The ontological law of Tawhid contra '*Shari'ah*-compliance' in Islamic portfolio finance

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Abstract

Purpose – The purpose of this study/paper is the generalized ontological law of monotheism (unity of knowledge) and its functioning in the financial world system is summarized and contrasted with the recent conception of "*shari'ah*-compliance". Thereby, some specific rulings of *shari'ah*-compliance in Islamic finance are critically annulled. The principal problem of the inability of *shari'ah*-compliance in the formalism of rate-setting and debt cancellation is pointed out in analytical ways. The alternative valuation models in the light of the Tawhidi ontological law are formalized. Many important issues are examined in analytical and Tawhidi authentic ways of Islamic law contra to *shari'ah*-compliance.

Design/methodology/approach – The epistemological approach commencing from the Tawhidi ontological law is used as the premise of developing analytical formalism to counter the irrelevant rulings done by the field of *shari'ah* compliance. Thereby, endogenous moral and ethical foundations are studied in deriving analytical finance models of asset valuation, rate-determination and debt cancellation.

Findings – Substantive analytical results are derived for intellection in the area of the primal ontological law of Tawhid that negates many of the rulings framed up in *shari'ah*-compliance area of Islamic law. These results can guide financial academia, practitioners and policymakers.

Research limitations/implications – The paper can be expanded subsequently to the area of analytical Islamic finance in general by further investigating the Modigliani and Miller theorem on optimal debt-equity structure of corporate finance. An introduction to this study is provided in this paper as a starting point of dealing with the debt problem of *shari'ah*-compliance.

Practical implications – The paper presents important guidance as input for the rulings of *shari'ah*-compliance idea held by *shari'ah* advisory boards and similar institutions presently operating at the financial level.

Social implications – The paper presents a subtle transformation of the social and financial order in the light of the Tawhidi ontological law quite differently from the way that *shari'ah*-compliance envisions.

Originality/value – The theoretical and projected applied perspectives in analytical finance presented in this paper provide a methodological worldview for all areas of social finance with ethical consciousness. Such analytical approach is much needed today in the reconstruction of global finance in the scale of ethics and away from the sole focus on capital market efficiency.

Keywords Islamic epistemology, Critique of Islamic *Shari'ah*-compliance idea,
Islamic financial modeling

Paper type Research paper

Shari'ah in its two forms, namely, Maqasid as-*Shari'ah* (purpose and objective of the *shari'ah*) and "*shari'ah*-compliance", and their applications, do not anthologize Tawhid as the foundational law of divine unity endowed by its analytical methodology.

Tawhid, *as law and methodological worldview*, presents the primal ontology of the monotheistic unity of knowledge and its relations of organic unification in the world system. Hence, the references to secondary sources (scholars), traditions and weak ahadith (prophetic sayings) are predominant, particularly in the derivation of rules in *shari'ah*-compliance idea (Azami, 1978). This authenticity problem raises a lot of contradictions and questions.

The result has thus been complicated labyrinth of rulings relating to financing instruments rather than understanding the relational causality between the instruments to attain the common objective of well-being by organic unity of knowledge that the Tawhidi methodological worldview pronounces. The terminology *well-being* conveys the objective meaning of the organic unity of knowledge between diversity of actions and responses in choices between the good things of life as endowed by the Qur'an. Thus, Tawhid in its simple worldly implication of the attainment of righteous actions, thinking and sustainability of applications in self and society, is ignored and not understood, particularly in *shari'ah*-compliance rules.

The consequences of the contradictions between the so-called *shari'ah*-compliance implications and its ambivalence of Tawhid in worldly actions lead to unauthentic inferences in the *shari'ah*. The inconsistency is also found in the case of oppositeness between the functional meaning of maqasid as-*shari'ah* and *shari'ah*-compliance. Indeed, even maqasid as-*shari'ah* is not *the* Islamic law. It is incomplete and shows vagaries caused by human design, urf and adah (customs and cultures). It also presents a traditional perspective of worldly affairs (muamalat). It ignores to study the grand design of universal unity and evolutionary learning dynamics as systemic relational worldview (Auda, 2008).

On the other hand, there are the short-run quick rulings according to the so-called *shari'ah*-compliance approach. *Shari'ah*-compliance by its short-run nature has avoided the permanently great questions of well-being, its extendibility and sustainability and circularly integrated deductive–inductive unity of reasoning. Thereby, the inferences drawn from *shari'ah*-compliance are cursory and referentially traditional in nature. Thus, neither maqasid as-*shari'ah* nor *shari'ah*-compliance conveys any aspect of the true Islamic law[1]. Besides, they do not give the pivotal, most indelible, unchangeable nature of the primal ontological law of Tawhid. Yet, it is true that the *shari'ah* can reflect the understanding of Tawhid in worldly matters to the extent of human involvement in this quest. The *shari'ah* does not represent the res extensa and res cogitans vista of the Qur'an mapped, as this must be by the authentic sunnah as the anthropic explicatory medium of the unity of the world system in its generality and details (Choudhury, 2015a).

Maqasid as *shari'ah* once derived and permanently linked to the investigation revolving around Tawhid in all functional matters becomes only a secondary sustained and continuous system of juristic deliberations. In this state of the *shari'ah* in its incompleteness and anthropomorphic nature of long-term continued deduction and induction, reasoning leads to discourse. Discourse is characterized by ijtihad (investigation), qiyas (analogy) and ijma (consensus). But even so among different and often contending Muslim sects, there has resulted non-harmonization and non-standardization of issues regarding the acceptability of certain financing instruments. On the other hand, rules derived for financing instruments are very often based on untenable conclusions arising from traditions, while avoiding the intellection into new vistas of knowledge arising from the Qur'an and the authentic ahadith (sayings of the Prophet Muhammad, and thus sunnah) (Asad, 1987). That is, Tawhid as the primal ontological law of unity of knowledge between diversities of being and becoming in the grand design of the universe, in its conception of generality and particulars, has been forgotten for long now (Buchman, 1998; Bruteau, 1997)[2]. Therefore, for instance, the

shari'ah has never been in practice in history except by the mandates of rulers. Contrarily, Tawhid lives forever.

Scholars writing in the field of a critical examination of the *shari'ah* have pointed out the partial equilibrium and partial system orientation of the existing Muslim understanding of the *shari'ah* as a partial worldview (Weeramantry, 2001; Hassan, 2002; Coulson, 1984). Indeed, the *shari'ah* fell into such dysfunctional problems by the intrusion of the traditional interpretive (fiqh) approach made by the traditionalists in denial of the holistic intellection process of Tawhid. The result has been a heavily personified development of administrative impositions, often based on opinion rather than the natural law of justice and balance (mizan) as in the Qur'an and being mapped onto the generality and particulars of the world system by the sunnah and authentic discourse.

The overshadowing problems of social compliance idea and the Tawhidi rejection concerning Islamic finance

In this paper, we will consider examples of the confusing and untenable intertwining between financing instruments in *shari'ah*-compliance rulings; we will then follow up this issue with the financial implications of the Tawhidi methodological worldview of unity of knowledge. We start by fixing the premise of Tawhid as the law of "everything" on the goal of well-being. Well-being as the objective criterion of unity of knowledge is evaluated in reference to the inter-causal relations between representative choice variables. The consequential implications are regarding relational organism in Tawhidi methodology versus 'uqud or contractual nature of static financing instruments in *shari'ah*-compliance; general and particular derivations of Tawhidi methodology in complexity by richness versus linear aggregation of functions in both maqasid as-*shari'ah* and *shari'ah*-compliance; the comprehensive intellection in Tawhidi methodological worldview contrary to institutional and juristic perspectives of *shari'ah*-compliance contracts; the way to attain such goals is the formalism and application of the objective criterion of well-being in Tawhid, which is analyzed subject to a system of inter-causal relations between critical variables characterizing the problem under study. In a special case, such a perspective of well-being criterion with systemic relations of inter-causality between the choice variables in terms of the Tawhidi epistemology of unity of knowledge can be formalized by a vector of financing instruments; and such a vector of variables can be extended to the inter-systemic case of multi-stage sectoral-variable systems that are complemented with the finance sector. Examples of such complementary sectors with the financial sector are the economic, social and socio-scientific sectors of investigation.

