

Regulation in the Islamic Political Economy: Comparative Perspectives

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ABSTRACT. The much debated topic of economic regulation and deregulation in the perspective of market transformation that is now gripping the global politico-economic climate, is studied with the Islamic focus in it. In the attempt, comparative ideas in this area are taken up, particularly those propounded by Baumol with regard to regulation of firms to generate a semblance of competitive pricing. The Islamic firm is studied in reference to a knowledge-based model of unification as manifested by extensive complementarity among possibilities. Such a model is shown to be the crux of Shari'ah in the Islamic political economy as in the broadest sense of the socio-scientific order, where *process* oriented as opposed to optimal models of equilibrium apply. In reference to such a knowledge-centred epistemological model of Divine Unity (*Tawhid*), it is argued that all kinds of regulation become redundant in the case of the Islamic firm. Such is a firm that complies with Shari 'ah rules in the Islamic political economy. Here the socioeconomic transformation is guided towards realizing ethicized markets. The short-run and long-run cases are studied with regards to the problem of regulation.

I. Introduction

What is the nature of regulation for a modern Islamic political economy in the face of a global market transformation process that is on? The answer to this question is to be sought first from the viewpoint of Islamic Law (Shari'ah) concerning economic regulation and the nature of goods, transactions, instruments and exchange in the market process. Secondly, the question of validity of some of the present day regulatory practices must be investigated. Third, both of the above two objectives are to be examined against a unique meta-theory of systemic unification and its politico-economic consequences. This paper will dwell on these issues. For reasons of introducing the methodology to the unacquainted reader we will start with the third objective first.

Preliminary Matters

Before we set out to examine the substance of this paper we need to premise the analysis and arguments that will follow on the methodology of Islamic political economy. The coverage here is a cursory one, intended principally to explain the following concepts: First we will explain the *concept of knowledge* analytically, as derived from the epistemology of Divine Unity (*Tawhid*). We will then explain its implication on the project of *systemic unification*. Secondly, we will derive from this concept of knowledge the methodology of the *interactive, integrative and evolutionary process* of unification by means of knowledge pervasiveness. This is called the *Shuratic Process*, being derived from the pervasive or systemic nature of *Shura* or consultation in the Qur'an. Third, in relation to the above two, we will bring out the derived natural corollary of the *principle of universal complementarity*. Fourth, the idea of *Islamic political economy* will be shown as an example of the knowledge-centred process of understanding economic and social forces. The concept of social well-being criterion of Islamic political economy in view of its other attributes will be explained.

II. The *Tawhidi* Knowledge Model

II.1 *The Concept of Knowledge: Stock and Flow*

Knowledge according to Qur'an is the essence, understanding and expression of Divine Unity in the order of things, for Allah has given a part of His Divine Knowledge as essence to creation. As understanding in such an inhering order, we have the verses of Qur'an that ask all to contemplate on the majestic design of the universe. As an expression, it is unravelled by the thoughtful observation of the Signs of Allah (*Ayat*). Knowledge in its absolute and complete form are the primal attributes of Allah from which flow His Blessed Names (*Asma*). Thus from the outset we do not equate knowledge with pedagogy and learning that is acquired through instrumentation. We treat all knowledge of the latter kind as instruments for realizing the essence of unity in creation that abides in the understanding and reflection of Divine Unity. Epistemological foundations of knowledge in the Qur'an are to be found in all major Islamic thinkers. See for example Sayyid Qutb's and Fakhruddin Razi's theory of knowledge derived from the Qur'an (Mousalli 1990, Noor 1998).

By the Qur'anic treatment of knowledge we also configure the reflective and observational domain of knowledge with respect to the discovering of unity among and within systems. This latter aspect of functional categorization of knowledge is referred to by us as the unification of knowledge. Thus the axiom of Divine Unity resting in *Complete and Absolute Knowledge as Stock* gives rise to flows of knowledge that unravel themselves in the order of things. The process towards understanding this relationship between essence and cognition of the field of Divine Unity is referred to by us as *unification of knowledge*. In what follows we denote the Stock of Knowledge by

the topology Ω . Topology is a mathematical method for dimensionless analysis but capable of explaining complex relations. Flows of knowledge will be denoted by $\{\theta\} \in \Omega$.

Knowledge-Induced Variables and Forms

The singularly pervasive construct of *Ayat* (Signs of Allah) marks the imputation of Allah's *Asma* in reality. Hence the essence of knowledge enters cognitive order. We thereby write a cognitive order by $\{x(\theta)\}$. Furthermore, all complex monotonic transformations of $\{x(\theta)\}$ are also of the same category. The social well-being function is an example here with, $SW = SW(\theta, x(\theta))$, $dSW/d\theta > 0$, $dSW/dx(\theta) > 0$. Hence, $dx(\theta)/d\theta > 0$.

By extending such 'functionals' to vectors of variables and knowledge flows we can write, $SW = SW(\theta, x(\theta))$. Yet the structures of θ and $x(\theta)$ remain complex in a Qur'anic methodology of forming specific patterns of causal interrelationships. Such interrelationships exist within and among the elements of these vectors. We will now explain this phenomenon briefly (Choudhury 1998).

II.2 The Interactive, Integrative and Evolutionary Methodology of Unification of Knowledge

As we have mentioned above, Divine Unity comprising the Stock of Knowledge as defined above, forms the topology Ω . In this, $(\theta, x(\theta)) \in \Omega$. Hence all forms of mathematical unions, complementations and intersection, the same for functionals of these knowledge-induced variables, belong to Ω . We can now define an elementary mapping: $\Omega \rightarrow \theta$. But this emanation of θ for human purpose (*maqasid*) and for balance (*mizan*) is not rationalistically determined. It is regimented by the guidance of the Prophet Muhammad, i.e. Sunnah (S). That is, *Sunnat al-Allah* is explicated through *Sunnat al-Rasul*. We thereby specify the above mapping as, $\Omega \rightarrow_s \theta$.

The knowledge flow so occurring remains either intrinsic, as in the natural order (*khalq*), or it is derived by human action toward explaining real world relations. In either case, there is an intrinsic process involved. This is denoted by J - *ijtihad*. But since J must be in strict accordance with Qur'an and Sunnah, therefore the corresponding mapping is (SIT). The latter domain of search and discovery comprises the knowledge-induced forms, $x(\theta)$. Hence we extend the above mapping by, $\Omega \rightarrow_s \theta \rightarrow_{SIT} x(\theta)$. It is a matter of deeper reflection here to note that (SIT) pervades all systems of life and thought with which the human world interacts. We have thus established an *interactive premise* for deriving knowledge from the *Tawhidi* episteme (stage of *bayyanaah*).

The presence of (SIT) in discourse is the *ijtihadi* process of Shura, now seen as an embryonic and pervasive category, expanding the understanding of Qur'anic and

Sunnatic roots and enabling the discovery of ways and means of application to reality. Such discourses lead to consensus, *ijma*. Hence as interactions in discourse signify the process of knowledge formation from the *Tawhidi* roots, the intersection of a stream of knowledge flows occurring during interactions yield the *ijmatic* consensual value of $\{\theta\}$, and thereby the attainment of the corresponding $x\{\theta\}$. Let such a consensual value or the integrative value arising from interactions be $\{\theta^*\}$, hence $\{x(\theta^*)\}$. Thereby also, $SW^* = SW^*(\theta, x(\theta^*))$ as a 'functional' of the knowledge-induced variables. We have thus established the nature of the interactive and integrative process that emanates from the premise of Divine Unity through the process of unification of knowledge that is inherent in the order of things.

Finally, $\{x(\theta^*)\}$ being knowledge induced, it is a 'functional' of knowledge flows primarily. In other words, the creative order becomes a domain of knowledge alone. It becomes the explaining field of *Ayat*. Hence, a knowledge flow must be capable of evolving into higher springs of knowledge. Likewise, it can dissolve into ignorance as well ('de-knowledge'), and alternate between Truth and Falsehood. The Our'an is clear on this point (see Chapter 95 on Fig: *Tin*). Thus as the Islamic political economy evolves over the long run, it will be rewarded in accordance to its compliance with the knowledge-centred order and will be deprived of its potential by departure from this order. Yet there is no assumption made here of a linear advance along any one path over the long run. Complex and ever changing scenarios can arise. Evolutionary flows of knowledge are also the implication of the Our'anic principle of creative re-origination (*khalqin-jadid*). We can now write the new causally evolving and interrelated knowledge flows and their cognitive variables as, $\Omega \rightarrow_s \theta \rightarrow_{SIT} x(\theta) \rightarrow_{SIT} \theta' \rightarrow_{SIT} x'(\theta') \rightarrow$ etc.

