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Islamic finance instruments for promoting long-run investment in the light of the well-being criterion (maslaha)

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Abstract

Purpose – The purpose of this study of this methodological abstraction is erected the nature of the well-being function as evaluative criterion. The well-being function (maslaha) evaluates the interrelationships between long-run investment (real sector), the corresponding financial instruments (financial sector) and the embedded socioeconomic variables and ethical values conveyed by extensive complementarities and participation in a systemic approach of unity of knowledge. Among the financing variables to be selected will be the transformation of debt-instruments into equity instruments. All financial instruments are to be transformed into a holistic participatory pooled portfolio.

Design/methodology/approach – The paper establishes the point that, the idea of long-run is appropriately that of a juncture of Islamic change during which the objective of well-being (maslaha) is evaluated (estimation leading to simulation) with long-run investment and Islamic financing instruments on the basis of the Islamic methodological worldview. This methodological worldview is premised on the ontological foundation of the episteme of organic unity of knowledge and the resulting world-system. The Qur’an refers to this foundation of knowledge as Tawhid. Tawhid is used in this paper to mean the Primal Ontological Law of Unity of Knowledge.

Findings – The most critical long-run investment program focused on is poverty alleviation and its equity-based financing instruments that reduce debt progressively to attain sustainable grassroots development with the ability to own, and the social capability to distribute resources and enable the grassroots. The corresponding interaction, integration and evolutionary dynamics of learning that emanate from the interrelationship of poverty alleviation as the focus of long-run investments and their attenuating financing instruments, along with the implications of inter-causal socioeconomic variables and the embedded episteme of unity of knowledge in the well-being function (maslaha). This paper is thus an abstracto-empirical contribution to the literature of Islamic finance, long-run investment and socioeconomic development with global significance.

Research limitations/implications – The choice of long-run investment for poverty alleviation and the corresponding Islamic financing instruments are summarized by the following Tawhidi epistemic schema (an extractive picture). Upon this epistemic methodological worldview, the entire structure of well-being and sustainability of socioeconomic development lies.

Practical implications – The paper brings out many of the properties that ought to be the truly moral/ethical and thereby the conformable analytical nature of the model of financing and investment in a combination of short-, medium- and long-term mobilization of resources to attain levels of social well-being as the objective criterion. Empirical work is done to bring the objective criterion to an applied level and to...
critically examine the work in the same field being carried out by many other ones, including authors and institutions. The empirical work done here can be widely extended to the case of estimating of the maslaha function (well-being).

Social implications – This paper carries an essentially moral and social perspective in its methodological orientation that is derived from the Islamic epistemological foundations of unity of knowledge (Tawhid) and applied to Islamic finance and investment theory with the well-being objective criterion.

Originality/value – This is an original paper that combines methodological abstraction with applied financing and investment perspectives. Such an abstracto-empirical approach has not been done in Islamic research writings.

Keywords Abstract-empirical methodology, Equity-based Islamic financing instruments, Long-run investment, Well-being analysis of poverty alleviation

Paper type Research paper

Objective

This paper brings out the highly significant role that the precise methodology of systemic unity of knowledge (Tawhid) plays in the truly Islamic worldview of change in the world-nation of Islam, the ummah. This also has significant implications in global learning as well. The emergent methodological and applied approach has been neither understood in Islamic economics and finance nor promoted for attaining moral, ethical and social change in the light of the Qur'an. Consequently, many of the substantive Islamic concepts and objective goals have been missed out of the study of life-fulfillment development process. This has happened both at the methodological level of intelleciton and the applied level. This paper argues by the philosophy of science in technical and analytical language that a substantive change in methodology and application in the light of the Tawhidi unity of knowledge is needed for true Islamic intellectual awakening in this post-modern era. Without this necessary intellectual and applied change, the field of Islamic economics and finance cannot be sustained, as it succumbs to sheer mainstream thought and practice. The theme of specific study is investment and financing in the light of the methodological orientation that is presented. The language of this analytical paper on the methodology and application of the Tawhidi analytics to the topic of development financing and structure of capital in investment, as expected, is tersely analytical. This paper is a criticism of the present unchallenging state of Islamic socio-scientific thought and introduces the challenging Tawhidi methodological worldview of Islam and the world-system. The language of this research paper is therefore rigorously analytical.

The span of the Primal Ontological Law conveying the Tawhidi worldview will be substantively invoked in this paper. This is meant to comprise both the analytical methodology and the empirical basis of substantive policy-theoretic applications in evaluating the consequences of the interrelationship between appropriately understood participatory Islamic financing instruments and long-run investments. The comprehensive evaluation of the imminent long-run sustainability dynamics is carried out in reference to the well-being objective criterion (maslaha).

The results on the inter-causality between long-run investment, financing instruments, socioeconomic variables and ethical embedding are thus explained as a comprehensive model of reference. Thereby, both methodological and empirical policy-theoretic ethically induced issues are examined in this paper both from the perspectives of abstraction explaining the spirit of the Islamic worldview to the global intellectual community and its empirical applications unraveling the practice of the Islamic spirit in the details of the world-system (Choudhury, 2014). This world-system in our case comprises Islamic financing, long-run investments, socioeconomic variables, ethicality and their interrelations formalized and explained by the well-being criterion.
Structure and contribution of this paper

Abstraction in the paper

The above kind of an approach integrates abstraction with applications (abstracto-empirical). Abstraction as methodology with policy-theoretic methods invoking together the moral spirit of Islamic economics, finance and banking has not been explored in the literature in Islamic economics, finance, science and society by others. Regretfully, this is a Muslim decadent fact despite the abundantly sophisticated theoretical and applied materials that have been contributed in this area of erudition by this author. The reason for the soaring gap in sorting out the sure reality remains deeply questionable and inexcusable.

Consequently, the very foundational philosophy, understanding, resource development issues, objectives, applications and structures of Islamic economics, finance and banking have remained distanced. The result at the end has been empty of the ontological pursuit of Tawhid as the Law of Organismic Unity of Knowledge in the generality and particulars of the world-system under study. This issue is explained in this paper in respect of the particular study of inter-causal (organic) relationship between long-run investment, financing instruments, socioeconomic variables and the emergent ethical embedding, altogether complemented in the well-being criterion.

Contribution of the paper

This paper contributes in the directions of filling the gap between Islamic abstraction and its applications in empirical policy-theoretic ways. The methodological approach and its methods of applications comprise the evaluation of the interrelationships between Islamic financing instruments and long-run investments with other well-being implications. The critical well-being objective criterion that invokes the Tawhidi worldview and its quantitative applications forms the foundational formalism of the critical methodology and its evaluation.

Sections of the paper

Following the above sections, the various parts of this paper comprise the following sections: Section 1 covers the background of questionable performance between the legitimacy and practice of Islamic finance and banking in respect of their divide between Islamic spirit and Islamic practice. Section 2 presents some data for Malaysia on sectoral distribution of Islamic financing modes. This type of sectoral financial distribution proxies for the investment types befitting the sectors. Section 3 formalizes the Tawhidi methodology of unity of knowledge and its evaluative method of estimation and simulation of the well-being function to study the inter-causality between Islamic financing and long-run investments with ethical embedding. This section also presents some critical methodological concepts for the evaluative formalism and empirical work that follow. Section 4 draws on two sets of empirical work and derived inferences. These lead to the imminent policy-theoretic conclusions arising from the evaluation of the well-being function in terms of the Islamic instruments and long-run investments. Section 5 is an inferential conclusion for a fresh outlook on the methodology and its methodical applications concerning Islamic financing instruments and long-run investments in terms of their inter-causality along with socioeconomic variables and ethical embedding of the well-being criterion.