The Tawhidi methodological outlook contrary to *Shari'ah*-compliance approach
Deductions concerning selective shari'ah financing instruments
A principal problem with the 'aqd-(contractual)-based financial deductions are regarding rent-valuation over time. This constitutes the complex yet rich reality of complex compounding of factors caused by events of intertemporal nature, such as the point "h" on the historical path of asset valuation shown by HH in Figure 2[3]. The Tawhidi worldview considers the point "h" to be embedded in the knowledge, space and time dimensions by virtue of its probabilistic nature over time. We therefore denote such a point on life-trajectory of everything under valuation by $h(\theta)$ and $HH(\theta) = \int h(\theta)d\theta$; and its multiple integrable complex of variables and their relations.$h(\bullet)$ – embedding in knowledge, the $\{\theta\}$-domain, means it is inter-relational with many similar points in this dynamic domain. This is the systemic and cybernetic nature of the $h(\bullet)$ –neighborhood, denoted by the expansionary domain as shown.

Next, in reference to Figure 1, every such h(•) embodies the space variable denoted by $\{\mathbf{x}(h(\bullet))\}$.

We thereby have a tuple embedding to denote the point, h(•). This point is denoted by $\{h(\theta),\mathbf{x}(h(\theta))\}$. In the general case for all points in the h(•) –neighborhood we write, $\{\theta,\mathbf{x}(\theta)\}$. The bold symbol $\mathbf{x}(\theta)$ can denote vector, sequences of vectors, matrices and extended mathematical forms and relations (Gel'fand, 1961).

The time variable enters as a record-keeping element of events with the probabilistic occurrence of $\{\theta,\mathbf{x}(\theta)\}$. We thereby write the h(•)-point in regard to intertemporal continuity sustained by $\{\theta\}$ as the non-Cartesian learning coordinate, $\{\theta,\mathbf{x}(\theta),t(\theta)\}$.

Financial valuation occurs at every point along $HH(\theta)$ at specific points of time and across $HH(\theta)$ in terms of intertemporality. The point, $h(\{\theta,\mathbf{x}(\theta),t(\theta)\})$, carries the forces of interaction and integration by algorithmic and discursive experience across multi-dimensional systems and cybernetics defined over knowledge, space and time.

Tawhidi financial valuation

Consider three hs(•): house insurance, car insurance and life insurance (all under takaful, insurance). These securities interact to set up a unified predictable but probabilistic scenario. For instance, death and life expectancy can affect life insurance payments, and thereby, payment of house insurance and car insurance. Likewise, payment of car insurance affects payment of house insurance. That is why combined house insurance and car insurance results in lower premiums. Such a combined insurance payment affects the volume of life insurance payment over the lifetime. Thus, at the end, the Tawhidi perspective is to set up a social well-being function to test and simulate for positive complementarities between the three forms of insurance premiums, subject to circular causation inter-relations between them. The general model is shown in Figure 1.
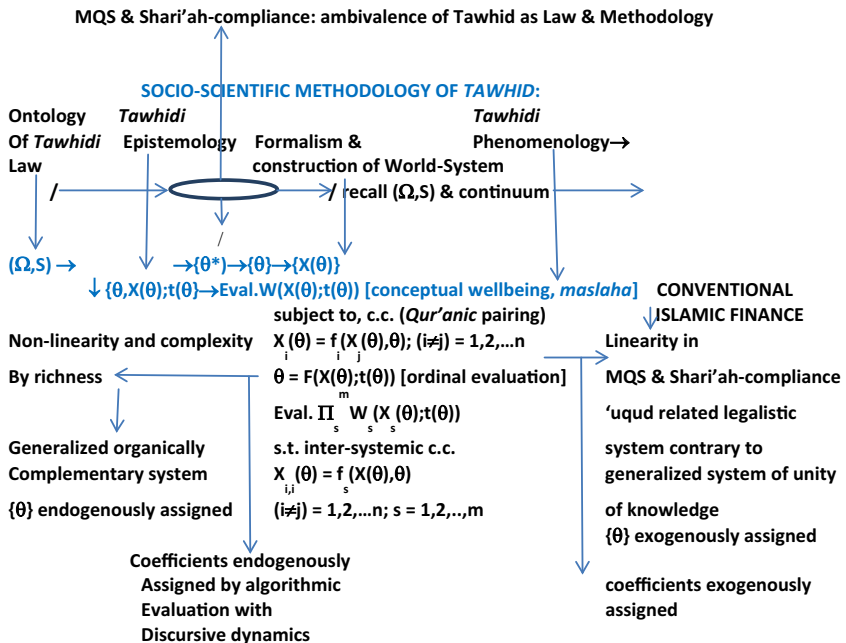

Figure 1.
The Tawhidi methodology of unity of knowledge in the generality and particulars of the universal world system

Contrarily, in the case of *shari'ah* ruling [*Shari'ah* Advisory Council (SAC), 2016], each of the aforementioned premium relations can be taken within the hire-purchase sale contract. In *shari'ah*-compliance idea, each premium rule is treated as a separate 'aqd (contract). For instance, the ruling is that two risky contracts cannot be combined for the sake of financial valuation. Such 'aqd-ruling differentiates life insurance to be independent of its cause and effect in relation to the other premiums. For instance, the car insurance is shown as not being related with the other premiums via the probability of accident. House insurance is seen independently of the ability to pay premiums on the car insurance and the life insurance, on grounds of ability to pay.

Following is the *shari'ah* enunciation (SAC, op cit) regarding car insurance (AITAB):
Car insurance, AITAB: shari'ah-compliance rulings and contradictions.

- The modus operandi of AITAB shall consist of two independent contracts, namely, ijarah financing contract (rent) and al-bai` (sales) contract.

Thus, the joint and interactive nature of lease to purchase is not an interdependent structured contract for car purchase, and thereby car insurance with other ones:

- The AITAB agreement shall include a clause that specifies, "will purchase the vehicle" at the end of the lease period, as well as a clause on early redemption by the lessee.

This contract ought to be structured as a conditional probabilistic one based on contingencies at the beginning of the contract and the end of contract:

- The deposit paid to the vehicle dealer does not form a sale contract, as it is deemed as a deposit that has to be paid by the Islamic financial institution.

Yet the Islamic financial company will include this deposit in its total price and will be subject to probabilistic contingencies:

- In line with the principles of ijarah (rent), the Islamic financial institution as the owner of the asset shall bear all reasonable risks relating to the ownership.

How can this indemnify the purchaser of the asset from the probabilistic contingencies? The owner is free!.

Home insurance, commodity murabaha (up-front mark-up financing by financial company). In recent times, murabaha (mark-up pricing) as a primary financing instrument and several secondary financing instruments are all debt instruments. The debt is charged by exogenously set rental rates (e.g. ijara rates) between the contracting partners on outstanding debt. This mode of financing has been criticized as a kind of riba (interest) financing over time (Misri, 1987). Riba is strictly forbidden in Islam on all matters. The Islamic implication is serious in the intertemporal sense, and there is no meaning of debt momentarily. Intertemporal charging of such prefixed ijara rates over time contaminates the legitimacy of ownership and distribution of assets and their benefits with shadow rates of riba. In the presence of all forms of riba, the principle of well-being (social benefit) called maslaha is destroyed at every moment and event like h(•) along HH(θ) in Figure 2 across knowledge, space and time dimensions.

Figure 2.
Tawhidi events in knowledge, space and time dimensions

The pursuit of *shari'ah*-compliance has failed to think about such real intricacies of rate-setting that remains central to ijara type periodic payments on all *shari'ah* instruments concerning debt. See appendix on the topic of Islamic financing irrelevance to Modigliani and Miller's optimal structure of the financial firm (Jeans, 1970). This Islamic financial irrelevance further proves that presently no model of rate determination has been found in the *shari'ah*, which would otherwise evaluate the Islamic valuation of financial events at h(●) over time.