Note here that knowledge must be the medium of transference from $x(\theta)$ to $x'(\theta')$. The medium of integration out of interactions is implied. We have thus established the methodology of interactions, integration and creative evolution in this way. It is a circular causation and continuity model of world-systems as the reference is always to knowledge derived from the *Tawhidi* episteme, carrying with it unification of knowledge within and across an endogenously systemic and interconnected view of reality. Because of this essence of immutable unity and unification in such world-systems, we call the underlying methodology as a meta-theory of reality.

II.3 *Shuratic Process and the Principle of Universal Complementarity*

One complete process: $\Omega \rightarrow_s \theta \rightarrow_{SIT} x(\theta) \rightarrow_{SIT} \theta'$ is referred to as the *Shuratic Process* in the sense of its Qur'anic implications of Divine Unity, unification of knowledge and the process of discourse (*ijtihad*), followed by social consensus (*ijma*) and then creative evolution (*khaliq in-jadid*). These are all the elements of the 'entire' consultative order existing in its pervasive and embryonic essence.

The very nature of interactions leading to integration on the premise of unification of knowledge signifies the critical recognition of two of the principles of Our'anic depiction of creation: diversity and complementarity (reflect on the meaning of 'pairs' mentioned in the Our'an). Within *Shuratic Process* by its universally pervasive nature in the knowledge plane, such principles of diversity and compleanentarity become universal as well. The principle of universal complementarity is thus an explanatory medium of unification of knowledge.

What does an economic 'priority' mean in the case of universal complementarity? Priority means knowledge-induced rules of bringing about desired combinations, that is causal interrelationships among Shari'ah recommended possibilities. We therefore do not refer to alternatives but rather to possibilities that are searched, discovered and evolved by means of desired combinations as realized by knowledge formation in a *Shuratic Process*. In the end, economic regulation is meant to retract a failing Islamic system towards knowledge creation for identifying the complementarities that have been lost due to lack of knowledge production in the systems of life.

The methodology of *Shuratic Process* thus yields and relies upon simulation method. No optimum can occur in such systems, except in the instantaneous case, which is uninteresting when knowledge induction occurs in continuity. That is the nature of knowledge! On the other hand, the same methodology suggests that when knowledge evolution ceases (e.g. end of *ijtihad*), then possibilities also cease and substitution (trade-off) appears. This marks the rise of competing markets with substitutable 'priorities', as opposed to participatory ones. Indeed the Our'anic model of resources is one of abundance for the benefit of creation. Complementarity is thus the opposite concept of marginal substitution (trade-off) of neoclassical economic and its self-constructed technological world.

In the above formalization, the principle of universal complementarity implies the following: For, $dx_1(\theta)/d\theta > 0$, and $dx_2(\theta)/d\theta$, for all $(\theta, x_1(\theta), x_2(\theta))$ simulated in the *Shuratic processual* methodology, the following is true: $dx_1(\theta)/dx_2(\theta) > 0$.

Contrarily, in neoclassical marginal substitution we would have $dx_1(\theta)/dx_2(\theta) < 0$. This would happen despite limited and local complementarity allowed for in neoclassical economics with or without technological change. Without this neoclassical fundamental no utility function, social welfare function, production function relative prices and similar criteria can exist under any circumstances.

The ultimate of *Shuratic Process* understood in terms of its universal pervasiveness and embryonic nature, implies that it is equivalently a process that is derived by knowledge of the terminal event of Fullness of Knowledge as by the Original Episteme of Absoluteness of knowledge. Both of these must then be identical Stock. Hence they are equivalent to each other in the topological sense. Thus by incorporating the total space of reality and hence of time (*dahr*) as well, we have now a well-defined mapping

from a 'supercardinal topology', Ω , 'onto' itself, through the medium of $\{\theta, x(\theta)\} \rightarrow$ formation in continuity and *res extensa* of the *Shuratic Process*. Such a mapping of a mathematically 'complete' topology 'onto' itself through well-defined mappings (Maddox 1970), gives an extended version of the Fixed Point Theorems (Nikaido 1989) -- but now it is a theorem of a 'supercardinal' topology (Ω) 'onto' itself in *Akhira*. Consequently, $\Omega = Akhira$ in the sense of Stock of Knowledge. The implication then is, that points such as $(\theta, x(\theta))$ and their causal interrelations, must exist as knowledge-induced multiple evolutionary equilibria within neighbourhoods of knowledge flows and their emerging cognitive forms. This too is a strong point for the negation of optimality in such a process oriented methodology.

Ethicizing Markets

The concept of ethicizing markets and ethicizing transformation will now be explained. Ethicizing as opposed to optimal state of full-information models is a process of social becoming from lesser to higher ethical levels. In the Islamic political economy markets are ethicized by means of interactions in polity-market preferences that get induced on the consumption, production and distributional sides along with policies by the knowledge forming process, as earlier explained. Goods and instruments are thus formulated under Shari'ah guidance by the inherent medium of learning through interactions. Markets are thereby described by social contracts of such ethical menus of social becoming every time there is an induction created through the interactive, integrative and evolutionary process.

Ethicizing market exchanges are contrary to the characterization of invisible exchanges among atomistic buyers and sellers of Smithian markets. The question here is not that of negating exchange but explaining them by means of visible preference interactions where polity and markets learn in concert with each other and new rules and progresses are attained. The resulting ethicizing transformations create ethicizing markets. In the case of globalism and economic regulation for example, such ethicizing preferences and markets can be seen in the area of ecology and social well-being. It is because of this revealed nature of interactive preferences and the ethical transformation of market exchange as derived in the milieu of knowledge production of the *Shuratic Process*, that market exchange reflects clearly the presence and effects of social contracts (*ahkam ash-Shari'ah*). The market exchanges that occur are also extensively interactive. Thus such markets are seen as being systems of social contracts.

On the other hand, the exchanges of Smith's *laissez faire* world being microscopically invisible, there can be no role of institutions, laws, contracts and ethics in the preference formation. Even when the libertarian school emulated laws and legislations in itself, this was on the footings of utilitarian perspectives, wherein individual preferences were as if laterally aggregated. Even the lofty ideals of human sympathy in Smith's Theory of Moral Sentiments modelled under natural liberty got washed away to oblivion when moral sentiments were absolved by market exchanges of

his Wealth of Nations (Smith 1937, 1966 reprint). The same is true of Hayek's institutions and policy instruments that become operationally ineffective in his neo-liberal theory of market catallaxy (Hayek 1967).

II.4 Islamic Political Economy

Islamic political economy is one of many human systems that is premised on the interactive, integrative and evolutionary processual methodology. Its implication is to analytically develop a causally interrelated system of preferences through the *Tawhidi* epistemology that has been briefly presented above. In it, the preferences of polity and markets integrate through interactions to create an endogenous treatment of policies technology and institutions. The economy now transforms into a socially participatory one and economic activities in it are carried out through agent-specific intersectoral linkages.

Formally, we define the Islamic political economy (IPE) by the following system with embedded interrelationships:

$$\text{IPE} = (f(\theta, x(\theta))),$$

In terms of the nature of Islamic political economy (TPE) we write,

$\text{IPE} = \{f(\theta, x(\theta)), \{\theta\} = U_i \mathbf{I}_{j,k,s} \{\theta_{I_{j,k,s}}\}, \{x(\theta) = U_i \mathbf{I}_{j,k,s} (\theta_{I_{j,k,s}})\}$ given, $\{f(\theta, x(\theta)), \{\theta\} = \geq_i \mathbf{I}_{j,k,s} \{\theta\} \theta \in \Omega\}$, In this expression bracketed variables in $\{.\}$, denote the topological sets of the variables included. i denotes number of interactions; j denotes agents; k denotes systems; s denotes variables in the systems $\mathbf{I}_{j,k,s}$ denotes agent-specific systemic interactions. The equality signs on the right-hand-side of $(.)$ -values denote integration arising from interactions. The pervasiveness of such an interactive, integrative and evolutionary *Shuratic Process* is denoted by i, j, k, s . i denotes the progress of interactions across j, k, s .

\geq_i denotes the interactive preference function established in interactions i across interactive preferences in j, k, s , i.e. $\geq_{I_{j,k,s}}$.

For the Islamic political economy, a can be taken as markets, economy, society and political system, k can be taken as state variables, instrumental variables, and policy variables. These would be policy variables (Choudhury & Malik, 1992), such as *mudarabah* (profit-sharing), *musharakah* (equity-financing), foreign trade financing with *murabaha* (cost-plus pricing), *bay-muajjal* (rentals), interest free financing (elimination of *riba*), Islamic wealth tax called *zakah*, and the avoidance of waste (*israf*). j may denote various agents, such as, economists, social scientists, politicians, Islamically learneds (*ulema*) etc.

