Marginal substitution hypothesis is replaced by the endogenous nature of micro-money pursuing spending in interconnected multimarkets. The circular causation process in simulation by the IIE-methodology sustains the evolution of the system of diversity leading to pervasively complementary relations through the *shuratic* process.

We note from the system of complementary relations (11)-(18) that well-defined circular causation exists between money and the real economy. That is to say money is truly micro in nature as it is in pursuit of financing the *shari'ah* recommended life-fulfilling basket of goods and services by means of specified instruments that promote ethical values and complementarity between ethical possibilities. This makes money the valuation medium for multimarket spending. Subsequently, new rounds of multimarket spending become the springboard for further quantity of micro-money in the economy.

The concept of demand and supply of money now loses significance. There is simply a quantity of currency as money available from the central authority to match up a reflective spending demand in *shari'ah*-recommended life-fulfilling goods and services. Our old ideas of money as medium of exchange and store of values lose meaning in this case. Since money has no market of its own it cannot be a commodity or a factor of production. Money has no intrinsic use price. It simply comes into use after the demand signals are provided from the spending side. Consequently, money stock cannot be formed by savings in such a micro-money and real transactions linkages. Monetary policies in this system cannot logically promote savings. Interest-based instruments and speculation cannot occur because of the absence of short-term rates of interest. Spending is a source for making production a diversity resulting in the ultimate reduction of cost of production by means of risk and product diversification. Uncertainty is thereby controlled and the spending variable causes the growth of money-real economy variables. Stabilization and sustainability are realized by the principal action of the circular social causation of the knowledge-induced process model across the 'wider field of valuation' in dynamic life-fulfilling regimes of development (Myrdal, 1968; Choudhury, 1997).

Section 6: From Methodology to Methods: Contrasting the Islamic Micro-money and Real Economy Simulation from the Mainstream Economic Methods

Apart from the causality and aggregation problems of the equation of exchange in the quantity theory of money and the consequential inability to use this equation for developing the idea of micro-money, there are other problems that fly from the epistemological side of this body of theory into its methods. We will consider one such other problem below.

Equation (1) is revisited in the form,

$$MV = Py, \quad \ldots\ldots\ldots\ldots \quad (19)$$

$$\text{Giving, } g_M + g_V = g_P + g_y. \quad \ldots\ldots\ldots\ldots \quad (20)$$

Now consider the micro-money version of equation (1). Can this be put in the form (20)? No. Consequently, the method of quantity theory of money in the disaggregate exchange equation does no match up the growth rates of money and of the velocity of money circulation with the growth rate of spending in multimarket. One cannot therefore either aggregate from (1) into (19) or disaggregate from (19) to (1), no matter how appealing this would appear in the linear form. Consequently, we cannot derive micro-money stability and well-being results from the methodical conclusion as shown above.

The same question when inquired in the IIE-version of micro-money and real economy relations yields the following result: There is no concept of macroeconomic disaggregation of a stock of money M into its micro-monies equating to multimarket spending. It is possible only to aggregate the micro-monies by the spending formula in particular markets. However, this would not yield the concept of the macroeconomic money stock.

For the ith multimarket,

$$M_i = Sp_i \text{ (spending in ith multimarket)} = p_i y_i + r_i c_i. \quad \ldots\ldots\ldots\ldots \quad (21)$$

$$\text{The intrinsic } \theta\text{-value is subsumed. Besides, } r_i c_i = p_i y_i - \pi_i, \quad \ldots\ldots\ldots\ldots \quad (22)$$

where, r_i denotes quantity of productive factors, ci denotes unit cost of factor use.

$$\text{Thereby, } M_i = 2p_i y_i - \pi_i. \quad \ldots\ldots\ldots\ldots \quad (23)$$

Since π_i is a proxy for well-being at the level of the firm or market, it is a simulated target function attaining a given value at the end of every completed *shuratic* process, as explained earlier. This kind of simulation is shown in figure 1. We can differentiate the variables in (23) primarily with respect to θ-values. The resulting equation is, $g_{Mi} = g_{pi} + g_{yi}$ …… (24)

This is the result corresponding to rates of change *with respect to the changes in θ-values* in any given completion of process according to the circular causation model explained in expression (6) or (10). With respect to both time variable and θ-values we must invoke the epistemological meaning that time is created by knowledge and only momentarily they are the same. This is authenticated by the *Hadith al-Qudsi* (divinely inspired Prophetic saying) in which Allah declares, "Sons of Adam inveigh against [the vicissitudes] of Time, and I am Time, in my hand is the night and day."(Al-Bukhari & Muslim). Expression (24) can thus be aggregated to maintain the equivalence between total micro-money and multimarket spending.

Section 7: Policy Conclusion

Today, in the eve of a post-modernist epoch that is dawning before us, the old socio-scientific order is up for questioning and rejection in many ways. This is giving way to new epistemological roots of intellectual inquiry, discovery and innovative applications. The Muslim World today is to assess its station in this spectrum of novelty according to her own episteme of knowledge and life. Thus far she has failed miserably in all fronts and the aftermath of a global political economy of disorder and fragmentation is upon her.