Bank notes based on ijara concept in *shari'ah*-compliance
In this regard, Malaysian *Shari'ah* Advisory Council unravels the inherent problem, as in its concept of bank notes based on the ijara concept. This financing method works in the following way:

• Bank Negara Malaysia (National Bank of Malaysia) will sell the beneficial interests of its real property (such as land and building) to a Special Purpose Vehicle (SPV). The SPV will then lease the property to Bank Negara Malaysia for a specific period of time through execution of an ijarah muntahia bi al-tamlik agreement. This is a lease contract ending with acquisition of sale or gift. As a consideration, Bank Negara Malaysia will pay rent (at a rate which is agreed upon during the conclusion of the contract) for every six months throughout the lease period.

• Bank Negara Malaysia will provide to the SPV wa`d (rent to own) to repurchase the property at an agreed price on the maturity date. The idea is too cluttered. It can be immensely simplified.

In these contractual agreements, the ijara rate and the future price are set exogenously by partnership contracts and not by socioeconomic and well-being realities (maslaha realities) arising from market transactions over time and by changes in relations and through discourse, as is the case with the Tawhidi knowledge-flow denoted by $\{\theta\}$.

Commodity murabaha contract
In the case of debt liquidation payment on a commodity murabaha contract, a similar problem of rate-setting continues and deepens because of the mega-projects that get involved. The ijara rate now equals the rent charged on an asset, which in turn includes a liquidate rate + fair profit margin + exigency rate. The spread of this total rate-setting takes place at every point like h(●) over time. Yet in such rate-setting none of the premium or rent-setting is an actual rate around the neighborhood of h(●) in the "nearest" probabilistic sense of valuation, which is the objectified probability measure of subjective probability based on socio-scientific algorithmic computation and expert discourse of the shura (consultation and discourse) type (O'Donnell, 1989; Lawson and Pesaran, 1985; Choudhury, 2015b).

Generalized inference regarding rents on *shari'ah*-compliance debt-instruments
Because of the problem of rate-setting of the ijara type, which in fact runs throughout all the Islamic financing instruments as debt instruments, there does not exist a viable and meaningful interest-free approach to asset valuation in the present ruling under *shari'ah*-compliance. First, there is no model in existing *shari'ah*-compliance literature that can do safe valuation of assets by rate-setting, like the inter-generational valuation model of assets and benefits by the 'nearest' type objectified probability measures (Choudhury, 2011)[4]. Second, the exogenous rate-setting appears as shadow rate of interest in *shari'ah*-

compliance idea. Thereby, the inter-causal relations between housing premiums (rents) in murabaha and car insurance premium in AITAB do not exist. The deferred rate-setting *ad hoc* contaminates both of these transactions by the formula of 'aqd contractual legalization of exogenous price-setting mechanism.

The riba (interest) nature of rate-setting under *shari'ah*-compliance approach of 'aqd legislation, causes at least two further serious illegitimacy problems in Islamic financing. First, the debt financing nature of all Islamic financing instruments is caused by the lack of understanding of the method of valuation in the money, finance and real economy (MFRE) circular causation relations. This vast topic can be only summarized here by stating that the value and quantity of monetary transmission must be equivalent to value of spending in the good things of life in the real economy. The result then is the establishing of the circular causation relations between MFRE. This phenomenon is of an intertemporal nature across the historical trajectory HH(θ), realizing itself at every point h($\bullet$), as in Figure 2.

Consequently, as in the case of murabaha and its like in ijara financing, such as istisna (manufacturing loan to complete a contracted job), bithman agil (deferred payment sale), tawarruq (cash murabaha) and sukuk (Islamic bond), the delay in payments in the MFRE-model exists permanently. Contrarily, in the Tawhidi inter-relational model of unity of knowledge, the monetary and resource mobilization are recycled and regenerated through the imminent 100 per cent reserve requirement monetary system that drives the circular inter-relations. All that is required in the Tawhidi perspective of MFRE-model is the well-functioning of a life-fulfillment regime of development to prevail in tandem with the 100 per cent reserve requirement monetary system (100 per centRRMS). The 100 per cent RRMS may exist with the gold standard as a numeraire. But this standard need not necessarily be a circulatory gold currency.

The end result in the MFRE arrangement then is this: Islamic bank savings are continuously mobilized into the life-fulfillment regime of real economy (Masud, 1984 on Shatibi) (i.e. not withheld to create debt) by participatory financing instruments. Examples of such instruments are co-financing, joint venture, equity financing, profit–loss sharing, productivity-based exchange rates and yields on regenerated asset values. The central bank adjusts its marginal supply of money to make the equation on quantity and valuation in MFRE-model uphold at all levels of resource mobilization into recommended spending[5]. Thereby, bank-savings are annulled. Hence, debt created by an inequality in such an otherwise mismatch in the MFRE model is permanently cancelled.

Debt permissibility in *shari'ah*-compliance is thus a misconception. Debt is logically inadmissible in response to the maslaha principle generated by the holding of Shatibi-basket in the MFRE model according to the Tawhidi methodology of inter-causal organic relations of unity of knowledge with zero interest rate of any kind.

The other serious problem of shadow rate of interest caused by the exogenous 'aqd treatment of ijara rates intertemporally is its riba contamination across all so-called *shari'ah*-compliance instruments based on debt. This is true between AITAB and murabaha in terms of mark-up financing as debt payment by ijara rate. Thereby, their inter-causal relations are also adversely affected by this illegitimacy of the shadow rate of interest as ijara rate. The implication is that this spread of adverse effects distorts the well-being criterion maslaha, by the interruption in the positive complementarities between the essentials of just value and balance (al-wasatiyyah). This goes against the Tawhidi ontology of pervasive inter-causal unity of knowledge between the good things of life. The *shari'ah*-compliance problem is caused by the lack of contextual understanding and the knowledge of appropriate method of rate-setting under 'aqd-based fatawa (ruling).

Life insurance premium

Life insurance is not disapproved under either the *shari'ah* or the Tawhidi law[6]. Rather, it is the method of financing and premium setting that poses the takaful problem in general. One notes that to date there is no truly methodological approach in Islamic financing for rate-setting in the absence of riba. Rate-setting involves setting of premiums, mobilizing such premiums through appropriate Islamic channels, affordability of caring and thereby attaining social well-being. These are long-term sustainability attributes in general. But they have short-term probability of incidence of mortality rates and contingencies. A substantive difference between mainstream premium setting and takaful insurance is the role that interest rate plays in pricing contingencies. Yet the long-term structure of valuation of premiums remains critical in both of these kinds of insurance contingencies.

For instance, consider the general usage of valuation formula in the neighborhood of h(•) given by Taylor expansion of continuously differentiable function as the premium valuation function:

$$E(f(\mathbf{x}(\theta))) = f(E(\mathbf{x}(\theta))) = +[(\mathbf{x}(\theta) - E(\mathbf{x}(\theta)))] * f'(\mathbf{x}(\theta))$$
$$+ [(\mathbf{x}(\theta) - E(\mathbf{x}(\theta)))]^2 * f''(\mathbf{x}(\theta)) + \ldots + [(\mathbf{x}(\theta) - E(\mathbf{x}(\theta)))]^n * f^n(\mathbf{x}(\theta)) + ..\infty \text{ terms.}$$

(1)

This expression is rewritten from the insured's point of view by considering:

$$E(\mathbf{x}(\theta)) = \sum_{j=1}^{m} \sum_{i=1}^{n} \text{Prob}_j * \mathbf{x}_{ij}(\theta).$$

(2)

Equation (2) gives the expected value of "i" number of securities (insurances purchased) under j contingencies. In the simple case of a flat amount of insurance purchased for n cases with different probabilities of occurrence of j contingencies, we write:

$$\mathbf{E}(\mathbf{x}(\theta)) = n * \sum_{j=1}^{m} \text{Prob}_j * \mathbf{x}_j(\theta)/n = \sum_{j=1}^{m} \text{Prob}_j * \mathbf{x}_j(\theta).$$

(3)

$$\text{In the case of life insurance, } \text{Prob}_j = (1 - l_{y+t}/l_y),$$

(4)

with:
   l_y denoting living cohort of insured at the age of y;
   l_{y+t} denotes the same at the age of (y + t);
   (l_{y+t}/l_y) is the probability of survival; and
   ($1 - l_{y+t}/l_y$) denotes the probability of death.