Furthermore, by the property of topological spaces within the supercardinal topology of Ω we derive,

$$\{\theta\} = \{U_i \mathbf{I}_{j,k,s} \{\theta_{i,j,k,s}\}\} \text{ and } \{x(\theta)\} = \{U_i \mathbf{I}_{j,k,s} (\theta_{i,j,k,s})\},$$

therefore, $x(\theta) = \{f(U_i \mathbf{I}_{j,k,s} \theta_{i,j,k,s} U_i \mathbf{I}_{j,k,s} (x_{i,j,k,s}, (\theta_{i,j,k,s})))\}$,
for i, j, k, s , as defined above.

The Social Well-Being Function

By means of such a processual outlook of IPE, the objective criteria is given by the social well-being function,

$$SW(\theta, \theta', \theta'', \dots, \theta_n, x(\theta), \dots, x^n(\theta_n)), \text{ with } \{dx(\theta)/d\theta\} > 0, \text{ for all } (\theta, x(\theta))\text{-value.}$$

The optimization methodology is rejected in favour of simulation procedures signifying evolutionary knowledge flows and their knowledge-induced processes of interrelationships among variables, systems, agents etc. Time (*dahr*) itself is a derivative of knowledge and is included with the $x(\theta)$ -values. It is also seen as a complex phenomenon of social action (Choudhury 1995b, Choudhury 1994b, Georgescu-Roegen 1971). The social well-being function of such a complementary type can also be deduced from Imam Shatibi's theory of *Maslaha wal-Istihsan*.

Necessary and Sufficient Conditions of Causality in the Knowledge-Induced Plane

We now state a theorem that will be implied in terms of the cause-effect interrelationships between knowledge flows and their cognitive forms. It is cursorily proven here:

The principle of universal complementarity is both a necessary and sufficient analytical conditions for unification of knowledge derived from Tawhidi Episteme .

To prove this theorem we proceed by commenting on the nature of causality in the above formalization of the knowledge model of unity. That is, we must prove that while $P_1 \rightarrow P_2$ etc., so must $P_2 \rightarrow P_1$ etc. In order to cut down the formalization, we will use Figure 1 to prove the causality of this necessary and sufficient conditions

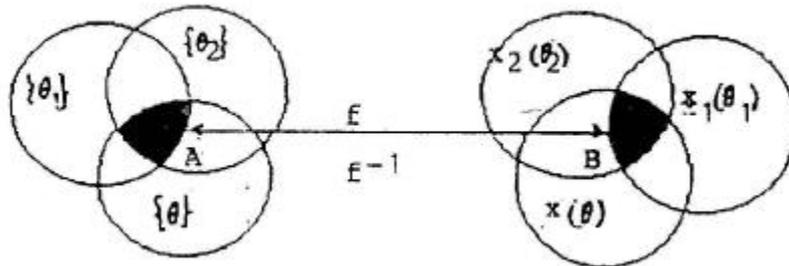


Figure 1: The Necessary and Sufficient Causality in the Knowledge Model of Unity

Let $x_1 \in B$ for $\theta_1 \in A$. thus, $x_1(\theta_1) = f(\theta_1)$. Since 'f' is non-zero, therefore, by the Implicit Function Theorem of Differential Calculus, we can find a mapping say g, such that (Leirhoid 1972): $g(x_1) = g(f(\theta_1))$.

Let $x_2 = g(x_1)$, $x_2 \in B$, for which $\exists \theta_2 \in A$. Thus, $x_2 \rightarrow g(\theta_2)$.

We can generalize the two mappings f and g for $\forall x \in B$, corresponding to $\forall x \in A$, and corresponding to $\forall x \in B$. Hence finally, the whole set B is mapped 'onto' A and conversely. Thereby, the final form of g is f. 'f' exists. Therefore, $f \circ f^{-1} = I$, the identity mapping. 'o' denotes compound mapping. The causality condition is thus established.

Yet because of the incompleteness of $\{\theta\}$ -topology within the Completeness of Ω -supercardinal topology, we will assign a neighbourhood, $Nbd(I\{\theta\})$, around the unity-map, I. We will then write the expression, $f \circ f^{-1} = Nbd(I(\theta))$.

III. Limits of Regulation and Deregulation in the Islamic Political Economy

With the above long but necessary introduction to fundamental methodology for the unacquainted reader, we now come to the study of a specific problem of Islamic political economy. This is the problem of economic regulation and deregulation.

By combining the Qur'an, Sunnah and the practice of *Al-Hisbah Fil-Islam*, the Islamic institution that detects and relates market practices to Shari'ah standards, we obtain the following rule (*ahkam*) on economic regulation: Undue regulation of market prices is not justified or recommended in the Islamic political economy. Only when monopolistic or unfair practices become the cause of price increase, then the principle of social equity demands price regulation to be practiced. In an Islamic political economy characterized by extensive interactions among economic, social and political domains of the type explained above, the complementarity of increases in output and productivity as both knowledge-induced variables of the social well-being function, cannot cause price and income distortions in the resulting participatory social economy. Thereby, undue regulation is unnecessary. Let us explain this point. The nature of Islamic political economy as mentioned above, implies that dynamically evolving basic needs must necessarily prevail by dint of the extensively intersectoral linkages and both product, as well as risk-diversifications caused by such complementarity. On the issue of basic needs, the Qur'an is amply clear. The Qur'anic production and consumption menus are premised on agricultural type models. When the Qur'an mentions diversities it is in this sense. Beside, the mention of earning and enjoying the fruits of life without being prodigal (*israf*) is a criteria of dynamic forms of basic needs. In the case where the rich and poor are shown to enjoy their God-given opportunities (*Rizq*), the Qur'an talks of the two groups connecting with each other in solidarity. Such a participation can happen when basic needs abound and dynamically evolve by the force of the *Shuratic Process*.

A dynamic basic needs approach to development implicates stable and reasonably sustained prices of goods, services and factor inputs. Indeed such was also the argument of the physiocrats, who based their concept of productive labour and output upon agriculture as the only productive sector. The agricultural sector subsequently determines economic value (*net produit*) in all other sectors through forward linkages (Blaug, 1968). Besides now, sustained stable prices of basic needs would reduce monopolistic practices by cause and effect in such an economy. Monopolies cannot prevail in regimes of sustained low and stable prices of goods and services pertaining to the stage of development. On the other hand, a reduction of monopolistic practices in turn leads to such stable prices. Since lower product prices would also mean lower input prices, average costs will decline across sectors on given stages of development. This will lead to the possibility of wider intersectoral linkages as average costs decline. The appearance of basic needs in such a prospect of intersectoral linkages causes all sectors to be productively interlinked through stable prices of factor inputs and intermediate goods/services.

In such regimes where extensive interlinkages come about due to the Shari'ah perspective on dynamic basic needs, there human fulfillment and moderation prevails. This is the idea of low and stable prices along with elastic supply of dynamic basic needs together with progressive knowledge-induced change. Hence undue regulation becomes redundant.

One notes as well, that dynamic basic needs cause moderation and human fulfillment. Social well-being remains high and sustained. Prices are stabilized and are lower than in economies of 'wants'. Output is high at lower factor prices and by the nature of dynamic basic needs. One can include a growing population along with these dynamics. Thereby, real productivity remains high in regimes of stable prices while extensive intersectoral linkages prevail. Therefore, distributive equity and economic efficiency can be realized interactively as complements. This too is a reason why undue regulations cannot arise on the side of factor payments in Islamic firms.

A note is to be made here on the idea of low and stable prices of goods. The comparison here is with respect to the unit cost of producing a dynamic basic needs characterized by moderation and stability on the one hand, and by high and entropic behaviour of cost, prices and scarcity in an economy of 'wants'. Relative prices of basic needs are in turn adversely affected by the adverse selection of 'wants'. Even the introduction of regulation in the latter causes institutional inefficiencies and inequity. This case is well-signified by the differential tax burden on the poor in an economy that is driven by 'wants'. Consequently, with higher prices (imperfect competition), higher factor prices (monopsony), lower output and higher cost of production, the total economic productivity remains lower than in the case of the dynamic basic needs economy.

Consequences of the Islamic political economy with Shari'ah implications mean that classical or neoclassical types of market exchange cannot characterize markets in the Islamic political economy. This negation is precisely due to the fact that the impact of Shari'ah on market determinants that guide transactions with interactive knowledge, must necessarily annul the concept of the invisible Hand Principle in resource allocation exchange and pricing. Shari'ah rules carrying ethical guidance along with prescribed economic instruments arising from an underlying discursive process combining these elements (*Shuratic Process*) of the market order, cause explicit manifestations on two fronts: First, ethical guidance causes endogenous preference formation and its dynamic evolution to occur in the activities of consumption, production and distribution. Such dynamically endogenous preferences generate ethical transformation of markets (Bowles, 1991). This is the result of a knowledge-induction of market exchange based on the application of Shari'ah and the resulting socio-economic instruments affecting such an exchange. Second, the concept of market now loses its meaning as a domain governed by the Invisible Hand Principle. It instead becomes a system of social contracts (Choudhury, 1996). The point was explained earlier.