Section 1

Questions around the performance of Islamic finance and banking industry

Khaliq Ahmad in his July 31, 2016, article in New Straits Times Online points out the phenomenal growth of the Islamic banking sector gained through its competition for market
shares in global financial markets. This commercial feat has been acquired principally by the medium of so-called Islamic secondary financing instruments, as in Malaysia. It is recorded that annual growth rate of Islamic banking assets between 2009 and 2013, which principally comprise real asset valuation and those mobilized by Islamic financing instruments, stood at 17.6 per cent. The *Economist* forecasts that the Islamic banking asset growth rate will increase by 19.7 per cent annually by 2018. Yet growth rate of Islamic banking financial assets is a weak indicator of the share of assets in the financial market[1].

The principal Islamic secondary financing instruments in its remarkable financing and banking performance on growth rates are found to be sukuk, ijara, bithman agil and murabaha. On the other hand, there is a significant decline in profit and loss sharing instruments as signified by mudarabah and musharakah. The Islamic financing instruments thus intensify in their unequal distribution and between the primary and secondary groups of instruments.

*Figure 1* shows the much skewed nature of Islamic financing in recent years, even as the growth of the Islamic financial industry increased phenomenally during that same time. There is also the serious complaint that Islamic financing and banking have only uttered the Islamic moral catchword. But they have not lived up to the Islamic spirit. *Figure 1* will be used to examine this criticism by the well-being index later on in this paper.

In what follows we exemplify the contrasting scenario for the case of Islamic financing embedded in the ethical framework of the Tawhidi Law of organic unity of knowledge influencing the financial distribution. The Tawhidi epistemic perspective of unity of inter-causal relationship between the financing instruments forms systemic organism in the case of the holistic treatment of complementary relations within the total portfolio. In this paper, we will emphasize the aggregation by interaction between the Islamic financing instruments as the true approach to cooperative financing as opposed to the independently distributed status of the financing instruments (aqd = legal contracts) outside the generalized systemic view of the interactive totality.

The “θ”-values are weights indicating the degree to which complementarities can exist between the financing instruments in a balanced way (participation). The individual weights of “θ”-values by their appropriateness in accordance with the *Shari‘ah* are averaged out across the columns of financing instruments as shown. The method of assigning θ-ranks to the various rows of financing variables by time is detailed in Section 4.

**Section 2**

There needs to be an analytical examination of the trends in the existing financing trend and its Islamic implication in generating real asset holding, product diversification and risk diversification with the appropriate investor behavior in risk-holding and real asset production (investment). These two investor attitudes are linked in ways that vary between the prevailing shareholding models of Islamic banking and the ought-to-be stakeholding model of finance and asset linkages (*Lozano, 2002*). Shareholding model implies acquisition of commercial wealth and capital accumulation. Stakeholding model implies a well-being model of distribution of resources and ownership toward enhancing social empowerment, entitlement, sustainability and moral consciousness. These attributes being specific socio-ethical variables in the well-being criterion (maslaha) of evolutionary learning, they cannot therefore logically support profit-maximization objectives, goal and investor behavior. In the shareholding case, the traditional orthodox objective function has been maximization of the shareholders’ wealth as the value of the firm. Islamic banks and financial institutions have retained this problematic maximization criterion.
There is no analytical logicalness in upholding the maximization approach, and thereby facing the implications of financial mercantilism (Nitzan and Bichler, 2000). In another case of financing and investment, we note that as opposed to capital accumulation, the evolution of capital formation is a concept quite different. These two different goals bear distinctly different implications on the nature of savings and sustainable development in the context of addressing social well-being.

Thus, at the end, a sound explanation must be given to the interactive choices of financing instruments and long-run investments as capital formation ways having the objective of sustaining or satisfying (Simon, 1987), rather than maximizing the objective criterion, as mistakenly taken to be an Islamic objective target. Goals pursued mistakenly in
so-called Islamic economics and finance are investor expected utility maximization, social welfare maximization, firm’s profit-maximization, bank savings (Hirshleifer, 1970), debt-instruments and capital structure (Modigliani and Miller, 1958).

Wherewithal, the complex and holistic objective of evaluating (estimating and simulating) well-being as opposed to welfare criterion must be understood by the academia and practitioners interacting together to understand the interactive, integrative (consensual) and evolutionary learning dynamics of inter-causal complexity between investment, financing, socioeconomic variables and well-being (maslaha). The choices of financing instruments and long-run investments are thereby a complex approach invoking the Tawhidi epistemic methodology and formal methods that interrelate moral, ethical, socioeconomic and commercial variables with investment and financing vectors in a formal design of model and discursive participation (systemic inter-variable complementarities).

There are also other factors that militate as significant ones in the evaluation of the well-being objective criterion of Islamic financing, investments and socioeconomic variables with ethical embedding in the well-being function. A few special ones that need to be highlighted are, first, the methodical specification of the well-being function in the light of the foundational methodology of organic unity of knowledge signified by abstraction and quantitative configuration of interaction, integration and simulated complementarities (participation) between the critical variables of the well-being function. There is also the great importance of quantitatively evaluating the well-being function in terms of the impact of knowledge parameter, i.e. organic unity of being and becoming (Prigogine, 1980) in the evaluation of the well-being function. Although these issues are general for all problems studied under the Tawhidi methodological worldview, there is yet also the pressing importance to know how the ethicized variables are quantified. An example of this case is the valuation rate that needs to be estimated by the appropriate kind of the asset valuation model with Islamic methodology and its supporting formal method of valuation.

The problem of the Shari’ah in respect of investment, financing and socioeconomic valuation by the well-being function
In the most recent Shari’ah Advisory Council Report of Bank Negara Malaysia (Bank Negara, internet visited August 2016), a central emphasis is placed on the diversification of ijara financing instruments (rent financing by hire and purchase). Although Shari’ah Academic Council has not shown the methodical way of determining the ijara rate of return, and particularly so within the holistic portfolio of other instruments as securities forming together the pooled fund, yet this issue remains a most pressing one for Islamic fund choices and asset evaluation[2]. Thereby, the complementarities within and across the real and financial sectors are subjected to the same kind of intergenerational evaluation of the variables, including rates.

These issues together bring out yet another important problem of choices of long-run investments corresponding to savings (Islamic financing resources), inter-investments sectoral and gross productivity. Such a productivity measure is calculated by (productivity/investments)total or sectoral, in the light of the participatory dynamics of organic inter-causal relations of the well-being function.

The questions surrounding the appropriate development of the Shari’ah rules without necessarily confining the ijithad to so-called “maqasid as-shariah” and “shari’ah compliance” areas need to be investigated. As we will explain in the section on methodology, such a bold yet magnificently qur'anic approach rests strictly on the continued ontological study of the Qur’an and the sunnah by discourse in the light of the methodological
worldview of qur’anic consilience (usul al-fiqh al-tawhid) to discover the epistemic unity of knowledge and the generality and specifics of the world-system being studied.