Now, in the conventional case of insurances purchased by $\{\mathbf{x}_{ij}(\theta)\}$ as corresponding premium payments, the expression $\mathbf{E}(\mathbf{x}(\theta))$ would be the present discounted value of future expected premium payments (purchasing insurances). The discount factor is the time-preference rate, which is simply the time-value of money. This rate is equivalent to the nominal effective interest rate(s) according to the time of occurrence of events in the future and the opportunity cost measuring perception of occurrence of future contingency. Robinson (1961) pointed out such a time-based notion of opportunity cost as an incorrect one.

In the case of takaful, no premium calculation has been made to date. Hence, it replaced *ad hoc* by certain *shari'ah* rulings relating to ways of premium calculation on security and arrangement of insurance claim. Consequently, *shari'ah* boards have disallowed the two kinds of claims and payments like security and premiums. These modes of security financing are replaced by Rahn (mortgage) and musahamah, meaning periodic payments to and claims from takaful companies by the insured. The debt problem of ijara rate-setting persists.

The Tawhidi principle contrarily is that if financial flows under actual contingency ("nearest" point overlapping generation valuation) serve the well-being of insurance pooling partners and society at large, as by way of just payment (jus pretium) for a legitimate and actual cause of claim, then such a fair transaction could be permissible.

Now from the viewpoint of well-being based on the complementary and fair business dealing between paying partners and obligations of takaful as insurance companies, the above equation is written as follows:

$$E(W(\mathbf{x}(\theta))) = \sum_{j=1}^{m} \sum_{i=1}^{n} \text{Prob}_j * W_{ij}(\mathbf{x}_{ij}(\theta)). \tag{5}$$

As shown above, this equation simplifies to the following one:

$$E(W(\mathbf{x}(\theta))) = \sum_{j=1}^{m} \sum_{i=1}^{n} \text{Prob}_j * W_{ij}(\mathbf{x}_j(\theta)) = \sum_{j=1}^{m} \text{Prob}_j * W_{ij}(x_j(\theta)). \tag{6}$$

In the case of business insurance, and therefore life, $\text{Prob}_j = l_j/l_0$, with l_0 denoting total pooled outlay in insurance by the insured participants as paid-up capital. l_j denotes the claim against contingency j; $l_j < l_0$. $(l_j/l_0) < 1$ is the probability of a claim in specific types of contingency.

The difference between the takaful well-being objective and either the conventional premium capitalization or the silence of *shari'ah* on capitalization methods is that there cannot be a time-preference form of capitalization rate in Islamic valuation formula. Instead, valuation is done "nearest" to the points of occurrence like h($\bullet$) as was explained earlier. "Nearest" to every such point, complex systems of interactive, integrative and evolutionary inter-variable causal relations arise in respect of the embodiment of Tawhidi ontology of unity of knowledge in the objective criterion of well-being valuation at such points.

The well-being objective criterion

The well-being function in the Tawhidi methodological context is the objective criterion to study the degree to which inter-variable complementarities exist in the light of choices resting upon the precept of organic unity of knowledge between the blissful possibilities pointed out by maqasid as-*shari'ah*. Well-being function is first a theoretical abstraction defined in terms of Tawhidi unity of knowledge. This in turn is explained by circular causation between organically interdependent maqasid as-*shari'ah* choices defined by their specific variables. The degree to which such positive complementarities exist between the variables or can be constructed out of simulacra of the coefficients of the relational model results in inferences on sustainability and social balance explained by such inter-relations and simulated choices of coefficients. Thus, at the end, through the medium of well-being, the abstraction and the quantitative estimation of well-being bring together the three precepts. These are, namely, the primal ontology of Tawhid as the Law of unity of

knowledge, the gateway of maqasid as-*shari'ah* to blissful choices and the actualization of balance and sustainability by the principle of al-wasatiyyah (Choudhury, 2016b).

The probabilistic well-being equation given above is fully estimated by the underlying circular causation relations of the $\{\mathbf{x}(\theta)\}$ –vector at all points of the HH(θ) trajectory of asset-valuation and rate-setting over knowledge, space and time dimensions. Besides, each point like h($\bullet$) has the microscopic structure. These issues of substantive evaluation are not found in the concept of *shari'ah*-compliance. Hence, *shari'ah*-compliance method does not yield an authentic methodology of selection of valuation rules of sales, contract and financing, or anything like the Tawhidi socio-scientific worldview.

The portfolio financing model in the light of Tawhidi methodology
According to Tawhidi methodology, the aforementioned three areas of insurances for rate-setting are interactively combined together in terms of their various composite variables. The area of *shari'ah*-compliance does not treat this aspect of the problem of rate-setting as is the case of Tawhidi methodology of organic unity of knowledge. Independent 'aqd financing contracts of *shari'ah*-compliance cannot construct an interdependent portfolio model of interactive financial instruments. Therefore, Islamic financing under *shari'ah*-compliance approach can at best rest on mainstream type modelling. This is equally the permanent feature of both mainstream financial portfolio theory and of present days' formulations in Islamic finance[7].

Islamic input-output portfolio theory under Tawhidi circular causality of unity of knowledge
Tawhidi version of Islamic financial portfolio model is of the interdependent and circular causation type. We set up the interaction table between securities of the portfolio as follows: the imminent portfolio model with θ-embedding and inter-variable circular causation relations is an adapted form of the input-output model, particularly adopted to interdependent portfolio security-specific inter-causal relations. We show below that the input-output tabular expression results in a form of evaluation of the well-being function, subject to the system of circular causation relations between the critical variables of the input-output model of the inter-causality related portfolio.

Input-output adaptation of the Islamic financing portfolio model
Let X_i^k denote the total investible fund in ith Islamic security (instrument) in the presence of k-contingencies.

Let x_{ij}^k denote the inter-security (inter-instrument) flow of funds between (i,j) securities (instruments) from the total investible fund with k-contingencies. Such inter-variable flows uphold their explanation in terms of the inherent θ-embedding. Such inter-flows of funds are contrary to 'aqd-based financing of *shari'ah*-compliance. The presence of contingencies makes all fund-flows to be probabilistic in nature. This state in turn conveys the continuously inherent property of interaction, integration and evolutionary learning, which is an essential character of the Tawhidi well-being function as defined (maslaha).

Let x_i^k denote the residual if any from the outlay of funds X_i^k after all inter-security (inter-instrument) distributions have been made under the occurrence of k contingencies.

$\text{Prob}(x_{ij},x_i)^k$ denotes joint probabilities of occurrence of (x_{ij},x_i) at kth contingency. It occupies the following conditional form: $\text{Prob}(x_{ij},x_i)^k = \text{Prob}(x_j \,|\, x_{ij})^k$. $\text{Prob}(x_{ij}^k)$ and its further breakdown into more composite conditional probabilities between the variables as shown (Hogg and Craig, 1965).

Each of the variables and probabilities is induced by θ-value (not shown), which carries the entire methodology of unity of knowledge derived from the Tawhidi epistemic roots and into the construction and evaluation of the expected well-being function, subject to its circular causation relations between the variables. Enumeration of variables is by, $i,j = 1,2,\ldots n$; contingencies are enumerated by $k = 1,2,\ldots,m$:

$$
\begin{array}{cccccc}
 & X_1^k & X_2^k\ldots & X_n^k & \text{residual x} \\
X_1^k & x_{11}^k & x_{12}^k\ldots & x_{1n}^k & x_1^k \\
X_2^k & x_{21}^k & x_{22}^k\ldots & x_{2n}^k & x_2^k \\
. & . & . & . & . \\
. & . & . & . & . \\
X_n^k & x_{n1}^k & x_{n2}^k\ldots & x_{nn}^k & x_n^k
\end{array}
\tag{7}
$$

We can derive the system of equations arising from the probabilistic form of entries in the input-output table:

$$
X_i^k = \Sigma_j x_{ij}^k \cdot \text{Prob}\left(x_{ij}^k\right) + x_i^k \cdot \text{Prob}\left(x_i^k\right).
\tag{8}
$$

The probabilities are conditional ones; and the (X_i^k, x_{ij}^k, x_i^k) appear in their expected forms.