It is necessary to understand here that the Invisible Hand Principle and the Smithian market exchange are mere scientific creations of atomistic exchangers in an ethically benign order. Consequently, the scientific nicety of such silent and unobservable exchanges have no place or explanatory power in the knowledge-centred processes that characterize visible polity-market interactions of the Islamic political economy. The markets here are continuously induced by such knowledge forming rules (*ahkam*). Hence contracts in them are visible and explanatory ones. Policies matter endogenously, for they are causally interrelated with the process of knowledge induction pertaining to ethicized goods and preferences.

The *Al-Hisbah Fil-Islam* finds its place in the midst of such an endogenous place of institutions in the Islamic political economy along with markets and society. At the end then, we are left to resolve the issue of *Al-Hisbah* in the midst of such manifestations of Islamically ethicized markets. The question then is the following: Is the essence of *Al-Hisbah* a social regulation of markets? Or is its function simply knowledge diffusion through a *Shuratic Process* of the political economic order that enables Islamically ethicized markets to occur (Choudhury, 1994a)? The methodological part of this paper suggests that the goal of *Al-Hisbah* is to induce Islamic conduct in social relations pertaining to markets, so that fairness and equity, appropriateness of goods and policies are maintained on the basis of Shari'ah.

Regulation and *Shuratic* Corrections by Endogenous Policies

Regulation is an external imposition of policy and program to correct a situation from the point of view of polity. Regulatory policies can be political coercion. Take the case of regulatory practice of sustainable development that has ignored the case of

indigenous employment in forest and river related enterprises. Regulations on price control and guide-posts are known to distort resource allocation and generate inefficiencies. They are known to cause long term ineffectiveness on inflation control.

On the other hand, the methodology of *Shuratic Process* suggests that it is moral suasion that changes the preferences of citizens. Other forms of social safeguards and national security are determined in this same knowledge forming process. *AI-Hisbah* thereby, by providing its observations, on fair and unfair practices of the economy to the state is conveying an input to the realization of Shari'ah standards. In this sense, *AI-Hisbah* is part of the embryonic knowledge-centred order that we have characterized by the methodology of *Shuratic Process*. Hence once again, by the tenets of Our'an, Sunnah and *AI-Hisbah* concerning ethical guidance of markets, there appears no place for undue regulation in the Islamic political economy. The question of price control for instance is neither supported by the Qur'an nor *ahadith* (Kamali, 1994). Indeed regulation as being different from corrective changes out of process, and in its sense of coercive actions and distortionary implications, is contrary to the stability and institutional endogeneity gained by the knowledge-based tenets of Islamic political economy.

Price, Income, Productivity and Inflation

Regulation and knowledge-induction will both affect prices, output, factor use and distribution in their own ways. Since input product like product prices, would be low and sustained in the Islamic dynamic basic needs regimes with reduced monopolies, so also monopsony would be reduced as well. Here we refer to the foregoing explanation on the idea of 'low and sustained' prices. Thereby, the earned incomes/output- ratio would stabilize at a lower level as well. However, if output remains high with low and stable prices, incomes can be increased to an extent, but no particular problems of regulation would be called forth on this matter.

From the following relationships it should be clear that total factor productivity would increase with increasing real factor payments in the Islamic political economy over and above that in a 'want' economy. Besides, we show that unless each of the variables mentioned in the total productivity relation is induced by the ethicizing knowledge variable, θ , an increase of total productivity, $u(\theta)$ over that in a 'want' economy, with respect to an increase in permissible socio-economic variables, x_1 , cannot occur. Here we invoke the theorem on the necessary and sufficient conditions of the principle of universal complementarity and unification of knowledge that was given earlier. We formalize these points as follows:

The following symbols are defined:

Y denotes earned income,

r_i denotes payment of i th factor,

x_i denotes quantity of i th factor,

Q denotes output,
 p denotes price of output,
 u denotes total factor productivity

We write,

$$Y = \sum_{i=1}^n r_i x_i \quad (1)$$

$$Y/Q = p \quad (2)$$

$$p \cdot Q = \sum_{i=1}^n r_i x_i \quad (3)$$

$$u = (Q/\sum_{i=1}^n x_i) = [\sum_{i=1}^n r_i x_i / p] \sum_{i=1}^n r_i x_i = \sum_{i=1}^n [(r_i/p) \cdot (x_i/\sum_{i=1}^n x_i)] \quad (4)$$

Thereby, without knowledge-induction we get the expression,

$$du/dx_i = \sum_{i=1}^n (r_i/p) [1/\sum_{i=1}^n x_i - (x_i/\sum_{i=1}^n x_i)] = f(r_i/p; x_i) - (u/\sum_{i=1}^n x_i) \quad (5)$$

Next, with knowledge-induction of the variables, we obtain,

$$u(\theta) = \sum_{i=1}^n (r_i(\theta)/p(\theta)) \cdot (x_i(\theta)/\sum_{i=1}^n x_i) \quad (6)$$

From this we obtain,

$$du/d\theta = (\partial u/\partial r_i) \cdot (dr/d\theta) + (\partial u/\partial p) \cdot (dp/d\theta) + (\partial u/\partial x_i) \cdot (dx/d\theta)$$

$T_1 = [(\partial u/\partial r_i) \cdot (dr/d\theta) + (\partial u/\partial p) \cdot (dp/d\theta)] > 0$, by the theorem on the necessary and sufficient conditions of the principle of universal complementarity in respect to the causal interrelationship between θ and $x(\theta)$. This is also the meaning that if unification of knowledge premised on *Tawhid* functionally effects one Shari'ah determined variable, the same unification force must also similarly affect in degrees all other Shari'ah determined variables. In the present case, the objective social well-being suggests that Shari'ah rules on social and economic security ($p(\theta)$), Fairness ($r_i(\theta)$), moderation ($Y(\theta)$), appropriateness of choices ($Q(\theta)$), and equitable distribution ($r_i(\theta)$) in relation to total productivity ($u(\theta)$), would necessarily promote price stability output formation, factor payments and hence earned incomes. It is therefore the function of the *Shuratic Process* to generate these possibilities.

All these are attained through extensively intersectoral linkages in a participatory social political economy. Thereby, complementarity is attained and the above variables are expected to remain stable in a dynamic basic needs regime of development. Such regimes are found as well in the consumption theory of needs given by Imam Shatibi and in Imam Ghazzali's ethical desire for moderation within means (Karim, undated).

$$\text{Now, } du(\theta)/d\theta = T_1 + \sum_{i=1}^n (r_i(\theta)/p(\theta)) \cdot ((dx_i(\theta)/d\theta) [1/\sum_{i=1}^n x_i(\theta) - x_i/(\sum_{i=1}^n x_i(\theta))^2]).$$

The implication of complementarity in the process of transformation to an Islamic political economy suggests the monotonic positivity of all terms in the $du/d\theta$ relation. Let us look closer into this result.

- (1) It can be shown now that the monotonic positivity suggests that, $r_i \geq \text{const} + p$. This is a plausible result when economic participation returns profit-shares besides wages to productive factors.
- (2) $\sum_{i=1}^n (r_i(\theta)/p(\theta))((dx_i(\theta)/d\theta)[1/\sum_{i=1}^n x_i(\theta) - x_i/(\sum_{i=1}^n x_i(\theta))^2]) > 0$,
implies that, $\sum_{i=1}^n x_j(\theta) > 0$, $i \neq j$, $i, j = 1, 2, \dots, n$.

This is an obvious fact.

Hence in total, $du/d\theta > 0$, primarily because of knowledge-induction of $u(\theta)$. Thus, by the theorem on the necessary and sufficient conditions of causal interrelationships among knowledge-induced variables, we obtain the result:

- (1) If $du(\theta)/d\theta > 0$, it would imply all the variables to be complementary to each other.
- (2) If the variables are knowledge-induced then the methodology of *Shuratic Process* will suggest that they must be complementary to each other. Hence $du/d\theta > 0$.

In evolving regimes of dynamic basic needs the principle of universal complementarity is manifested in intersectorial linkages and participation. This would lead to consistent relations among lower and stable prices and moderate income level. Higher values of factor and total productivity than those in the 'wants' economy will result.

For instance, $(du(\theta)/dx_i(\theta) - du/dx_i) > 0$, for reasons as in the case of i th factor being labour that can be substituted by capital. This has proven to be the rule rather than an exception in the case of neoclassical economic prescriptions, irrespective of technological change. As opposed to this state, this paper has proven that there would exist complementarity between economic efficiency and distributive equity and among productive factors in the Islamic political economy. Such conditions obviously negate any undue need for economic regulations (as explained earlier) in the case of Islamic political economy. Yet they must necessarily exist in a neoclassical economic arrangement.