At the present time, there continues to exist the problem of disparate use of Shari’ah rules in Islamic financing and choices of assets. For instance, Malaysia adopts a retail financing approach in identifying choices of financing instruments and the coterminous assets. This is a microeconomic perspective of “shari’ah-compliant” financing. It has a vast degree of fiqh content (juristic interpretation) in determining the choices of instruments and assets. Such an approach to financing that is different from the investment approach of “shari’ah compliance” prevailing in the Arab Middle East is an example of the problem of non-standardization of goals and choices of instruments and assets by means of the vast diversity of Islamic financing instruments that now proliferate the “Islamic” financial markets.

Section 3
Foundational issues of inter-causality between Islamic financing and long-run investments in the well-being function: methodological issues

Well-being. The well-being objective criterion called maslaha in the “maqasid as-shari’ah” literature is an abstracto-empirical model that reflects the methodology of organic unity by pairing between the good things of life. Maslaha can be evaluated by estimation and simulation in view of the methodological impact of Tawhidi unity of knowledge concerning degrees of organic unity of interrelations (complementarities) between the variables included in the well-being function. For the well-being function concerning Islamic financing and long-run investments, the inclusion of variables must denote socioeconomic, financing and investment categories. The well-being function is the measure of evaluated degrees of organic complementarities between the variables. Such a holistic choice will reflect the Tawhidi methodology of unity of knowledge by degrees of complementarities (participation as balance = wasatiyyah) between the variables. Such inter-causal relations by the force of organic nature of unity of knowledge by abstraction and the inter-variable complementarities make all the inclusive variables to be endogenous in nature.

Of recent, there has been interest in this area of development of the maslaha function (Mustafa Omar and Fauzia Mohammad, 2016). But the consideration of the endogenous nature of inter-variable relational causality is still not in the Islamic literature other than in our joint works in cognitive and epistemic economic papers and books. Yet such a functional ontological relationship has been in the literature on the sociology of economics (Toner, 1999). In the methodological part of this paper and the empirical work detailed in Section 4, we explain how the well-being function combines its abstracto-empirical aspects, thus explaining the integration between methodology and the method of empirical evaluation.

Tawhid as the monotheistic primal ontological law of unity of knowledge

The generalized epistemic model of “everything” (Barrow, 1991) is explained in expression (1). It is then particularized to the case of Islamic financing and long-run investments.

Let $\Omega$ denote the totality of primal ontological knowledge as the foundational law of unity of knowledge. $\Omega$ is thereby the supercardinal manifold of knowledge (Rucker, 1982) that causes all organic relations of unity of knowledge to occur by reference to text and participatory discourse relating to the grand design of the unified world-system in the framework of epistemic unity of knowledge.

Let “$S$” denote the primal functional ontological mapping of parts of the open yet complete knowledge manifold $\Omega$ as the supercardinal topology into the epistemology of discoursed knowledge formation concerning the rules, and thereby, the construction of the generalized model of the world-system that is induced by the episteme of unity of
knowledge. From the generalized model emerge particular cases and applications. Examples of these are long-run investment, financing and socioeconomic variables that define the unitary methodology of the well-being function.

The well-defined continuous mapping from $\Omega$ on to the generality of the unified world-system model by "S" forms the explanatory and functional operational episteme of unity of knowledge. This stage of the derived law from the epistemic origin is denoted by $\{\theta^*\}$. We thereby write for this stage of primal epistemic relations the expression, $[\Omega \rightarrow S \equiv (\Omega, S);] = \{\theta^*\}$. Thus, any well-defined monotonic topological transformation, say G, of this topological relationship is denoted by $G(\Omega, S) = (\Omega, S) \supset G(\{\theta^*\})$. $(\Omega, S)$ is the primal ontological law of unity of knowledge[3]. $\{\theta^*\}$ is knowledge-flow. This is still at the level of abstraction and rule-setting concerning their derivation from the epistemic law of unity.

$[\Omega \rightarrow S \equiv (\Omega, S);] = \{\theta^*\}$ is next followed by further discourse of the primal functional ontological law on specific matters. The generality of the episteme of unity of knowledge thus assumes its worldly particulars in the transformative stages of unity of knowledge on the unified world-system, while also explaining the oppositely rationalist nature of the world-system premised on systemic differentiation. A most pronounced example of such differentiation is methodological individualism and conflicting modes of dialectics in economic and social theories (Buchanan, 1999; Sztompka, 1991). The vector $\{\theta^*\}$ thus leads into the discursive nature, and thereby, interactive and integrative nature of evolutionary learning processes that are characterized by the Tawhidi ontology. The resulting imminent knowledge-flows arising from $[\Omega \rightarrow S \equiv (\Omega, S);] = \{\theta^*\}$ are denoted by $\{u^*\}$.

The combined episteme of the formation of unity of knowledge and the unified world-system, where the objective criterion is always to estimate and simulate the well-being function, $W(x_1, x_2, ..., x_n)$, denotes the measure of the degree of unity of organic relations between the selected variables, $(x_1, x_2, ..., x_n)$, Such organic relations explain the inter-variave complementarities. The ordinal dynamics of interactive, integrative and evolutionary learning are explained by expression (1) (Figure 2).

**Short-run and long-run investments: savings and investment relations for economic stabilization**

In accordance with the episteme of Tawhidi unity of knowledge where time does not play a dynamic creative role but simply one of recording knowledge-induced events, the dynamic role instead is conveyed by the knowledge-flows as shown in expression (1). Thereby, in light of this epistemic understanding of dynamic events, the short-run investment is defined by the course of learning processes during which no substantial adaptation of technology occurs in factors of production to cause change according to the Tawhidi episteme. Long-run feature of investment is defined by the course of learning processes during which there occurs substantial technological change caused by the adaptation of factors of technological change in the light of Tawhidi episteme. In some such ways, Stigler (1966) had also defined the ideas of short-run and long-run in economics with respect to technological change in a similar way. The shortest change is over the market period. But this is not an observable phenomenon.

The relational correspondence between investment and financing is that of the real economy and the financial economy. The continuity of the resulting kind of equivalence between investment (I) and financial saving (Sv) out of the corresponding financing instruments is the mark of a stable economy caused in the Islamic case by the principle of ownership and value, referred to as qabd.

In the Islamic case, $I(\theta) = Sv(\theta)$ for $\{\theta\} \leftarrow [(\Omega, S); \{\theta^*\}]$, as explained in expression (1). This is a sign of complementarities between $I(\theta)$ and $Sv(\theta)$, along with their individual levels of disaggregations, respectively. These states are evaluated by the well-being
function. Investment and financing relationships in the well-being function point out that the Islamic economic evaluation involves issues of the abstracto-empirical case of socioeconomic and ethical variables relating to investments and financing in the well-being function.

The consequential interactive, integrative and evolutionary learning interrelationships between the aggregate and disaggregate components of $I(\theta)$ and $Sv(\theta)$ occur in the well-being function. The implication then is that the inter-causality between short-run, long-run and savings and financing in Islamic case must always be open to the possibility of business cycles, constrained though because of automatic stabilization. Yet the reflexive interactions in continuity between the real sector diversification with participatory financial sector risk-diversification cause investor behavior differently from the neoclassical postulates of risk-aversion and risk-taking.