Among the many issues that assume center stage in new perspectives of the globalization scene for the Muslim World, that which we refer to here as *ummatic* transformation, will be the nature of money, monetary policy and institutions and their relationship with the real economic transactional basis of sustainable development. In this regard, keeping in view the micro-money and real economic interrelationships, the automatic stabilization, sustainability and well-being effects of such an interactive, integrative and dynamically evolutionary order and the challenging new methodology and methods premised on the unity of *tawhidi* worldview, the ensuing critique of the mainstream economic order in this paper has opened up new dimensions for serious investigation.

To attain such an *ummatic* transformation we offer the following policy recommendations that emanate from this study.

1. The OIC with its membership is to galvanize the intellectuals, practitioners, public and private sectors and governments to establish a think tank or center/institute enabling discourse on the ways and means of putting into action a human resource development program (Choudhury & Korvin, 2001) that would develop the pragmatic understanding of the *shuratic* process of decision-making and put that into action.

2. The Human Resource Development Center on the understanding and application of the *shuratic* process methodology for *ummatic* change in all fronts but with a focus on the interactive and unifying dynamic relations between trade, development and real money, must be prominent. This calls for a policy on getting the banking systems of the Muslim World to enact a program that will incrementally change the existing banking relations based on fractional reserve requirements into a 100 per cent reserve requirement monetary system with the backing of the gold standard. This monetary policy change calls for a program of establishing a monetary system that looks at the function of micro-money in terms of its direct relationship with real economic transactions.

3. The banking community along with the national decision-makers, Muslim intellectuals and private sector practitioners are to assign a program promoting linkages between money and the real economic sectors and markets within the Muslim World over a stipulated period of time, within which a reasonable transformation into the endogenous monetary system with 100 per cent reserve requirement monetary system would be realized. During this process of change growing linkages between effective sectors and activities should be subjected to the trading and developmental patterns on the basis of the on-going monetary transformation.

4. The Muslim World should then be developing a regional trading bloc of the Muslim countries that would ultimately enact a common monetary transformation based on 100 per cent reserve requirement with the gold standard. This would cause the exchange rates and the common tariff value of the Islamic customs union to be based on the economic and social productivity of the integrating economies and in view of their complementary resource endowments. Thus the exchange-rate setting in such a case of

the 100 per cent reserve requirement monetary system would be converted into a productivity driven indicator rather than be determined by a monetary policy of the fractional reserve requirement system as the latter is conventionally treated exogenously in exchange-rate and interest-rate mechanisms.

5. Islamic banks, other banks and financing development intermediaries in concert with the national planning departments are to establish programs to jointly fund such complementary projects as an accepted focus of trade and development in the Muslim World. Such programs for developing and executing complementary projects should aim at vitalizing the private sector in co-ordination with the public sector and governments toward facilitating such developments that build on programs of linkages along lines of the dynamic life-fulfilling needs of development (Huq, 1997).

6. The dynamic basic needs regimes of development would correspondingly define the development and trade patterns of the Muslim bloc. This kind of *dynamic basic needs regime* vis-a-vis its linked manufacturing/service sectors would be a good sign in capturing today's global trend towards green industry and to keep the gaze of technological transformation on its appropriateness in this age of 'ecological revolution' (Korten, 1995). The commodity sector would then realize improving terms of trade, which is an important pre-condition for establishing the complementary relations between economic efficiency and distributive equity and between trade and development with the 100 per cent use of money in real economic activities.

7. The financing modes of the Islamic transformation process must of course be based on co-operative joint ventures (Choudhury, 2000b). *Mudarabah* and *Musharakah* instruments cannot continue to be understood simply as the financing instruments for specific project financing alone as they presently are. Rather, their broader meaning and effectiveness are to be realized within the foundational meaning of Islamic socioeconomic co-operation. M&M must thus be changed into policy instruments by the financial sector in concert with the central and commercial banks and the planning departments of members of the OIC. The same M&M instruments would determine the co-operative character of all other Islamic trade instruments and secondary financial instruments. This transformation can be realized through the use of a 100 per cent reserve requirement monetary system in determining the productivity driven values of exchange rates and common tariffs outside an integrating Muslim World.

8. In every area of institutional and policy changes recommended above the OIC with her sister organizations such as the IDB with the Islamic Research and Training Institute, Islamic Chamber of Commerce, Islamic Corporation for the Development of the Private Sector and SESRTCIC with its COMCEC must play catalytic roles in collaboration with the governments, public sector, private sector and development financing organizations of the OIC membership. The *shuratic* process model of *ummatic* change must become the human resource foundation (epistemology) for guiding the progressive *ummatic* transformation. The progress of the Islamic transformation in the years to come would then see the effective interactive, integrative and dynamic evolution of the echelons of interlinked *shuratic* processes and their complementary relations in terms of policies, programs and economic transactions on all fronts.

9. The centers/institutes implied above for facilitating the *shuratic* transformation in the areas of trade, development, money and the real economy vis-a-vis the central role of human resource development in all of these, respecting the understanding of the *shuratic* process in action, can be housed in IRTI and SESRTCIC or they can be launched in major Islamic universities.

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