The Short-Run Questions of Regulations in the Islamic Political Economy

However, even though the above results apply to a knowledge-induced ethicizing transformation of markets in the Islamic political economy, we must now consider the case of the initial stages of such a process of change. Most Muslim countries today find themselves in the grips of economic disorder (SESRTCIC 1995). Inflationary pressure

is a common feature. But inflation is seen to occur not due to domestic input prices, but rather due to import bills on industrial goods and energy. Thus, by our earlier analysis again, we obtain the situation of a non-inflationary situation with domestic prices in the absence of import price effects. Consequently, regulatory policies for domestic prices become redundant. Monetary and fiscal policies also affect inflation in definite ways. The theory behind these is well-known. Such an analysis does now lie directly within the scope of this paper, wherein we are implicating trade-related price distortion against domestic inflationary prices.

Now the initial conditions of knowledge-induced transformation necessitates short-run attention to regulatory practices. The path of economic evolution and socio-political change is knowledge-induced, although this early stage manifests weak complementary interrelationships between knowledge-values (θ) and the state variables ($x(\theta)$). Thereby, the attainment of social well-being remains in an evolutionary stage to move into higher potential as the Islamic induction occurs.

Transformation into higher stages of Islamic becoming is a never-ending process. There is no such concept here as having reached a certain plateau of Islamic optimum. Even if the concept of dynamism is introduced, that must occur through the knowledge-forming *Shuratic Process*. Hence, the evolutionary criterion herein will characterize all developmental regimes. There will subsequently be transformation seen as creative evolution of the Islamic political economy always. This result of the 'entire' *Shuratic Process* is reflected by the evolutionary simulative string: $\Omega \rightarrow (\theta, x(\theta)) \rightarrow \Omega$.

Only in the case of the relationship shown by expression (5), does there exist 'de-knowledge conditions of socio-economic evolution. 'De-knowledge implies the absence of unifying interactions among agents, systems and variables. This is contrary to the pervasively unifying interactions, as discursions proceed in the knowledge-induced *Shuratic Process* characterizing the Islamic political economy. Now, with a percentage increase in x_i , signifying total factor inputs, their real payments decline. Likewise, the total factor elasticity in total productivity measure is negative.

In other words,

$$u = F(r_i, p_i x_i) - \sum_{i=1}^n x_i.$$

This is a condition of neoclassical production function, in which technology just as neoclassical knowledge (learning-by-doing), is exogenous. It is unlike the endogeneity of knowledge and technology in the induced production, consumption and distributional menus of the Islamic political economy (Choudhury, 1997).

Regulation of Firms in Inflationary Regimes

In order to treat regulation in the midst of inflation, we need to discuss this issue in comparative perspectives. Baumol (1996) gives a formula for regulation of firms in the midst of inflationary condition as follows:

$$g_p = g_{INF} - g_u \quad (7)$$

where,

g_p denotes the growth rate of price ceiling.

g_{INF} denotes the growth rate of inflation.

g_u denotes the growth rate of total productivity.

Baumol argues, that by applying price caps as a measure of regulation in inflationary regimes, firms that attain normal productivity gain in the competitive race. Furthermore, such price caps are seen to be near to competitive prices in value. Thus, if prices are allowed to run the full length of near-inflationary limits, the expression (7) implies, that such a price level would include the sum-total of the rate of growth of price ceiling and the rate of growth of a normal productivity level. Baumol argues, that regulated firms would now find incentive to catch up with the growth of price ceiling set by inflation by fully realizing the normal productivity growth rate. Price caps are thus recommended by Baumol in favour of caps on income growth so that productivity growth gets pursued.

To investigate Baumol's regulatory recommendations, we will now disaggregate expression (7) by writing it as follows:

$$g_p = g_{INF.DOM} + g_{INF.IMPORT} - g_u \quad (8)$$

where, $g_{INF.DOM}$ denotes the growth rate of inflationary price level due to increases in the prices of domestic factor inputs. $g_{INF.IMPORT}$ denotes the growth rate of inflationary price level due to increases in import prices.

Now if we express $I_{INF.IMPORT}$ in terms of the other components, Baumol's regulatory pricing policy would suggest that the growth of the other price components must catch up with the growth rate of inflationary import prices while including a growth rate of normal productivity. This is misleading, for import prices are exogenously set and contribute the largest proportion to g_{INF} in member countries of the Organization of Islamic Conferences (OIC), where domestic input prices remain low. Hence, the difference between $g_{INF.IMPORT}$ and other components of the growth of prices, is not adequately bridged by g_u . Otherwise, it would be too demanding to ask for very high values of g to bridge up such a gap, particularly at the initial phases of a knowledge-induced transformation to an Islamically-guided market, as we found to be the case with *Al-Hisbah* (Holland, 1982).

Baumol has also suggested, that price-cap regulatory policy shown by (7), leads to freedom of decision-making as a means of generating g_u . The two implications of such

an observation are as follows: (1) Management may wrongly follow the signals dominated by $g_{INF,IMPORT}$. This will unduly fuel rising inflation and thus defeat the growth of u . (2) $g_{INF,IMPORT}$ must be narrowed down to apply to the basket of basic needs only. But this is not the reality during the early stages of knowledge transformation to an Islamically-guided market.

Furthermore, Baumol considers monopolistic practices as the sole kind of distortion of market competition. He does not consider oligopolies, or what I will term contractual firms in the context of markets as systems of social contracts, which I referred to earlier. In this context, Baumol's and a similar concept of contested oligopolistic markets among rival firms as competitive agents (Martin, 1988), are changed in the Islamic political economy to contracts among cooperative firms. Such firms may compete only on the basis of production menus of knowledge-induced transformation. Since knowledge-induction of Islamically ethicized markets carrying with them endogenous preference formation, is a matter of guidance and consequential market exchange (*Al-Hisbah*), therefore, such a market transformation is the result of extensive interactions, consensus or integration, and dynamic evolution. These occur continuously in the Islamic political economy according to the *Shuratic Process*.

The fact of the matter is that the technical concept of economic competition must necessarily imply a notion of optimum, steady equilibrium and self-interested individualism (singly or by groups). Such a notion must necessarily substitute resources 'globally'. The notion of complementarity is at best a local one in such an economic order. 'Global' or extensive and pervasive complementarity cannot exist unless the entire economic epistemology of resource allocation and behaviour is changed foundationally to one that can accept universal complementarity (Shackle, 1971, Daly et al., 1992, Smith, 1992).

IV. Analytical Difficulties with Neoclassical Prescriptions of Regulation in the Firm

A further analytical complication is introduced in the neoclassical economic treatment of imperfect competition. We note in the neoclassical type of optimal resource allocation problem that despite the fact that perfect information is not assumed, yet the methods of first and second best optimization results are retained. Consequently, either with or without asymmetric information among agents, with or without rational choice or bounded rationality, certainty or uncertainty - the choice set remains fully bounded and continues to be so in the long-run in the presence of all kinds of technological change. Thus technological change imparts no structural transformation to this intrinsic nature of 'technical' economic competition, marginalist substitutions and exogeneity of instruments, institutions and policies in the decision-making framework.

We find this to be the case also with Herbert Simon's organizational firms (Simon, 1957), despite his assumption of bounded rationality. This is because the environment

of the firm is still treated as an exogenous domain. On the other hand, Georgescu-Roegen's economic processes appear to be highly random and entropic (Georgescu-Roegen, 1971).

Returning now to Baumol's study on economic regulation, we note that the firm remains embedded in a market structure that is not subjected to structural transformation. The treatment of the firm thus turns out to be no different from the classical and neoclassical economic ideas involving technical competition. Consequently, prices, output and productivity must all be generated in the midst of such a technical idea of economic competition. The sole objective of economic regulation then turns out to generate a semblance of competitive prices.

Such a theoretical rationalization is of course not new. Lange (1942) wrote on the efficiency of the socialist pricing system by making incomes to be distributed equally. The result was a maximization of the social welfare function, which is a neoclassical objective criterion.

Baumol's recommendations on economic regulation also comprise the following: Regulation should promote free entry. Free entry of firms are argued to generate externalities, cut cost and reduce prices. 'Non-bottleneck' service-producing firms are seen to undercut 'bottleneck' service producing firms and enjoy lower cost of production.

In all such cases, the state-variables such as prices, cost and externalities are subjected to regulatory or deregulatory policies of financial managements causing competitive resource allocation. In this light, if we reconsider expression (7) in an Edgeworth-Bowley Box, we find the following kind of analysis:

First, we take g_{INF} as being externally provided in Baumol's analysis. Then, there must exist a marginalist-trade-off along a straight line, between g_p and g_u . Otherwise, if we treat g_p to be a given then too, the g_p and g_u will depend solely on marginal cost conditions. In either case, the inherence of the marginalist substitution principle of neoclassical economics, negates a process orientation to decision-making. This causes the final allocative point of optimum and equilibrium to negate the effectiveness of environmental effects on ethical decision-making in the firm. The ethical factor here is to determine the fair distribution of costs among participating firms who instead in Baumol's paper are treated as rival firms.