The fact is that under risk-diversification and production-diversification, the following result reflects risk-taking behavior: $\frac{d}{d\theta}(\text{Var}(E(W(\theta))))/\text{q}(I(\theta))*\text{sh}(\theta)) = \frac{d}{d\theta}[\text{unit risk}] < 0 \Rightarrow \text{unit risk in the expected statistical meaning of well-being concept of investment and financing relationship moves oppositely to evolutionary knowledge-
variable[4], \{ \theta \}-vector under the compound effect of risk-diversification (number or volume of shareholding, \text{sh}(\theta)) and production or investment diversification, q(\theta)). The compound factor, q(\theta)\text{sh}(\theta), means the investments q(\theta) undertaken by unit shareholding either in reference to the number of shareholders or in reference to the amount in shareholding. In fact, the more appropriate idea of stakeholding should be included here.

Pooled portfolio of financing instruments and interactive investments
According to the holistic well-being-centered explanation of choices of long-run investments and their Islamic financing, the participatory nature of such variables along with the socioeconomic and maslaha variables altogether points to the pooled portfolio. Such a portfolio is formed by the interactive organic aggregation of interrelated elements of coterminous financing and investments. That is, the diverse real sectors of investments are interrelated in the pooled portfolio. The financing as well becomes interrelated in the real sectoral choices of investments.

The pooled portfolio concept gives rise to extensive implications, as of money and real economy, the nature of fiscal–monetary interrelationships and in sustaining balanced relationship between investments and financing affecting risk-diversification and production-diversification with deepening complementarities between the diverse entities. The effectiveness of the pooled portfolio at the end will be to save a financing instrument like mudarabah and istisna and to provide appropriate valuation of rents in ijara, etc., all of which are long-run investment financing modes. Yet, another example of the effectiveness of interaction between short-term and long-run investment financing is to consider foreign trade financing (FTF) as an instrument for sustainable development of national and ummah economies in a unified bloc (Choudhury, 2016b). Islamic Foreign Trade Financing Certificate has not been developed by any Islamic financing institution and Islamic scholars. A modulation of the Foreign Trade Financing certificate has been introduced by Choudhury (2016b).

Sustainability as the proof of relationship between Islamic financing and long-run investments
In expression (1) followed by the explanation of the other segments mentioned above by the properties of interactive, integrative, and evolutionary (IIE) conjointly by the episteme of Tawhidi unity of knowledge are all sustained by the property of continuity [expression (1)] along processes. Thus, the idea of sustainability is a long-run precept. It therefore links up with the concepts of long-run investments and financing. The historical trajectory of sustainability is therefore conveyed by the continuity of evolutionary learning by interaction and integration in defining events, E(\theta, x(\theta), t(\theta)). In the case of selecting long-run investments by appropriate financing instruments, these variables are taken up together with the maslaha elements of evolutionary learning in unity of knowledge quantified in their parametric form.

An example in the case of evaluating the sustainability of Ijara fund to finance long-run real investments for which it is suitable must necessitate the well-definition and continuity in reproductive relations with critical indicators. Among such indicators are rate-determination on asset valuation, methodology and formal methods of reproducing the intertemporal evolutionary learning processes and discourse on performance determination at specified points of time, and thereby, the occurrence of various attributes defining events at those specified points of time.
An example of such an asset valuation method of sustainability is the overlapping intergeneration valuation of assets by the interaction of maslaha criterion variables with investments and financing in the well-being function. Such a complexly embedded method that carries along with it the methodology is shown in Figure 3.

In the forward overlapping generation model of asset valuation with the well-being totality, the trajectory History (HH) is the locus of many event evaluation points. Such events encompass all the stages shown in Figure 3. Thereby, in the specific valuation point say, \( T \), \( 0 < T < n \), the determination of the rate of return (say “\( r \)”) corresponding to the financial sector and the growth rate (“\( g \)”) corresponding to the real sector (i.e. proxy for real investments), the capitalized valuation without intermediate leakages but having new injections at every new point of valuation is denoted by:

\[
A_0 [ (1 + r)(1 + g) ]^T + A_1 [ (1 + r)(1 + g) ]^{T-1} + \ldots + A_{T-1} [ (1 + r)(1 + g) ] + A_T. \tag{3}
\]

In recent times, a good deal of mechanism is being tried out for the measurement of rents on leased assets by the Islamic interest-free method. The “shari‘ah compliance” approach as
suggested by Bank Negara Malaysia is unable to provide an endogenous general theory of rate-determination with integrative view between Shari’ah and economics, by taking account of the intertemporal effects of contingencies at event points.

Rate-determination by the overlapping generation model of Islamic asset valuation

We present the following approach to formulate the algorithmic approximation approach, contrary to the legal approach of setting rates. The latter ones have no dynamic effects along the trajectory of Figure 3. Along the trajectory HH in Figure 3, only the methodological implication of the episteme of unity of knowledge is in effect. Exogenous legal rule imposition of the Shari’ah on financial and economic matters is avoided.

The formulation of the intertemporal overlapping generation model for rate-determination can now be written as:

$$A_0 [(1 + r)(1 + g)]^T + A_1 [(1 + r)(1 + g)]^{T-1} + \ldots + A_{T-1} [(1 + r)(1 + g)] + A_T.$$ (4)

In the differential value form, expression (2) is written as:

$$\Delta A_0 [(1 + r)(1 + g)]^T + \Delta A_1 [(1 + r)(1 + g)]^{T-1} + \ldots + \Delta A_{T-1} [(1 + r)(1 + g)] + \Delta A_T;$$ (5)

With progressive trend to negative values with depreciation, expression (5) has a series of positive terms matched by a series of negative terms to yield a solvable equation in a polynomial form. Such a polynomial must have some real roots for “r” and “g.” The terms in expressions (4) and (5) along with the determination of the real roots of the polynomial near to their point of occurrence of an event are evaluated “nearest” to such points of occurrence of the events. Such points yield a high probability of the values of occurrence of their contingencies. We call such points as the “nearest points” of occurrence of events, subject to their best possible evaluation with contingencies. Now the valuation of “r” and “g,” and hence of assets by their rate-determination is approximated in two ways. First, the “nearest” points can yield their best probability limit values. Second, algorithmically in analytical projection over the intertemporal life of the long-run asset, the rates can be approximated by the real roots of the polynomial in “r” and “g” (or r + g).

Expressions (4) and (5) tie up with Figure 3 point-by-point of all the Events with the sequences of valuation of activities underlying such events, as shown in Figure 3. Expression (5) can be used as the ex-post rates (actual) differently from ex-ante (expected) rates, r, g, (r + g). These rates can be approximated by the Newton-Rhapson formula of approximating the real roots of polynomials (Jean, 1970)[5].

Dissolving all debts by changing the capital structure of asset holding for poverty alleviation

Our focus is on the Islamic financing of long-run investments that address the critical goal of poverty alleviation. A critical cause of poverty of a nation is the persistence and accumulation of debt. How can we explain this fact in terms of the strategies of long-run investments and their Islamic financing within the context of the well-being (maslaha) objective criterion?