By the method of input-output modeling, we transform the above table into its probabilistic coefficient form induced by θ-value (not shown).

That is:

$$
a_{ij}^k = x_{ij}^k / X_j^k
\tag{9}
$$

Thereby:

$$
\left[X_i^k = \Sigma_j \left(a_{ij} X_j\right)^k \cdot \text{Prob}\left(x_{ij}^k\right) + x_i^k \cdot \text{Prob}\left(x_{ij}^k\right)\right] \approx \Sigma_j \left(a_{ij} X_j\right)^k \cdot \text{Prob}\left(x_{ij}^k\right),
\tag{10}
$$

This equation reduces to, $X_i^k = \Sigma_j b_{ij}^k \cdot X_j^k$; where, $b_{ij}^k = \left[a_{ij}/(1 - a_{ii})\right]^k$.
$\tag{11}$

The totality of these equations for $i = 1,2,\ldots n$ represents the circular causation relations between the variables.

The well-being objective criterion is denoted by:

$W(\theta) = W(\mathbf{X(\theta)})$ in the conceptual abstraction stage of its explanation; $\mathbf{X}(\theta)$
$= \{X_1, X_2,\ldots, X_n\}[\theta]$.

The conceptual form of W(.) then takes the measurable quantitative form by the implicit function theorem of the continuous differentiable form:

$$\theta = F(\mathbf{X}(\theta)). \tag{12}$$

$\{\theta\}$-statistical values are computed corresponding to the $\mathbf{X}(\theta)$-values in accordance with the highest ranked ordinal value being assigned to the lowest positive value of $x_i^k(\theta)$. Rest of the θ-values are thereby prorated[8]. Such a ranking of θ-values follows the following explanation.

Islamic instrument-specific savings, $x_i^k \to 0$, as mobilization of savings increase as real investment increases; debt financing is ruled out in a consequently transforming MFRE inter-relationship. Residual savings as bank-savings decline. All residual savings other than these ones are already recycled into the real economy through foreign trade financing and resource mobilization.

The *shari'ah*-compliance approach being based on short term 'aqd-rulings and not having sound formulation of intertemporal rates, as in ijara-type financing, was shown above to be incapable of establishing any such approach to apply to a mix of various kinds of premiums. Consequently, no portfolio theory of organically unified Islamic financing instruments (securities) can be expected to be derived. As well, no behavioral expected preferences of propensities to risk and return in such a case of Islamic capital market transformation can be explained by *shari'ah*-compliance.

Islamic finance academics have thus submitted themselves to the usual mainstream theory of risk and return, which copies capital asset pricing model (CAPM). Yet, such an academic submission will now be shown to be incorrect for explaining investor behavior in an organically interdependent Islamic securities market.

Risk and return diversification theory in Tawhidi perspective of Unity of knowledge

The Taylor expansion of an analytic function that was explained in Footnote 3 depended upon the mainstream theory of diminishing marginal utility and maximization behavior that leads to a non-learning world characterized by the end of novelty in learning (Shackle, 1972; Jeans, 1970). None of these assumptions co-exists with the Tawhidi analytical methodology in respect to its precepts of interaction, integration and evolutionary learning. The quadratic term that is negatively explained by the second-order derivative is the result of the aforementioned neoclassical postulates. This same coefficient is not negative according to the Tawhidi evolutionary learning methodology. Thereby, the non-Cartesian domain in the learning flux (i.e. not on Cartesian surface, hence in a topological space) represents an amorphous body of complementary relational forms driven by unity of knowledge defining the continuous flood of evolutionary tuples.

We write for this analytical property:

$$(d/d\theta)\left[\cup^{\text{interaction}}\cap^{\text{integration}}\{E(\mathbf{X}(\theta)), \text{Cov}(\mathbf{X}(\theta)), t(\theta)\}\right] > 0. \tag{13}$$

Every point on the amorphous evolutionary domain is like the evolutionary point denoted earlier by $h(\theta)$ in Figure 2, floating in knowledge, space and time dimensions.

Now, the differentiating explanation between the Tawhidi attitude to risk and return and the conventional finance theory is this: the heightened propensity to assume risk to earn higher financial return in Tawhidi methodological worldview implies that, interest rate ("i") is not the substitution price of rates of return, "r" (i.e. financial substitution defined by i/r is inadmissible). This property would incite investors with risk-aversion behavior to allocate wealth into interest bearing risk-free (or constant risk) portfolio.

There is also the explanation in respect to the Tawhidi explained risk-return behavior of the type explained here. This involves portfolio diversification in both systematic and idiosyncratic risks. The Qur'an and sunnah promote the market-orientation of the economy. Islamic banks ought to generate their rates of return from market exchange by mobilizing savings as financial resources into blissful real resources. This economic function causes production diversification and increased shareholding.

Thereby:

(total risk capital(market risk)/(production diversification x number of shareholders, sh_s)

$$= \text{Var}(\mathbf{X}(\theta)) \Big/ \Big[\prod_s T_s(q_s\,^\alpha(\mathbf{X}(\theta)) \times q_s\,^\alpha(\mathbf{X}(\theta)) \times \text{sh}_s(\theta) \Big]. \tag{14}$$

This formula gives the unit risk of a venture. The compounded factors of unit risk signify the degree of effective risk-diversification possible. In this formula of unit risk, the technological factor denoted by $T_s(q_s\,^\alpha(\mathbf{X}(\theta))$ can be included. Thereby, even as risk increases in the amorphous flood of $h(\theta)$-like events, it is the effective risk-diversification, as defined above, that influences the behavior of the investor in respect to the complementary propensity toward risk and return.

As the number of shareholders expands to take account of stakeholders (sh), the risk base ($\text{Var}(\mathbf{X}(\theta))$ and the diversified products $\prod_s q_s^{\alpha s}$ expand over social and spiritual goods (Zohar and Marshall, 2004), then the unit cost of risk reduces by holding up ethical transformation of the economy. This consequence shows up by complementarities between the risk, return, production, financing, stake holding and rates of return contrary to interest rate etc. in the well-being objective criterion. The inter-variable complementarities explained in and by the quantitative form of the well-being function and the circular causation relations, respectively, put into consilience the Tawhidi episteme of unity of knowledge (Wilson, 1998) in the financial world-system, economy and society. All these conscious financial behaviors yield results of substantive nature and are quite the contrary to mainstream financial economics that Islamic academics and practitioners have imitated.

Pervasive problem of non-sustainability and distortionary allocation of Capital in the long run in *shari'ah*-compliance

Many other Islamic financing rulings under the *shari'ah*-compliance approach are based on fiqh (jurisprudence) and fatawa (theological ruling) that arise from a closed doctrinaire and institutions (e.g. AAOIFI, OIC Fiqh Council). Yet, in respect to analytical argument, such rulings can be grossly flawed. We consider here first, the ruling given in favor of what is termed as "profit equalization". The ruling is to compensate for lower performance of rates of profits in unprofitable enterprises by distributing a portion from the reserve fund that would bring up the enterprise profit rate to a level of acceptable rate of profitability. It is felt that such an enhanced rate would then establish the up-front performance semblance of enterprises and investors and thus show them to be more competitive and profitable.

Profit equalization
The economic argument against profit equalization method is that such a financing is like a mark-up of murabaha that has no real asset backing for determining this rate, except that the mark-up is based on a mutually agreed upon subjective probability of occurrence of contingencies associated with a low performance of hire-purchase of an asset.

In the profit equalization plan set on a reserve fund, the guarantee of a desired rate is equivalent to the unproductive nature of interest rate on idle bank savings for the time that it is held up at the bank. If this practice is allowed to continue, then the portfolio of contributors and their amount of contributions into the profit equalization fund will distort the legitimacy of individual productive claims on the basis of earned profit rates. A distortionary effect of redistribution of available resources ensues (Nozick, 1974).

The way to escape such distortionary consequences would be to use the inter-security (instrument) input–output portfolio relationship that was explained earlier. Thereby, market-determined rates can be generated to replace undue and exogenously determined profit mark-up. Finally, in the macroeconomic sense, the extra quantity of money supplied via unproductive means shows that the rate of growth of money supply is higher than the rate of growth of productivity denoted by the rate of profit. The excess supply of money now becomes a precursor to expected inflationary pressure. Likewise, we find in the precautionary demand for money an interest portion of the demand is upheld to fill up the gap in potential savings to meet economic adversity.