Diagrammatic Explanation of Pitfalls on Baumol's Economic Regulation Formula

We will now explain the above arguments by means of Figures 2 and 3. In Figure 2, we explain the nature of adjustment in expression (7), when g_p is given, and g_u with g_{INF} adjust. The U-curve shows change in factor productivity. This is shown by the

slopes along the curve. The I-curve shows the change in inflation. The comparison between the slopes along these two curves point out what productivity correction need to be made by increasing prices up to a ceiling to cap inflationary pressures. At the points a_2 and b_2 alone a unique level of output, Q^* , yields $g_p=0$ as the limiting case, but nowhere else.

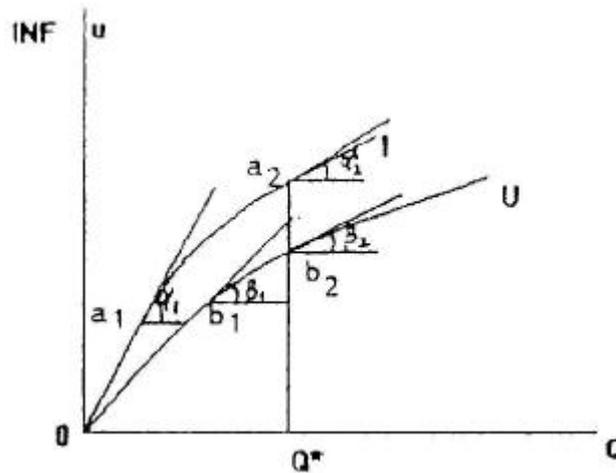


Figure 2: Baumol's Price Regulation under Economic Competition

As long as $\alpha_1 \neq \beta_1$, say $\alpha_1 > \beta_1$, there exist diseconomies caused by inflation. These fall upon monopolistic firms, because of their restricted input markets. Conversely, when, $\beta_1 > \alpha_1$, there exists external economies. Now competitive firms can take the benefit of enhanced productivities to cut down cost and earn profits.

In further on, we interpret u as benefit (B), and inflation as cost (C), then the points a_2 and b_2 imply, that $MC=MB$ in marginal terms. There is a good deal of literature suggesting that cheating behaviour in negotiated economic systems, such as for cost-sharing between non-bottleneck servicing firms and bottleneck servicing firms, can make the above condition of marginals a difficult task in pricing public goods (Frey, 1984). Thus, the attaining of $MC=MB$ remains to be only a special case, not a general one for dealing with regulatory issues that involve extensive decision-making processes. Consequently, Baumol's idea as explained by expression (7) being based on simply cost advantage to the non-bottleneck service producer, is a regulatory case that marginalizes process orientation in decision-making. Thereby, it also reduces the various ethical values that go with a decision-making process and that have the stability and distributive implications.

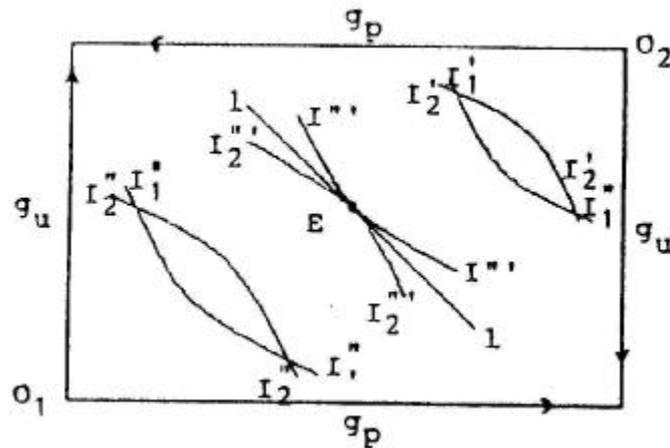


Figure 3: Edgeworth-Bowley Box Using Baumol's Price Regulation Idea

In Figure 3, O_1 denotes the origin of a rival in Baumol's contested markets. O_2 likewise, denotes the origin of the other contender. g_u and g_p denote the total of the growth rates of u and p , as mentioned earlier, for the two rivals. The indifference curves I_1 , I_1' , I_1 , I_1'' , are those of O_1 . I_2 , I_2' , I_2 , I_2'' , are those of O_2 . In either of these two cases, the MC and MB differ for O_1 and O_2 and between themselves. Thus regulation is required to cause $MC=MB$ for O_1 and O_2 in a certain market contract position. The result of such a regulation in Baumol's sense, is to generate prices that resemble competitive prices of market exchange. This position is denoted by E , where the indifference curves I_1 , I_1'' , I_2 , I_2'' , of O_1 and O_2 respectively, establish equilibrium. Thereby, then underlying utility functions are optimized. In these utility functions are the variables g_u and g_p for the two rivals, who within their own cases, experience marginalist substitution. Hence, once again a marginalist substitution between g_u and g_p is denoted by the straight line II . Now the marginal rate of substitution of g_u for g_p is given by $(dg_p/dg_u) = -1$, for a given value of g_{INF} .

The Knowledge-Induced Regulatory System of the Islamic Political Economy: From Short-Run Case to Long-Run Case

In the short-run case of Islamic transformation of ethicizing markets, we will incorporate inflation productivity and economic regulation in ways and by means that are different from the one given by Baumol. We now turn to study this issue.

Since the input and output of knowledge remain pervasive in the Islamic political economy albeit at a weaker level in the initial stages of Islamic transformation, therefore, resource allocation points, such as E in Figure 3 and a 's and b 's in Figure 2, are perturbed fuzzy points (Kosko, 1993). Around such points appear fields of

interactions, convergence (integration) and creative evolution. In the short-run, since some semblance of marginalism against global complementarity will exist, therefore, short-run substitution consequences will exist as well. Because of this characteristic, local and short-run neoclassical type production possibility surfaces will also exist.

But note that we are characterizing such surfaces as short-run ones. This is a concept contrary to the neoclassical assumption of long-run technological induction of the production possibility surfaces with the structural nature of marginalist substitution embedded in the trajectory of steady-state change over the long-run.

Figure 4 shows some local and short-run production frontiers with increasing fields of systemic interactions, integration of decisions and creative evolution of knowledge in the decision-making systems. Thus a point like E conveys a local and short-run decision-making in a field that allows for the marginalist substitution along I_1, I_1 . Likewise, E_2 is yet another case of such a marginalist substitution. Finally, in the long-run, E_2 evolves to E_3 in a field of interactions, integration and evolution - all signifying the existence of global complementarities. In such a phase of change, there cannot exist well-defined production possibility frontiers of the neoclassical type. Hence, there cannot exist straight lines for relative prices and marginalist substitution as shown by Π at the point E in Figure 2.

Now, since each of the short-run points, E_1 and E_2 , is weakly knowledge-induced, but evolve to E_3 with the growth of knowledge, therefore in Figure 3, points Like E can exist discontinuously in the Edgeworth-Bowley Box - and this occurs in the short-run only. Continuous points of the type from E_1 to E_2 to E_3 , will show fuzzy perturbations around such points in the Edgeworth-Bowley Box. Thus, an additional axis must exist in the knowledge plane to cause its induction of the socio-economic variables. We show such a case in Figure 5.