Debt is caused by wants, passion for capital accumulation and exorbitant expenditure that are not sustainable within the limits of resources and affordable development regimes. On the other hand, pointing to the most critical choice of long-run investments toward
poverty alleviation, the goal of poverty alleviation needs the focus on life-fulfillment needs (Streeten, 1981). “Roti, Kapra, aur Makan” is the title of the award-winning 1950’s Indian movie. The title translates as the essential life-fulfillment needs for bread, clothing and shelter against the greed of wants (Levine, 1988). These are acronyms of much broader life-fulfilling essentials for human futures, poverty alleviation, empowerment and entitlement for the common good today and intertemporally (Ingloft, 1990). The great sages of all times, nations and human futures have cried out for this fundamental concept of well-being. Note in this regard Imam Ghazali (Karim, 2019), Imam Shatibi (Ashur, 2013; Attia, 2008) and Kantian views of moral antinomy in Rawls (1971), grassroots development in The World Bank (2001); UNDP (1997/1998/1999/2000).

Thus, we derive from the above reflections that the principal goal of human futures is to attain the wide domain of life-fulfilling needs. The interaction among such an evolving basket of needs will accumulate into means of poverty alleviation. The long-run, sustained and participatory nature of the concept of well-being with its inter-causal relations between the complementary variables defines the dynamic trajectory of life-fulfillment regime of sustainable development. The result then will be attainment of the balance and unity of relations between the critical ends. The choices of long-run investments for poverty alleviation that we are targeting in this paper is to determine the choices of such real assets and projects, to finance such projects and to restructure capital formation in respect of financing the particular choices for the goal of poverty alleviation, given the existing states of poverty at event points. These objective criteria are equivalent to financing the poverty-alleviating projects with the goal of attaining the well-being criterion of life-fulfilling needs against wants. Each event point shown in Figure 3 represents the evaluation and degrees of attaining the life-fulfillment needs by choices of investments and financing instruments in the well-being function.

The well-being evaluation of such points is like Imam Fakhruddin Razi’s regime of ubudiyyah (worshipping) goods (Noor, 1998), Imam Shatibi (Ashur, op cit) and Imam Ghazali’s (Karim, op cit) basket of maslaha goods and Rawls’ original point of social equality and difference principle in engendering Kantian kind of moral antinomy (Rawls, 1971). Such well-being evaluation points also codetermine the measures of states of poverty and levels of effectiveness of poverty alleviation congruently with attainment of levels of well-being, as this precept of organic oneness between critical variables was defined.

We therefore define the problem of long-run investment to be the attainment of interactive complementarities between critical activities for attaining all such activities that alleviate poverty. The interactive relations between critical variables form the attainment of well-being. The evaluation toward attaining degrees of well-being in terms of complementarities between critical variables maintains the circular causation between the critical variables that together alleviate poverty along the HH-trajectory of the IIE-governed events.

In Figure 4, we explain the circular causation relationship between the critical variables that interact in respect of the choices of investments, their financing, socioeconomic variables and the ethical parameters of epistemic methodology. The most important endogenous parameter that drives the entire IIE-learning system is maintenance of the episteme of unity of knowledge in “everything” that enters the field of investment-finance-well-being socio-ethical interaction, integration and evolutionary dynamics. Figure 4 explains the IIE-dynamics along the critical long-run investments with corresponding financing, and endogenous ethical focus as of consciousness, and sustainability by continuous evolutionary learning.
Figure 4.
Stages of social wellbeing for poverty alleviation as the long-run sustained investment with its Islamic financing instruments embedded in evolutionary dynamics of unity of knowledge as epistemic ethics.

Note: The focus on selection of long-run investment and financing for poverty alleviation in the wellbeing function points to the need for making sukuk friendly to village-based microenterprise and development of infrastructures and other long-run investments for the grassroots (Schumacher, 1973)
At the higher echelons of sustainability of the dynamic life-fulfillment regime of development, endogenous participatory policies and institutional norms expand upon the socioeconomic and ethical well-being of development regime (Goulet, 1995). Such policies will include extensive networking in capital formation between member countries of the Organization of Islamic Conferences to finance microenterprises in cooperation with Small and medium size enterprises, large and multinational corporations and inter-sectoral project linkages. This kind of an interactive approach between long-run investments, projects, sectoral production menus, financing, socioeconomic variables and ethical embedding in respect of the well-being criterion can be studied by means of innovative formulation of the input–output model with dynamic coefficients (Oxford University Press, 1989).

Technologies will be adopted in conformity with the increasing productivity of the dynamic grassroots investments of the diversified short-run and long-run types. The resulting technological change will carry with it the similar kinds of interactive financing instruments for meeting the financing of real assets. To the extent that the resulting businesses are smoothened by progressive movement into regimes of Savings = Investment of the type meeting the real asset development at the life-sustaining grassroots, to that extent debt is avoided and the monetary and fiscal coordination of the national economy is formed. The result then is the endogenization of policy variables rather than their imposition by say government and institutional actions. HH in Figure 3 explains the endogenous policy change by evolutionary learning.

Debt being progressively reduced in the above kind of macroeconomic coordination in dynamic life-sustaining regime of development with its appropriate mix of short-run and long-run investments, the choices of financing instruments will also focus then more on equity participation and progressively less in debt (dayn) instruments. The pooled portfolio with the interactive enhancement between musharakah, mudarabah, ijara, istisan and grassroots sukuk revolving around these other instruments, and reformulation of the murabaha financing instruments into a cooperative one (instead of a debt-instrument) within the pooled portfolio will assume prominence contrary to individuated secondary instruments of the short-run type (’aqd).

In the end, as required by the relevance of sustainability of the life-fulfillment regime of development, participatory financing, meaningful investments by the banking sector, appropriate monetary and fiscal policy coordination will all together interact, integrate and evolve (IIE) to restore the presently missed Islamic moral objectivity of Islamic banks and financial institutions that has been overshadowed by aggressive animal spirit of Islamic mercantilist capitalism (Rodinson, 1973). Consequently, a general system model of orgasmic relationship using a stakeholder well-being model will be established contrary to the prevailing legal contract (’aqd) model of individualistic shareholders’ wealth-maximization model.

The reduction of debt financing and debt-ridden capital structure establishes its resulting circular causality of unity in organic relations between money and real assets and between self-reliant (ummah) coordination between monetary and fiscal (spending) policy (Choudhury, 2015). Long-run investments and equity-based financing choices in the trajectory of life-sustaining well-being induced sustainable development ought to replace the present-days’ burgeoning of ’aqd funds in mega projects to solve the debt problem of the ummah.

The resulting debt-freeing financing by equities in the pooled portfolio will serve two purposes together. These are production diversification from the side of investment choices on life-fulfillment projects and risk-diversification from the side of financing choices directed to participatory financing in the pooled portfolio (equity-based). The interactive and consensual approach to debt-reduction and well-being-economic expansion of the equity-debt swap is captured in the following form of inter-causality equivalences, as shown in Figure 5.
**Summarizing:** Choice of long-run investment would be microenterprise, human resources, natural resource, education, health and inter-sectoral real asset projects (input–output matrix of dynamic coefficients).

**Financing would focus on:** Equity-based (mudarabah, musharakah, ijara, istisna, foreign trade financing, restructured sukuk).

**Socioeconomic choices:** Employment, price stability, production and risk diversification, policy coordination, social security.

**Well-being parameter to measure knowledge-flows:** \( \theta \) denoting degrees of complementarities between the selected variables.

The choices of long-run investments with appropriate equity-based financing along the long-run sustainable dynamic life-fulfillment regime of development for poverty alleviation are shown in Figure 4.