Tawarruq financing

A worse type of speculative pricing is found with tawarruq, whereby the Islamic financial institution buys an asset from a dealer at an agreed-upon deferred price that the financial firm will pay to the dealer on maturity of the contract. The financial institution then sells the asset to another buyer at a cash price to raise cash value from sale. Thereby, the difference between the deferred price and cash value is clearly a speculative profit differential in favor of the financial enterprise at the detriment of the first seller, who could otherwise have sold the items directly to the buyer in the absence of a mark-up without the loading of profit margin and a non-market determined ijara rate that can be interpreted as riba. Such was the basis of interest in the theory of roundaboutness of production instead of direct dealing, as explained by the Austrian School of Economics (von-Bawerk, 1890).

The sukuk problem of *shari'ah*-compliance

Consider the following financing of a trade in material: Client B needs material that A has. The SPV purchases the material from A on deferred payment basis and supplies it to B. If B cannot pay, then SPV raises the returns of the sale to B from sukuk holders or holders of bonds sold by the SPV to raise funds for purchase of materials required by partners. At the end of the maturity date of the sukuk, SPV will participate with A and B on the returns from the operations of the sukuk. This example gives rise to multiple trade. Yet, what is the problem with it? The multiple sukuk trade is based on debt instruments in which the deferred financing will involve risk and uncertainty to poise the partners to financial adversity against the fixity to pay the deferred price of the material. The reduction of unit risk for the gains to partners is ignored, in the way this principle of risk-diversification was explained earlier.

Sukuk and takaful relationship in interest-free financing situation

To avoid such episodes, financing and trade both ought to be based on debt-free transactions even though on a participatory basis. Debt-free instruments will arise from cash payments on re-takaful basis at SPV to pay for the needed merchandise to A received from B. The principal is thus paid off. On the matter of profit-sharing from the real sector operation of the sukuk fund, complementary profit-sharing participation can be undertaken.

Re-takaful when combined with other participating financing partners can be an effective avenue toward lowering of unit risk, on the basis of which, investors develop

propensity to undertake risk and return with positive complementarities between them. We now have a 3×3 input-output matrix in inter-instrument cash-flows for trade in goods and services. In this arrangement, risk-diversification, production-diversification and increase in number of stakeholders are realized together.

This is an example of sukuk with murabaha contract. A rent with mark-up can be divided into a market-actualized profit margin at every point of time. The residual mark-up on rent can be seen as an investment to generate a profit-share between the rentier and the financing company. The resulting effect of such financing is felt in its contribution to well-being objective via disaggregation of sukuk at the small enterprise level. An example is the sukuk financing of low-cost housing project as social capital.

Conclusion

The *shari'ah*-compliance literature comprises a cluttered body of complicated reading. Its heavy reliance on Arabic nomenclature makes unpleasant vocabulary and roundabout explanation. The study of *Shari'ah* Advisory Council report unfolds unnecessary matters of simplicity that common sense can readily establish in the well-being perspective of Islamic financing, sale and ownership.

The origin of *shari'ah*-compliance is based on institutional fatawas (religious ruling) and weakly narrated ahadith (prophetic sayings), never heard of. On the other hand, the indispensable altar of the Tawhidi methodological episteme of unity of knowledge and the details of the world system is nowhere to be found in *shari'ah*-compliance approach. The experts of *shari'ah*-compliance field have not acquired this know-how. *Shari'ah*-compliance is not intellectually ready to deliberate on the epistemological and formal perspectives as of Tawhidi methodological worldview.

The Tawhidi methodological worldview of consilience meaning monotheistic unity of knowledge is premised on simple but rich epistemological grounds. The Tawhidi methodology is derived from the rule of organic relational unity of being and becoming between all good things of life that the Qur'an and the sunnah have not forbidden or have recommended.

Within this derivation and setting up of the Tawhidi law of unity of knowledge in respect to the generality and details of all matters, two approaches of ethico-economic choice are used. First, there is the algorithmic approach to find out inter-variable complementarities as unity of relations between the good things and actions as the Qur'an and the sunnah recommend or do not forbid. Second, the algorithmic results are examined by discourse among participating agents to authenticate or revise the algorithmic results on inter-variable circular causation relations by inter-causal complementarities between the selected variables.

Thus, the Tawhidi methodology of legitimacy of ethico-economic choices would negate some of the rules derived by *shari'ah*-compliance. The rest of the rules will be subject to Tawhidi investigation, while avoiding the unnecessary simplicities as otherwise manifest by verbosity of rulings by *shari'ah*-compliance.

In conclusion, we note the following specific case that establishes our criticism here. Consider the following case. *Shari'ah* Advisory Council writes on the interest of the insured in taking out takaful (insurance): "[. . .]. If a person applied for a life insurance policy or a family takaful plan for another person, and nominated himself as the beneficiary, his application will not be approved because there is no insurable interest." This is an inaccurate statement of a simple rule that is automatically valid in the event of a contingency happening. It is a simple matter, hardly requiring substantive *shari'ah*-compliance attention, to know that, there exists conditional probability of survival and

usufruct in the event of death of the insured. For on the death of the second party, the first party inherits the insurance benefits to perform the functions of the originally insured. The same is true of multiple partners upon survival. Usufruct rules of caring applies here at any point during the life time of individual survival and participatory business. The same takaful rule would exist in the case of all different kinds of contingencies. Indeed, a participatory form of insurance is always the rule of the partnership security.

In the case of the Tawhidi worldview of unity of knowledge, the contingent insurance based on partnership is a recommended matter. Its functioning shows the organic unity of relations that exists in the insurance spirit for sustaining well-being in participated partnership. The acceptability to insurance of the resultant type does not require unnecessary legitimation. In fact, the contingency interest in takaful is essentially legitimate under the Tawhidi principle of epistemic unity of knowledge as complementarity of inter-causal variables of the organically unified well-being.

All debt instruments are unnecessary and are contrary to the spirit of avoiding shadow rates of interest in deferred financial transactions. In this paper, it was explained how the Tawhidi methodological objective of well-being, which is evaluated subject to circular causation, does away with debt instrument financing in an interactively integrated dynamic version of the key debt-retiring MFRE-model.

On a generalized basis of rejecting this central nature of pricing and valuation by deferment in *shari'ah*-compliance approach and its replacement by the Tawhidi methodological worldview of unity of knowledge, we formalize replacement of all debt instruments that are presently being legitimated under *shari'ah*-compliance. This would also result in formalization of rate-setting formulas in valuation of contingencies.

We explain the Tawhidi opposite case of valuation in Figure 3. The practice of 'aqd contract under *shari'ah*-compliance is replaced by the inter-relational model of well-being that explains the organically unified inter-variable causality over the knowledge, space and time dimensions. It applies to all forms of valuations. The last words are that Tawhid is the ultimate ontological law of "everything". The maqasid as-*shari'ah* is a gateway to understand the ontological law of Tawhid and all world systems, though it has not yet proved itself in this capacity (Choudhury, 2015a, op cit). The *shari'ah*-compliance area is a distortion of the actual spirit of Tawhid and maqasid as-*shari'ah*.

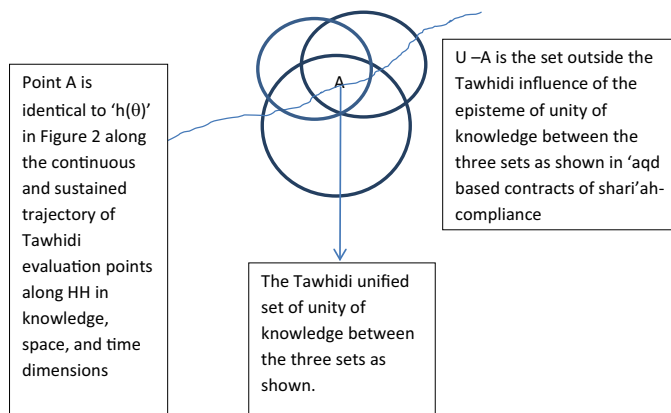Point A is identical to 'h(θ)' in Figure 2 along the continuous and sustained trajectory of Tawhidi evaluation points along HH in knowledge, space, and time dimensions

A

U −A is the set outside the Tawhidi influence of the episteme of unity of knowledge between the three sets as shown in 'aqd based contracts of shari'ah-compliance

The Tawhidi unified set of unity of knowledge between the three sets as shown.