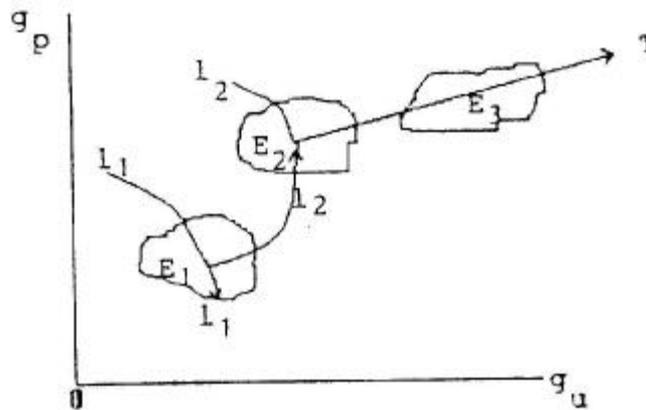


Figure 4: Short-Run to Long-Run g_u for Resource Allocation in Knowledge-induced Systems

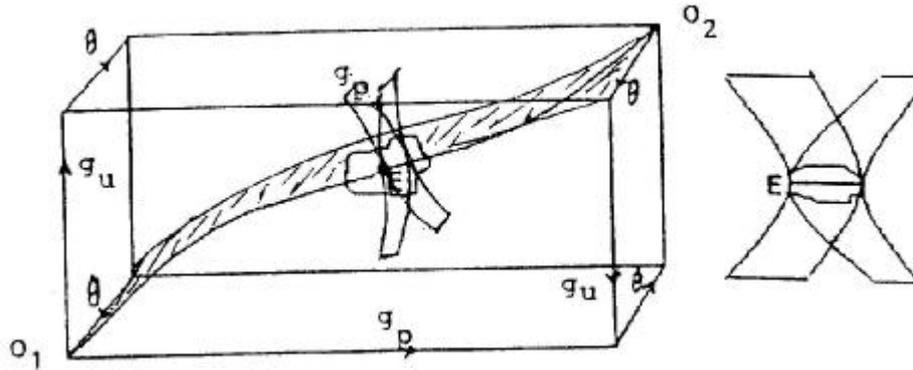


Figure 5: Knowledge-Induced Resource Allocation in the Three Dimensional Edgeworth-Bowley Box

In the Edgeworth-Bowley box, the knowledge-induced resource allocation trajectory is shown by O_1O_2 , where every point such as E , is a perturbed decision-making possibility. Since E now denotes an exchange under knowledge-induction the resource allocation trajectory, O_1O_2 , is our earlier mentioned path-dependent social contact of the Islamically ethicized markets. The multiplicity, diversity and complementarity of social decisions, are now possible at the vector point E of interacting preferences induced by knowledge sharing between O_1 and O_2 . This is shown by Figure 5. In higher dimensions hyperspaces, replacing E , can be conceptualized (Dewitt, 1992). We show such possibilities by the tangency of the two surfaces in Figure 5, which can be taken to higher dimensions.

The Criterion Function and Regulatory Practices for the Islamic Firm in the Short Run

The knowledge-induced social criterion function assumes, on the premise of Qur'anic epistemology (Choudhury, 1993a), that the principle of universal complementarity ("creation in pairs" as the Qur'an says) is polar, opposite and disjoint to the idea of marginalist substitution ("not to mix bad with good", "creation in abundance" as the Qur'an says). We thus define the social well-being function as opposed to a social welfare or social utility function, by virtue of the principle of universal complementarity. The latter principle is found to prevail in the social well-being criterion. The marginalist substitution prevails in the social utility and social welfare criteria. The two social criteria remain disparate.

The social well-being function, SW , in the complementary variables, g_u, g_p , induced by knowledge (θ), is given by,

$$SW = SW(I_u(\theta), I_p(\theta), \theta) \quad (9)$$

When a strongly interactive, integrative and evolutionary form of knowledge - induction of the socio-economic order exists, a clear disjointness between knowledge-values (θ) and 'de-knowledge' values ($\theta\sim$) (Choudhury, 1995a) exists. But in a weaker state of such transformation some traces of θ may exist. Thereby, knowledge-induced and de-knowledge-induced socio-economic variables exist in the local and short-run cases during the weak and early stages of transformation to Islamically ethicized markets.

We write all these as follows:

$$SW(\theta, \theta\sim, g_u(\theta), g_u(\theta\sim), (\theta), g_p(\theta), g_p(\theta\sim)) = SW_{\theta}(g_u(\theta), g_p(\theta)) + SW_{\theta\sim}(g_u(\theta\sim), g_p(\theta\sim)) - SW_{\theta-\theta\sim}(g_u(\theta), g_u(\theta\sim), g_p(\theta), g_p(\theta\sim)) \tag{10}$$

Diagrammatically, this appears in Figure 6:

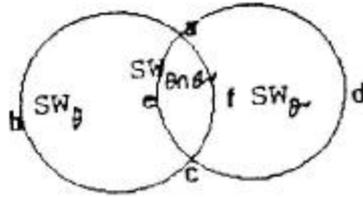


Figure 6: The Knowledge-Induced Social Well-Being Criterion in the Short-Run

$$Set(SW) = Set(abcd) = Set(abcf) \cup Set(aecd) - Set(aecf) \tag{11}$$

Hence, a monotonically positive measurable function on the set (SW) that preserves the relationship as shown in (11), gives the aforementioned result (10).

$$Now, \lim (\theta \rightarrow \theta^*, i \rightarrow N)[SW] = \tag{12}$$

either, (1). $SW_{\theta^*} + SW_{\theta^*\sim} \rightarrow SW_{\theta^*\theta^*\sim}$,

as the short-run case; N is small.

$$(2). SW_{\theta^*} + SW_{\theta^*\sim},$$

as the long-run case; N is large.

In expression (12), we define θ^* as a limiting value of evolutionary θ -values. This is attained, as interactions caused by i tend to N within a given level of integration. Beyond this, fresh and continuous rounds of knowledge evolution arise. These signify junctures of important market-driven consensus and dynamic change. Likewise, $\theta \rightarrow \theta^*$, with the property that θ and $\theta\sim$ remain inversely related. Hence, if θ increases

to θ^* over the interactive integrative and evolutionary stages, $\theta \sim$ would then decline to $\theta^* \sim$, as i-N. Hence, indeterminate cases (*mubah*), characterized by temporary non-zero value of $\theta \mathbf{I} \theta \sim$, are possible only in the short-run.

The short-run and long-run possibilities of expression (12) can be diagrammatically explained as follows in Figure 7. The section here should also reflect the short- and long-run nature of Islamic, transformation according to *Shuratic Process*. The questions of the normative and positive nature of the *Shuratic process* model are answered by recognizing that the inhering knowledge-induction is a programmatic learning between polity and markets. Hence there is a large area of positive analysis here, but substantive normative analysis as well, since the design of an evolutionary process is invoked. The model divulged here is a purely analytical one; it is far from being descriptive. Certainly it is a constructive model being an axiomatic one when premised on the immutable epistemology of Divine Unity (Tawhid) and in configuring the world-system according to such a Qur'anic construct.

1. Short run Case

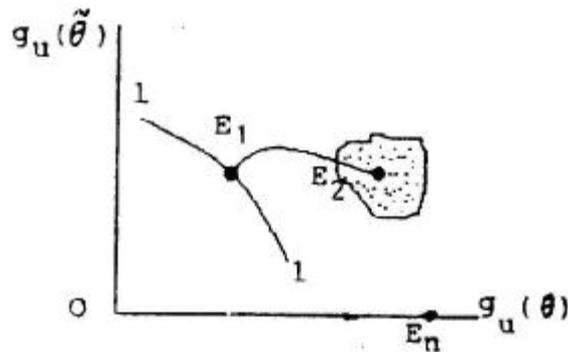
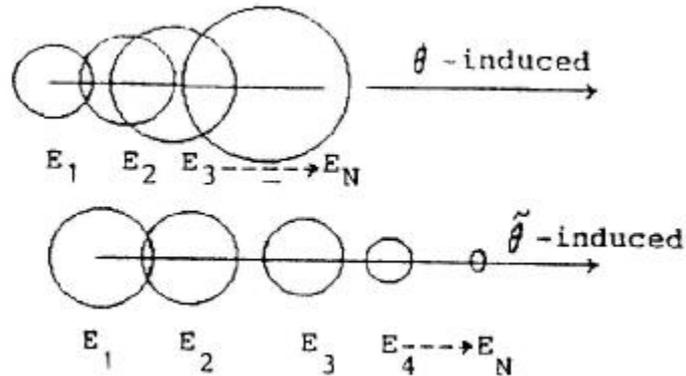


Figure 7: Knowledge-Induced Decision-Making from the Short- to Long-Run Transformation to Islamically Ethicizing Market

Here, E_1 denotes an equilibrium point on a local and short-run production possibility curve, 11, signifying marginalist substitution. But knowledge-induction of θ -values moves the trajectory towards $g_u(\theta)$, as shown. The same would be the case if the evolution was toward $\theta \sim$, instead. E_2 is a subsequent evolution off, E_1 a θ -induced region. Here, interactive and evolutionary knowledge-induced systems arise from a given state of integration to newer knowledge-induced processes of the same type. The integration points are market-driven social consensus. They form market *Ijma*. This terms is to be understood as consensual preferences that are developed by continuous learning between polity and market agents. Through this process of learning, the Shari'ah rules of ethical conduct and socio-economic arrangement are brought to bear on the consumption, production and distributional menus while an ethicizing market friendly transformation prevails.

2. Long run Case



In the long-run case, one observes the continuously enlarging and intersecting sets that are increasingly induced by the path, E_1, E_2, \dots, E_n , denoting the long-run movement of $g_u(\theta)$.

Here, the inverse process of 'de-knowledge', causes corresponding systems to become disjoint and reduced in relation to knowledge induction on a polar plane. Once again, two important features and implications of the E-points must be emphasized. First while E_1 and E_2 are short-run points residing around the local forms of the production possibility surfaces, the neoclassical implication of these is, that E_2 is a long-run evolution and is structurally optimal, like E_1 , without the interactive field, as shown around E_2 . This means that relative prices of g_u, g_p cannot be determined by neoclassical methods of optimality at points E_1, E_2 , etc.