### Section 4

**Empirical Result 1 corresponding to Figure 1**

Table 1 gives the detailed empirical results with the estimation of the well-being function corresponding to the data of Figure 1.

For each of the years, we take only MUR (X4,t), MUSH (X5,t), MUD (X6,t), TOTAL (X8,t). We run the log-linear regression equations, \( t = 2006, 2009, 2010, 2011, 2014 \):

\[
\ln X4, t = a0 + a5.\ln X5, t + a6.\ln X6, t
\]

and recursively [6]:

\[
\ln X5, t = a0 + a4.\ln X4, t + a6.\ln X6, t
\]

\[
\ln X6, t = a0 + a4.\ln X4, t + a5.\ln X5, t
\]

\[
[\ln \theta = A0 + A4.\ln X4, t + A5.\ln X5, t + a6.\ln X6, t]
\]

\( \theta \)-values are generated by the formula (\( i = 4, 5, 6, 8 \)):

\[
\theta_i = \{ \text{[values of } (x4, t; x5, t; x6, t, x8, t \text{ resp. corresponding to } \theta = 10)]/10 \} \times \text{[individual values of } (x4, t; x5, t; x6, t, x8, t \text{ resp.]}}
\]

### Figure 5.

Stakeholder's well-being function (maslaha): \((\theta, x, I, F)\) \[ \theta \], with circular causality between \((\theta, x, I, F)\) \[ \theta \] in debt-equity swaps
\[
\theta = \text{Avg. } (\theta_1, \theta_2, \theta_3, \theta_4); \text{ each } \theta_i \text{ calculated by } (1)
\]

We re-estimate:
\[
\ln X_4, t = a_0 + a_8 \ln X_8, t + b \ln \theta 
\]
and recursively:
\[
\begin{align*}
\ln X_5, t &= a_0 + a_8 \ln X_8, t + b \ln \theta \\
\ln X_6, t &= a_0 + a_8 \ln X_8, t + c \ln \theta \\
\ln X_7, t &= a_0 + a_4 \ln X_4, t + a_5 \ln X_5, t + a_6 \ln X_6, t + d \ln \theta \\
\ln \theta &= A_0 + A_4 \ln X_4, t + A_5 \ln X_5, t + A_6 \ln X_6, t + A_8 \ln X_8, t
\end{align*}
\]

\(\theta\)-values are calculated as above.
\[
\begin{align*}
\theta_i &= \{ [\text{values of } (x_4, t; x_5, t; x_6, t; x_8, t, \text{ resp. corresponding to } \theta) \\
&= 10 \text{ for highest financing value}]/10 \} \times [\text{individual values of } (x_4, t; x_5, t; \\
&x_6, t \text{ resp. along their columns}]
\end{align*}
\]

\[
\theta = \text{Avg. } \{ \theta_i \} \text{ as above}
\]

**Statistical results**

Independent financial values of major categories (MUR, MUSH, MUD)
\[
\ln X_4 = 3.74 + 0.597 \ln X_5 + 0.281 \ln X_6
\]
\[
t: \begin{array}{ccc}
(3.13) & (12.64) & (1.37)
\end{array}
\]
\[
R^2 (\text{adjusted}) = 97.5
\]

<table>
<thead>
<tr>
<th>(X_4)</th>
<th>(X_5)</th>
<th>(X_6)</th>
<th>(X_8)</th>
<th>(\ln X_4)</th>
<th>(\ln X_5)</th>
<th>(\ln X_6)</th>
<th>(\ln X_8)</th>
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<td>23,016</td>
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<td>376</td>
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<td>10.0498</td>
<td>7.536364</td>
<td>5.925889</td>
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<td>23,289</td>
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<td>275</td>
<td>128,107</td>
<td>10.05604</td>
<td>8.283494</td>
<td>5.616771</td>
<td>11.76062</td>
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<tr>
<td>58,746</td>
<td>16,636</td>
<td>148</td>
<td>284,616</td>
<td>10.98098</td>
<td>9.719324</td>
<td>4.997212</td>
<td>12.55899</td>
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</tbody>
</table>

<table>
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<tr>
<th>theta4</th>
<th>theta5</th>
<th>theta6</th>
<th>theta8</th>
<th>theta</th>
<th>lntheta</th>
</tr>
</thead>
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<tr>
<td>0.595955</td>
<td>0.094374</td>
<td>3.93617</td>
<td>1.058936</td>
<td>1.421359</td>
<td>0.351613</td>
</tr>
<tr>
<td>3.917884</td>
<td>1.127074</td>
<td>10</td>
<td>3.95007</td>
<td>4.743756</td>
<td>1.556829</td>
</tr>
<tr>
<td>3.965547</td>
<td>2.379178</td>
<td>7.31383</td>
<td>4.501047</td>
<td>4.5399</td>
<td>1.512905</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>3.93617</td>
<td>10</td>
<td>8.484043</td>
<td>2.138187</td>
</tr>
</tbody>
</table>

**Table I.** Computations of ranking by \(\theta\)-values (degrees of complementarities) of the selected primary financing values \(\{x_4, x_5, x_6, x_8, \theta\}\) for studying the impact of pooled portfolio on well-being
Sum of inter-variable elasticity coefficient is less than 1. Hence, the inter-variable relations do not have economy of scale.

\[ \ln X_5 = -6.05 + 1.65 \ln X_4 - 0.470 \ln X_6 \] (20)

\[ t: (-2.71) \quad (12.64) \quad (-1.34) \]

\[ R^2 (\text{adj}) = 97.6 \]

Sum of inter-variable elasticity coefficient is marginally greater than 1. Hence, the inter-variable relations have weak marginal economy of scale.

\[ \ln X_6 = -3.61 + 1.72 \ln X_4 - 1.04 \ln X_5 \] (21)

\[ t: (-0.54) \quad (1.37) \quad (-1.39) \]

\[ R^2 = 0.49 \]

Sum of inter-variable elasticity coefficient is less than 1. Hence, the inter-variable relations do not have economy of scale.

Each financing value with the total portfolio:

\[ \ln X_4 = 5.45 + 0.219 \ln X_8 + 1.32 \ln \theta \] (22)

\[ t: (2.41) \quad (0.95) \quad (4.57) \]

\[ R^2 = 99.9 \]

The inter-variable sum of elasticity coefficients is greater than 1. This indicates the existence of economy of scale in the relationship.

\[ \ln X_5 = -32.4 + 3.70 \ln X_8 - 2.00 \ln \theta \] (23)

\[ t: (-3.99) \quad (4.49) \quad (-1.93) \]

\[ R^2 = 99.7 \]

The inter-variable sum of elasticity coefficients is greater than 1. This indicates the existence of economy of scale in the relationship.

\[ \ln X_6 = 45.1 - 4.05 \ln X_8 + 5.06 \ln \theta \] (24)

\[ t: (2.13) \quad (-1.88) \quad (1.87) \]

\[ R^2 = 63.9 \]

The inter-variable sum of elasticity coefficients is greater than 1. This indicates the existence of economy of scale in the relationship.

\[ \ln X_8 = 16.3 - 1.01 \ln X_4 + 0.310 \ln X_5 - 0.0175 \ln X_6 + 2.03 \ln \theta \] (25)

\[ \Rightarrow \text{highest elasticity coefficient value to } X_8 \text{ is contributed by } \theta. \]

\[ \ln \theta = -8.02 + 0.494 \ln X_4 - 0.152 \ln X_5 + 0.00863 \ln X_6 + 0.492 \ln X_8 \] (26)
Explanation of results

The statistical formulation and estimation of circular causation relations [expressions (19)-(25)] leading to the evaluation of the quantitative form of the well-being function [expression (26)] display the methodological foundation of the Islamic primal ontology of Tawhidi unity of knowledge in particular problems of the world-system that are at our analytical disposal. This brings out the combined ontological, epistemological and phenomenological overview of the Tawhidi worldview as the essential Islamic socio-scientific philosophy. This body of essential Islamic thought has been ignored in Islamic economics and finance.