Figure 3.
Tawhidi evaluation worldview of sustainability contrary to 'aqd-based *shari'ah*-compliance

Notes

1. Qur'an (10:66): "Unquestionably, to Allah belongs whoever is in the heavens and whoever is on the earth. And those who invoke other than Allah do not [actually] follow [His] "partners." They follow not except assumption, and they are not but falsifying".

2. Buchman, D. writes (p. xiii): "It is not enough to abstract God from the world in the manner of the theologians; one must also perceive His presence. The Qur'an often refers to its teachings about God by employing the words mathal and mithal, 'similitude' and 'likeness', so it is not surprising to see that al-Ghazali pays a good deal of attention to explaining the true Qur'anic sense of these words. Certainly, he is striving, among other things, to show that the 'symbolism' of the Qur'an should not be thought of primarily as literary imagery, as similes and metaphors. On the contrary, God employs the language that He employs to clarify the actual nature of reality. At issue are the structure of the cosmos and the human soul."

   Bruteau (p. 179) writes: "If you can see the God you love present in, even as, this world, then feel that union and rejoice in that. And be active in it, contribute to it, participate in the building, in the artwork, in the healing, in the understanding. This is where Reality is. You yourself are both a member of the Finite and a member of the Infinite [. . .]."

3. An analytical function defined by its differentiability and continuity properties can be expanded in the small neighbourhood of $h(\bullet)$ by Taylor's series as follows (Jeans, 1970): Let $f(\mathbf{x}(\theta))$ denote a continuously differentiable function (any kind of financial benefits denoting asset value) in the knowledge, space, and time dimensions for a specific point of time $t(\theta)$, and thus at $(\theta, \mathbf{x}(\theta), t(\theta))$. Taylor's series in the neighbourhood $h(\bullet)$ around the expected value (mean), $E(\mathbf{x}(\theta))$, is written as:

$$E(f(\mathbf{x}(\theta))) = f(E(\mathbf{x}(\theta))) = +[(\mathbf{x}(\theta) - E(\mathbf{x}(\theta)))] * f'(\mathbf{x}(\theta))$$
$$+ [(\mathbf{x}(\theta) - E(\mathbf{x}(\theta)))]^2 * f''(\mathbf{x}(\theta)) + \ldots + [(\mathbf{x}(\theta) - E(\mathbf{x}(\theta)))]^n * f^n(\mathbf{x}(\theta))$$
$$+ .. \infty \text{ terms.}$$

   for, $\text{plim}\{\theta\} = \theta \in (\Omega, S)$.

   (Ω, S) denotes the primal ontology of Tawhid; and the occurrence of events being at each point of time. Thus, Taylor's expansion exists everywhere within $h(\bullet)$ and across $HH(\theta)$.

   Because $\mathbf{x}(\theta)$ denotes a vector/matrix etc. of inter-causal variables, any positive monotonic transformation of this vector in functional form is equally acceptable. We chose this functional form as the wellbeing function, $W(\theta, \mathbf{x}(\theta))$, as a functional to evaluate the "as is" and the "as it ought to be" states of inter-variable complementarities. Such complementary "pairing" is the evidential sign of Tawhidi unity of knowledge as organism. With the resulting statistical simplifications into a quadratic form we can write the above expression as:

$$W(\theta, \mathbf{x}(\theta), T) = \int_0^T \int_0^{\mathbf{x}(\theta)} \int_0^\theta a_t(\theta) * [W(E(\mathbf{x}(\theta)) + b_t(\theta) * \text{Var}(\mathbf{x}(\theta))] d\theta \, d\mathbf{x}(\theta) dt,$$

   encompassing the knowledge, space, and time dimensions.

4. Use the Newton-Rhapson method (Kelley, 2003) of calculating iterative roots of 'r' of the terminal-value polynomial within an interval of the 'nearest' point of a simulated value denoted by ε in (0,1). Let the overlapping generation asset valuation polynomial function be given by the terminal-value formula, $TV(.) = -I + \Sigma A_t(1 + r(\theta))^t$. Let I denote investment outlay. $A_t(\theta)$ denotes cumulative asset value over time 't' as valued by the social wellbeing evaluation at each selected point of time. At a simulated 'nearest' rate of return, $\Delta r(\theta) = dr/d\theta = \varepsilon(\theta) \in (0.1)$, after mathematical simplification, the Newton-Rhapson iteration method yields [θ is repressed],

$$\varepsilon = TV/(dTV/d\theta) = [-I + \Sigma A_t(1 + r(\theta))^t]/\Sigma t \cdot A(1 + r(\theta))^{t-1} \cdot (dr/d\theta)]$$
$$= [-I + \Sigma A_t(1 + r(\theta))^t]/\Sigma\{t \cdot A(1 + r(\theta))^{t-1}\} \cdot \varepsilon].$$

Thereby, we can write this equation in the computable form, δ's being functions of (A's, ε, θ).

$\delta_0(\varepsilon) + \Sigma_t\delta_t(\varepsilon)(1 + r)t = 0$. This equation can be solved for 'r' for assigned simulated choices of ε-values in the interval (0,1), given discoursed wellbeing 'θ' values at the 'nearest' points of asset valuation along HH(θ), as in Figure 2.

5. Qur'an (2:268): O you who have believed, spend from the good things which you have earned and from that which We have produced for you from the earth. And do not aim toward the defective therefrom, spending [from that] while you would not take it [yourself] except with closed eyes. And know that Allah is Free of need and Praiseworthy.

6. Qur'an (49:10): "The believers are but brothers, so make reconciliation between your brothers and fear Allah that you may receive mercy."

7. An example is the capital asset pricing model stated as follows: An investor's total outlaid fund is divided in a diversified stock market between risky market portfolio of securities and risk-free securities. The market portfolio is always risky notwithstanding whatever is the degree of diversification of the systemic risky market portfolio. We denote the total rate of return (r) from investor's investment in such a divided portfolio market in terms of market rate of return, r_m (systemic risk, e.g. equity rate) and r_f (risk-free portfolio, e.g. interest rate). The CAPM formula of the diversified asset rate of return is then expressed by the equation, $r = r_f + \beta(r_m\text{-}r_f)$.

Today, every Islamic finance academic misconstrues this formula for Islamic financial engineering. For consider the cultural ingredient of the non-Islamic investor in the absence of social consciousness as would arise otherwise from the Islamic transformation premised on the Qur'an and the sunnah (Ω,S). This is that, interest is forbidden. Yet interest is permanent in CAPM by its risk-free component. On the other hand, investor's dissonance between interest-free interest and risky market yields will not dissuade the investor from buying government bonds, whose yield is a shadow rate of interest and a way of financing unnecessary government sponsored public projects.

The incorrectness of CAPM was pointed out in the literature by the presence of outliers removed away from the CAPM straight line fit (β-fit). This shows the unreliability of 'β' for predictability using the CAPM. CAPM characterizes the culture of non-Islamic investment behaviour. It can be replaced only by a new brand of Islamic investment behavioural model. This is explained here by the consequential Islamic financial outlook on risk and return. The inter-variable embedding by induction of θ-values now becomes indispensable.

8. Lowest non-zero (x_i^k)*-value is assigned an ordinal statistical value of $\theta = 10$ (say; or any other highest ranked integer). Remaining of the $\{x_i^k\}$-values assume their prorated values by the formula, $(x_i^k/x_j^k*).10$. The generated statistical θ-values side by side of the corresponding $X_i^k(\theta)$, now estimate the equation, $\theta = F(\mathbf{X}(\theta))$. Estimation is followed by simulation.