The second point to note is that the E-points are continuously surrounded by θ -induced (or θ -induced) decision-making points. This makes the path, $E_1 E_2 \dots E_n$, to be a process oriented one. Finally, when either θ or θ - is made fully disjoint, evolution takes place solely in these disjoint domains by the same characteristics, namely, interactions leading to integration, and this in turn leading to creative evolution.

With the above presentation of the social well-being criterion, we now turn to relevant forms of short-run regulations and deregulations in the Islamic knowledge-induced market transformation process.

Regulations and Deregulations in the Islamically Ethicizing Market Transformation

The initializing of policy induction for firms in the process of evolution to Islamically ethicized markets is to induce knowledge of production, consumption and distribution based on strong and extensive complementarities in the menus and preferences. It can be shown that the epistemology and application of such a principle of universal complementarity can arise only from the *Tawhidi* (Divine Unity)

foundation of *Qur'anic* world view of a knowledge-induced universe. Within this are take up markets and firms as examples of knowledge-induced agencies.

The methodological orientation of the knowledge-induced complementary world view arises from an extensive nature of the *Shuratic Process*. This process is the same as the interactive, integrative and evolutionary one, premised on universal complementarity according to the unifying epistemology of *Tawhidi* Unity world view. In this extensive sense of the global process, the world view of the *Shuratic Process* is not limited to the political system alone. Rather, the inherent nature of interactions, integration and creative evolution in all systems, together with the human observations followed by explanation of these (*Ayat Allah* = Signs of God in the Qur'an), cause all systems to be politicized while interacting with economic, social and scientific systems. Such strong and pervasively interlinked complementary systems caused by the *Shuratic Process*, can be referred to as the socio-scientific order.

With the above two approaches being set for ethicizing market transformation, all interrelated systems now get activated by forms of decision-making. By the very nature of the interactive process, firms become cooperative organizations - competing for excellence and effectiveness alone, in knowledge-induction and its diffusion through socio-economic variables and functions. Among such variables and functions are g_u , g_p and SW, mentioned earlier. Because of the focused nature of cooperation, i.e. of complementing firms and sectorial interlinkages, the input markets too acquire cooperative properties.

The combined use of knowledge-induced product and factor markets, develop dynamic basic needs regimes of development. Consequently, g_u , g_p , g_{INF} and SW, adjust to this objective of sustaining dynamic (graduated) basic needs regimes of development. The idea here is similar to Imam Shatibi's type of consumption menus associated with his concept of preference formation for the public purpose, except that now the Shatibi-menus have been extended to the dynamic case (Masud, 1984, Choudhury, 1993b).

In the presence of increasingly cooperative and interlinked market transformation bottleneck service production is transformed into a cooperative one. Now, the idea of non-bottleneck service producers does not hold. Hence, costs are reduced not by generating non-bottleneck service producers as advocated by Baumol. Rather, they decline due to cost-sharing and risk-diversification realized in the cooperative and complementary order of extensive interlinkages.

Inflationary pressure (g_{INF}) is controlled by simultaneously generating complementary interlinkages across diversified regimes of dynamic basic needs and by patterning development along these lines, so as to induce firms, consumers and governments towards appropriate imports in equation (8). The *Shuratic Process* of

ethicizing market transformation is critical in generating and sustaining dynamic basic needs regimes of development.

Lower input productivity during earlier stages of knowledge-induction of ethicized market transformation is improved by reorganizing production along dynamic basic needs regimes of development. Hence, rival firms are transformed into cooperating ones by knowledge-induction of production menus. Price caps are then abandoned as a natural corollary to such a productive reorganization. On the issue of pricing in product and import factor markets, price caps do not comply with the general trends in incomes, total productivity, and price stability that are expected to prevail in dynamic basic needs regimes of development.

Here, we recall the expressions (6) and (8) and investigate the following:

$$g_u(\theta) = du/u = T(\theta)/u(\theta) > 0 \quad (13)$$

where, all variables were defined earlier.

$$g_p(\theta) = g_{\text{INF.DOM}}(\theta) + g_{\text{INF.IMPORT}} - g_u(\theta) \quad (14)$$

$$\text{Since, } g_p(\theta) = g_{\text{INF.DOM}}(\theta) + g_{\text{INF.IMPORT}}(\theta) = \epsilon(\theta) \quad (15)$$

where, $\epsilon(\theta)$ is a low sustained value that limits to zero as (θ) evolves by the force of interactions. Hence,

$$g_p(\theta) = \epsilon(\theta) - g_u(\theta) \quad (16)$$

$$\text{That is, } \lim(\theta \rightarrow \theta^*, i \rightarrow N)[g_p(\theta)] = -g_u(\theta) \quad (17)$$

Consequently, the price ceiling falls with the growth of productivity, until price caps become unnecessary with the evolution of θ over interactive, integrative and evolutionary phases of transformation toward ethicizing markets.

It can be shown that prices and productivity automatically adjust to each other across knowledge-induced transformation trajectories. To prove this case, we proceed as follows:

Expression (17) yields,

$$[u(\theta)/p(\theta)].[dp(\theta)/du(\theta)] = -1.$$

$$\text{That is, } p(\theta) + u(\theta) = A(\theta) \quad (18)$$

where, $A(\theta)$ is a knowledge-induced parametric function causing shifts in the expression (18). $A(\theta)$ causes the left-side of expression (18) to seek complementary levels between $p(\theta)$ and $u(\theta)$ under the force of evolving θ -values. Consequently, price caps cease to be the object of regulation in an Islamically ethicizing market transformation both in the short-run and the long-run.

Conclusion

In the end, the critical form of market regulation in an Islamic firm linked to the greater Islamic political economy, is to guide knowledge formation that emanates from and then regenerates continuous complementarities across the socio-economic system. This is conducted on the basis of the Qur'anic epistemology of *Tawhid* as the Divine Unity, which gives rise to an organization of life under the principle of unification, i.e. universal complementarity. This principle is manifested by strong and pervasive interactions, integration and evolution in the plane of universal complementarities. Diversities, interlinkages, participation, cooperation and codetermination of decisions under the precept of Shari'ah rules (*Ahkam*), become the focus of guidance. Such guidance with all the security, safeguards and enforcement, becomes simply a production, dissemination and application of knowledge as premised in the epistemology of Divine Unity, to the Islamic political economy.

Finally, since the knowledge-induced transformation to ethicizing markets occurs across dynamic basic needs regimes of development, so regulation by means of price caps becomes redundant. Now productivity increases and inflation declines. This is a pattern that is true both in the short-run and long-run in a knowledge-induced transformation to ethicizing markets.

Consequently, many of the regulatory practices recommended for firms in the context of privatization in mainstream economics, which here have been studied by reference to Baumol's contributions, do not hold for Islamic firms. While in the short-run a semblance of marginalist substitution may exist, yet with knowledge formation in the Islamic political economy, deregulation of prices, incomes and controls occur. The Islamic political economy now starts to adjust to its general systems of universally complementary interrelationships.

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تدخل الدولة في الاقتصاد السياسي الإسلامي : وجهات نظر مقارنة

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المستخلص : إن موضوع تدخل الدولة في النشاط الاقتصادي يعتبر من أكثر المواضيع الاقتصادية جدلاً خاصة في ظل التحولات التي تشهدها البيئة السياسية الاقتصادية في العالم. يهدف هذا البحث إلى إجراء دراسة مقارنة لأفكار تنظيم المنشآت، لاسيما الأفكار التي اقترحها "بومول" والخاصة بتوليد ما يشبه التسعير التنافسي في الأسواق، مع إبراز الموقف الفكري الإسلامي منها.

ضمن هذا الإطار دُرست المنشأة الإسلامية من خلال نماذج مبنية على منهج التوحيد المعتمد على المعرفة مع إبراز كافة الخيارات الأخرى المتاحة. يشكل هذا النموذج الأساس الشرعي للاقتصاد السياسي الإسلامي بالمعنى الواسع لعلم الاجتماع الاقتصادي حيث يركز النموذج على تتابع العمليات خلافاً للنموذج المبني على أوضاع التوازن المثلي. وفي هذا الصدد هناك من يجادل أن جميع أنواع التدخل تصبح زائدة ولا لزوم لها في المنشأة الإسلامية التي تسعى إلى تطبيق القواعد الشرعية في الاقتصاد السياسي الإسلامي. وهنا يتم التحول الاجتماعي الاقتصادي نحو تشكيل أسواق محكومة بقواعد أخلاقية في التعامل على كافة المستويات الزمنية، قصيرة وطويلة الأجل.