In empirical terms, the above-estimated equations point out that the economy of scale caused by inter-variables relations occurs in the case of their relations with the total financing variable X8 (pooled portfolio). In this case as well, the degree of complementarities between the variables indicated by \( \ln \theta \) is found to have the largest impact on the economy of scale. Contrarily, in the case of independent status of the financing variables (X4, X5, X6) without the complementing total financing portfolio variable (X8), there is no trace of economy of scale. The conclusion then is that immersion of every financing instrument in the pooled portfolio of all financing together as a coordinated and interactive system causes greater gains and security for the existence of the individual instruments of the pooled fund. The same inference is true for the total of all instruments taken together by virtue of the elasticity effect of \( \ln \theta \) in the system of interactive relations among the financing instruments in the total financing portfolio.

Independent treatment of financing instruments is the message of “shari’ah compliance.” That is because long-run investments and their financing need to be planned by sustainable cause and effect. “Shari’ah compliance” results in respect of short-run investment and financing choices. Such financial and investment plans do not aim at historical evolution of sustainability.

The holistic interactive treatment of all and every instruments in the total portfolio is the message conveyed by the generalized system idea of the sustainable long-run by its imminent inter-variables interaction in the general system model of endogenous (conscious) ethicality (Boulding, 1954)[7]. The general system model of well-being has escaped notice by the present-days’ Shari’ah scholars. Yet, it is a much-needed perspective to establish stability and sustainability with extension and growth of the organic complementary interrelationship between financing instruments and their extended relationships with the real sectoral socioeconomic activities.

In the same way, estimated equation (10) shows that the largest elasticity effects are contributed almost equally by X4 and X8 (total). We also note from Figure 1 and Table I that the primal Islamic financing instruments under their independent treatment shows MUD and MUSH to be almost extinct. These point out the absence of interactive support between the primal financing instruments namely, (MUR), MUSH and MUD that otherwise ought to exist in the sense of the episteme of unity of knowledge as primary equity-based instruments.

The second question is regarding the scale of Islamic financing of long-run investments. Presently, there is no information regarding matrix-type breakdown of Islamic financing by concepts and investments, better still of financing by projects with investments or sectors with investments/projects. The dearth of data in this direction indicates the dire need for developing better forms of Islamic databank. Only upon such information, reliable policy-theoretic inferences can be gained.

Presently, only certain approximations can be made by examining the intensity of Islamic financing in various selected sectors over a period in Malaysia. Table II points out that within the sectors, Islamic financing has intensified considerably between the years.
<table>
<thead>
<tr>
<th>Year (end of year)</th>
<th>Primary agriculture (%)</th>
<th>Mining and quarrying (%)</th>
<th>Manufacturing (including agro-based) (%)</th>
<th>Electricity, gas and water supply (%)</th>
<th>Construction (%)</th>
<th>Education, health and others (%)</th>
<th>Household sector (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Islamic banks</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>1,367.2</td>
<td>10.09</td>
<td>15.5</td>
<td>1.12</td>
<td>3,369.5</td>
<td>5</td>
<td>239.9</td>
</tr>
<tr>
<td>Total</td>
<td>13,539.80</td>
<td>1,380.80</td>
<td>66,163.9</td>
<td>4.659.5</td>
<td>20,075.6</td>
<td>19.62</td>
<td>2,124.6</td>
</tr>
<tr>
<td>2015</td>
<td>11,437.6</td>
<td>30.43</td>
<td>6,142.1</td>
<td>44.02</td>
<td>20,075.6</td>
<td>19.62</td>
<td>2,124.6</td>
</tr>
<tr>
<td>Total</td>
<td>37,586.40</td>
<td>13,951.40</td>
<td>102,307.8</td>
<td>11,499.8</td>
<td>62,782.20</td>
<td>39,867.8</td>
<td>82,5213.5</td>
</tr>
</tbody>
</table>

Source: Bank Negara data
2007 and 2015. But taking account of the results pointed out by Figure 1 and Table I, the sectoral deepening of Islamic financing would have been in secondary financing instruments and much of that would have been in short-run debt financing as opposed to equity financing. In the presence of a regular scheme of repayment of the debt financing, the inference is that the short-run debt financing in the sectors has been to the benefit of the lenders. These are the Islamic banks and financing institutions. The issues of sustainability of the well-being objective criterion within a program of Islamic financing of long-run investments are not affirmed on empirical grounds.

The role of Islamic development bank some Islamic banking in Islamic economic, financial and social change
The programs and actions of the Islamic Development Bank (IDB) come under critical review in the light of the abovementioned type of abstracto-empirical results. Whereas the IDB should have been promoting standardization of Islamic financing instruments and thereby of the structure of assets as in the case of life-fulfillment regimes of development, there is nothing that can be found in regard to these in IDB programs. Each of her different blocs of member countries is shaped by different Shari’ah directions of sects (madhabs). Malaysia is driven by the Shafei sect; the Arab Middle East is driven by Hanafi and Hanbali sects. Consequently, several Islamic financing remains disparate between countries, groups and Islamic banks (Islamic Development Bank, Modes of Financing, 2019; HSBC, 2017). HSBC has discontinued its Islamic financing operations in several Muslim countries. IDB finances Islamic banks in her membership only as a majority shareholder. IDB does not have an advisory capacity on ummah change along development planning and social change in the membership.

This paper and its abstracto-empirical results point out that IDB needs to pursue the truly Islamic methodological worldview of epistemic unity of knowledge in financing and projects across member countries and sectoral regime of life-fulfillment development. These possibilities do not exist presently. The essential moral and ethical development prescriptions in this regard is ignored by Islamic economists and finance experts, despite that the generalized methodological worldview truly grounds the Islamic ontological foundation of Tawhidi unity of knowledge.

The simulation perspective of quantitative well-being function subject to circular causation relations: spatial domain analysis method
The quantitative form of the well-being function in expression (26) points out empirically that simulation is needed to improve the contribution of X5 (musharakah) on well-being (“θ”). This means to simulate the existing statistically negative coefficient of “θ” in relation to X5. A computerized method to generate all possible simulated coefficients is shown by Figure 6. The explanation is provided below Figure 6.

\[ \ln \theta = -8.02 + 0.494 \ln X4 - 0.152 \ln X5 + 0.00863 \ln X6 + 0.492 \ln X8 \]

Spatial domain analysis (SDA) map is generated to show how simulated selection of the negative coefficient (bold \(-0.152\)) in the estimated expression of well-being, expression (26), can be made to reduce the negative value or if simulated choices of coefficients allow to convert it into a positive value. The economic meaning then follows in terms of the well-being (\( \theta \)) elasticity of X5[8].