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Appendix

Islamic financial structure of the firm in a mix of debt, equity and tax

The two papers, namely, by Dzolkarnaini and Minhat (2016) and Singh and Sheng (2012), unpublished though, could not answer the question of irrelevance of the Modigliani and Miller theorem in terms of Islamic economics and finance. The authors held up their unquestioned belief on the acceptability of debt in Islamic financing. This paper argues that debt is the grand mistake that so-called Islamic economists and *shari'ah*-compliance have continued to legitimize. For, to make the mudarabah, musharakah (MM) theorem regarding the optimal debt-equity ratio as the basis of irrelevance of debt and equity in the optimal financing structure of a corporation requires fundamentally the use of the neoclassical assumptions of economic rationality. This comprises the postulates of full information, perfect capital market, zero transaction cost and the existence of resource allocation conditions to establish optimal valuation of shareholders' wealth.

These starting axiomatic bases of neoclassicism destroy the relevance of the Islamic venture capital without debt financing. The foundational epistemic axiom of Islamic methodology in generality and in particularity of corporate finance is the precept of Tawhidi unity of knowledge. It is explained by the Qur'an in respect to organic inter-relations between the variables representing the good things and the opposing relationships between the un-recommended things and between the good and the bad ones. This kind of confirmation of the nature of inter-relations between choices is the starting point of the evolutionary learning methodology that emanates across learning processes in the Tawhidi methodological worldview.

According to *shari'ah*-compliance on the question of debt and equity, debt is considered to be admissible for a firm. Thereby, the MM theorem of debt and equity choice that optimizes the shareholder's wealth valuation is considered to be valid. Yet, the existence of debt gives rise to interest paid on debt. The debt-cancelling interest payment in turn can be written off as tax-deduction. On the other hand, the higher the equity participation, thereby, the lower is the debt for financing shareholder's optimal wealth, the higher is expected to be the taxation on dividends arising from equity investment. At the end, the mix of debt-equity structure of the corporation establishes a trade-off between debt and equity in such a manner that debt can never be avoided. Thereby, interest rate on debt cannot be avoided.

In such, Modigliani and Miller's treatment of the theory of debt-equity composition in the optimal structure of corporation capital investment there is no process of evolutionary learning relating to the phasing out of interest, as this would manifest in Tawhidi methodology. Debt and taxation must exist perpetually in the MM theorem and its imitation in Islamic finance. In fact, the Islamic finance field is now at its juncture of worsening thought and application regarding the moral and ethical objectivity of the well-being criterion of Tawhidi unity of knowledge. Such remiss holds back the understanding of the debt problem in Islamic socioeconomic transformation.

Singh and Sheng (op cit) rightly analyzed that in the final goal of the Islamic financial order regarding converting all financial capital into equity, the optimal debt/equity (in this order) ratio will be zero. Now with zero rate of interest and all capital invested in equity (thus interest rate replaced by rate of return), the final point of allocation of capital shows a static corner point without learning (Figure A1). The debt/equity line is then the whole of the horizontal axis. This causes a contradiction between the neoclassical economic assumptions of optimality and steady-state equilibrium when the learning point is caused by the Tawhidi methodological worldview all along the horizontal axis. Such an evolutionary learning phenomenon cannot be shown along the horizontal line in neoclassical economics and its presence in Islamic economics and finance (Figure A1).

The Tawhidi methodological functioning of resource allocation by the well-being objective criterion (also pointed out by Singh and Sheng for a social transformation into the Islamic capital market) provides the following formalism between the variables: debt (D), equity (E), interest rate (i), taxes (T), shareholder's valuation of wealth (V), dividends Dv and the learning parameter along the trajectory of Islamic transformation (θ).

By our earlier definition of the well-being function:

$$W(\theta) = W(\Delta_\theta(E/D), \Delta_\theta(Dv/i), \Delta_\theta(E/T), \Delta_\theta(Dv/V), t)[\theta], \tag{A1}$$

to evaluate the degree of positive complementarities between the variables as shown here.

That is:

$$\mathbf{X}(\theta) = \{\Delta\theta(E/D) \uparrow (\downarrow) \leftrightarrow \Delta_\theta(Dv/i) \uparrow (\downarrow) \leftrightarrow \Delta_\theta(E/T) \uparrow (\downarrow) \leftrightarrow \Delta_\theta(Dv/V) \uparrow (\downarrow)\}; \tag{A2}$$

over time. $\mathbf{X}(\theta)$ is the vector of variables.

This string of relations explains circular causation relations between the variables in terms of the actual "as is" (estimation) followed by "as it ought to be" (simulation) states of inter-variable relations. By doing so, there is an algorithmic reconstruction of the coefficients in the well-being and the circular causation model system toward transforming into "as it ought to be" states by inter-variable strong complementarities. Now the quantitative expression for well-being used for empirical valuation is:

$$\theta = F(X(\theta)). \tag{A3}$$

All relations are in non-linear form, by virtue of the fact that the evaluated coefficients (estimated followed by simulated) are continuously changeable by choice and are, thereby, dynamic in form. The decreasing case shown by ($\downarrow$) is the mainstream one. This state of valuation does not reflect the Tawhidi episteme concerning the knowledge-induced variables.

In this case, the MM theorem replaces $\{\theta\}$ by $\{t\}$. No predictable movements of the signs of the coefficients can establish the inter-variable circular causation relations inherent in the series of equations arising from equations (A2) and (A3). Therefore, policy inferences cannot be formed, as otherwise would be required for transformation into the true nature of Islamic economy. In this case, the pervasively positive complementarities between the variables in the "as it ought to be" simulated scenario, marks the inferences concerning true Islamic transformation.
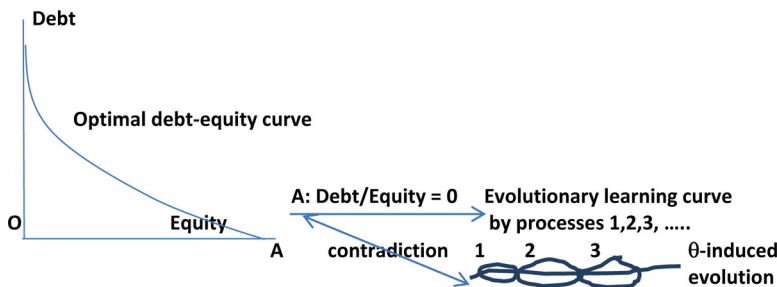

Figure A1.
Tawhidi evolutionary
learning phenomenon
versus MM theorem
of debt-equity
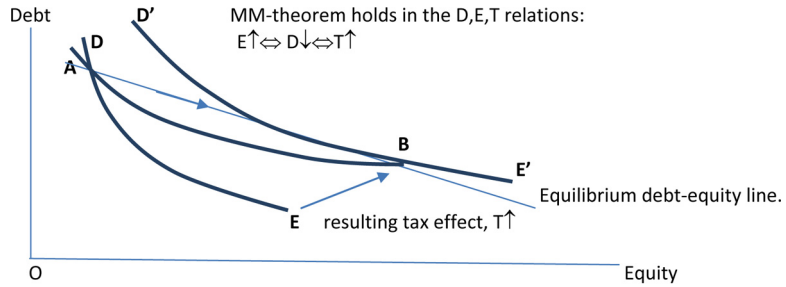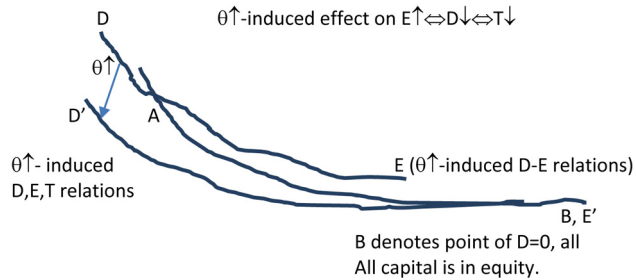optimality of Capital
structure

Figure A2.
θ-induced Tawhidi versus MM theorem relating to debt, equity and tax relations in the Capital structure

For instance, in a transforming Islamic economy of the life-fulfillment regime of development and sustainability, $\Delta_\theta\ T(\theta)\downarrow$, as $\theta\uparrow$. Figure A2 explains the contrary implications between the Islamic case and the MM theorem connecting the variables mentioned in equation (A2) in mainstream economic theory and in *shari'ah*-compliance approach with debt financing.

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