The estimated regression equation shows the coefficients associated with variables at given points in space. However, in this statistical approach, it is not possible to generate the coefficients for each point in space which consists of infinite number of points. On the
contrary, the SDA approach allows the generation of coefficients at each point of the space. Hence, this facilitates the changing of the interaction between the variables from negative to positive or vice-a-versa. Therefore, SDA generated coefficients table next to the topography demonstrates the range of coefficient values within a certain region of the space each having differently colored schema.

**Conclusion**

This paper has incisively argued and pointed out through a critical approach in development financing that there is an urgent need for selecting long-run investments and their equity-based financing instruments for attaining the central goal of the well-being criterion by poverty alleviation and development sustainability in the Muslim World. The long-run project of this type ought to be carried out by a mix of short-run, medium-run and long-run portfolio of investments and financing instruments albeit with emphasis on life-fulfillment sustainable choices. The result then would be pursuit of the life-sustaining regime of development. The objective criterion for focusing on such a goal is the Islamic well-being (maslaha, as opposed to welfare) criterion with embedded epistemic meaning of unity of knowledge signified by complementarities between the critical variables of well-being.

This inference drawn from the abstracto-empirical results and argumentation of this paper can be introduced into endogenous policy planning with its discursive participatory dynamics in a stakeholder model of decision-making. The underlying decision-making processes and the abstracto-empirical implications of the attenuating modeling of the epistemic methodology of unity of knowledge (Tawhid) can indeed be computerized as explained by the several formalisms, figures and explanations shown in this paper. Statistical, Economic, and Social Research for Islamic Countries could indeed become the home for such a permanent model of large systems and their data banking.

The formalism that emerges on the topic of long-run investments and long-run financing has substantive internal properties and their applied consequences in light of the episteme of unity of knowledge shown by pervasive and continuous complementarities. These details ought to be understood and analytically applied for and by the objective criterion of well-being as explained in this paper for choices of long-run investments financed by equity participatory instruments for attaining sustained life-fulfillment regime of development. Such a scenario and the will to attain it is not in sight.
Notes

1. By definition the share of banking financial assets “s” is, \( s = \frac{AI}{AT} \), where AI denotes Islamic banking financial assets; AT denotes total financing assets in the capital market. We write, \( g_s = \frac{g_{AI} - s}{g_{AT}} \). Because it is clamored that \( g_{AI} > g_{AT} \), therefore, because, \( 0 < s < 1 \), therefore, \( g_{AI} > s \frac{g_{AT}}{} \). This means that, although \( g_{AI} > g_{AT} \), yet the share of Islamic financing assets remains lower than the share of the growth rate \( g_{AI} \) relative to the growth rate \( g_{AT} \). The way to turn around both shares and growth rate for Islamic banking financial assets is to ignore these indicators and disaggregate the share ratio and its growth rate into individual rates of growth of the share ratio by disaggregate stakeholders share rates. Such share rates have implications on the well-being function. See later.

2. William H. Jean uses Taylor’s theory of expansion of analytical functions (well defined, continuous and differentiable) formalizes the model of the portfolio of securities.

3. In Islamic language, \( \Omega \) is the supercardinal domain of the primal ontological law of Tawhidi epistemic unity of knowledge. That is \( \Omega \) denotes the totality of the Qur’an. Thereby, \( S \) as the well-defined and continuous primal ontological mapping, from \( \Omega \) to the ontological formation of laws in \( \{ \theta^* \} \) is referred to in Islamic terminology as Sunnah, the guidance of the Prophet Muhammad concerning \( \Omega \) and the generality and specifics of the detailed and unified world-system or otherwise being to the contrary. \( \{ \theta^* \} \) is the resulting primal functional ontological derivation of the worldly law in terms of the primal ontological episteme of unity of knowledge explaining all things, namely, truth, falsehood and the undecidable. The process toward deriving \( \{ \theta^* \} \) is known as shura. This involves the evolutionary learning dynamics called tasbih and ijtihad in respect of their meaning in the Qur’an. The resulting analytical stages comprise the realm of abstraction.

4. In the extended meaning of evaluating the holistic expected well-being effect of financing and long-run investments, because of the inherent probabilistic measures, we can write (Jean, 1970, pp. 182-184), \( EW(x; \theta(x)) = C(\theta) + A(\theta).W(E(x; \theta(x)) + B(\theta).Var[W(E(x; \theta(x))], A(\theta), B(\theta), C(\theta) \) are dynamic learning coefficients with parametric variations of \( \{ \theta \} \) according to the episteme of unity of knowledge.

5. Occurrence of events. On the other hand, if the entire IIE-dynamics of the well-being ethical inclusion and the evolutionary learning dynamics are considered with the empirical measurement in the presence of “\( \theta \)”-values and circular causation relations, then the overall wellbeing (maslaha) components of the rate-determination can be performed at the “nearest point” of valuation at such event points.

6. The approximation for the simplified quantitative form of the conceptual wellbeing function can be seen as follows: let \( W(\theta) = \theta^N \), say. By the theorem: “positive monotonic transformation of a wellbeing is a wellbeing (utility in neoclassical economic theory)” (Henderson and Quandt, 1980), the quantitative approximation of the conceptual well-being function is given by, \( \theta = F(x(\theta)) \).

7. The message is not to discard the individual variables of the financial contract (aqd). The importance in the circular causation relations and well-being evaluation is to examine the possibility of saving certain non-performing financial instruments and bring them to solvency in the joint interactive financing of long-run investments by the portfolio of instruments as securities along with effective production and risk diversifications for the common stakeholders’ aggregate well-being. The evaluation of the degree of effectiveness of a combination of ‘aqd-based and portfolio-based financing of long-run investments is carried out by the following formulation of well-being and circular causation relations: \( x(\theta) = \{x_1, x_2, \ldots, x_n, \Sigma_{i=1} x_i\}; W(\theta) = W(x(\theta)); s.t. x_i = \Sigma_{i=1} a_{i,1} f_i(x_i(\theta)) + b_i \Sigma_{i=1} x_i(\theta); \theta = F(x_1, x_2, \ldots, x_n, \Sigma_{i=1} x_i(\theta)) \).

8. More complex forms of functions and relations can be considered in the presence of dynamic coefficients and non-linear equations.

8. The partial elasticity coefficient is defined by, \( \frac{\partial \ln \theta}{\partial \ln X_5} = (\frac{\partial \theta / \theta}{\partial X_5 / X_5}) = \% \Delta \theta / \% \Delta X_5 = -0.152 \). \% \Delta \theta = -0.152x \% \Delta X_5. In the case of the effect of 1 per cent increase in \( X_5 \), the resulting
elasticity effect on “θ” is numerically, $\frac{\partial \ln \theta}{\partial \ln X_5} = -0.152 \times 1\%$. The SDA-simulation generates a sea of elasticity coefficients as explained above that can be used in place of $-0.152$ for improving the wellbeing effect caused by $X_5$. One such simulated value toward lower negativity is $-0.076$. A further case of less negative or positive simulated value of this elasticity can be selected by interviews and discussion. In the Islamic institutional discursive experience, the practice of discussion and consensual choice is known as shura in its wide sense of analytical use.

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Further reading


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