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Sayuti Hasibuan

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Rahmah Ismail and Ishak Yussof

Human Capital and Income Distribution in Malaysia: A Case Study

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EDITORIAL NOTE

Four papers make up this issue at hand. The first one, titled *The Law of Consistency and Socio-Economic Development*, by Sayuti Hasibuan, intends to give support to the statement that there is no world-view other than the unity of the divine law of Tawhid in the Qur'an which can properly explain in a cognizant and formal manner the differential socio-economic development experience in the world today. To this end the world empirical phenomena has been divided in two groups: the physical phenomena which are the subject of the physical sciences and the human phenomena which are the subject of the social sciences. These phenomena are guided by the same divine law, the law of consistency. The paper has emphasized on the human phenomena while including ideas about the physical one. On the human side, it has particularly tackled economy, finance and development. Based on the arguments it has submitted, the paper has strongly recommended that Muslim countries review their development strategies to make them more in line with the basic values of shar'iah economics.

The second paper, titled *Human Capital and Income Distribution in Malaysia: A Case Study*, by Rahmah Ismail and Ishak Yussof aims to identify the role of human capital in explaining income distribution in Malaysia, where a remarkable high economic growth has been achieved accompanying the vision to achieve the status of newly industrialized nation by year 2020. The study constructs Gini coefficient by various segments like ethnics, regions and strata to look at patterns of income distribution. The analysis has also used other measurements of income distribution such as income ratio and income percentage to support the idea that achieving high economic growth alone cannot guarantee a decent life of the society if there is large income gap between them.

The third paper, which deals with controversial issues, as implied in its title *Accelerating and Growth Effects of Trade Openness across OIC Countries*, is written by Omid Ranjbar and Zahra (Mila) Elmi. The paper investigates whether trade openness accelerates income per capita convergence process across OIC countries. For this purpose, the authors used convergence-growth equation that include three trade openness measures i.e. intra-trade openness, extra(outside)-trade openness and overall trade openness and dynamic GMM-SYS panel data estimator. They found that growth effect of trade openness varies by different openness proxies and by income groups. The results reached by them

show that overall openness trade and intra-openness trade proxies have dampened GDP per capita convergence process. But, extra (outside)-trade openness has accelerated this process.

The fourth and last paper in this issue under the title of: *Economic Performance of the OIC Countries and the Prospect of an Islamic Common Market*; by M. Kabir Hassan, Benito A. Sanchez and M. Ershad Hussain, examines economic performance of the OIC Member Countries and analyzes the prospect of Islamic Common Market by analyzing trade data within a gravity model framework. It also examines various sub-regional grouping within the context of gravity model, and finds that D8 comprising eight bigger OIC Member Countries is trade creating. The paper suggests a number of policy parameters tailored for more trade flow among the countries under consideration. It also emphasizes that the issue of Islamic Common Market should be examined further in light of new data and changed global perspectives.

The Law of Consistency and Socio-Economic Development

Sayuti Hasibuan

The paper intends to give support to the statement that there is no world-view other than the unity of the divine law of Tawhid in the Qur'an which can properly explain in a cognizant and formal manner the differential socio-economic development experience in the world today. To this end the world empirical phenomena will be divided in two groups: the physical phenomena which are the subject of the physical sciences and the human phenomena which are the subject of the social sciences. It may appear at first sight that these phenomena are guided by different natural laws. On deeper investigation and at the most fundamental level, however, it is seen that they are guided by the same divine law, the law of consistency. While the discussion will include ideas about the physical phenomena, the emphasis of the paper will be on the human phenomena, specifically on the economy, finance and development. Based upon the general applicability of the law of consistency in human societies in the contemporary world and in historical time, it is strongly recommended that Muslim countries review their development strategies to make them more in line with the basic values of syariah economics.

1. Introduction

Muslims generally recognize the fact that their societies are trailing the western countries in socio-economic development. Why this is so is not very clear. Is there a basic natural law that has been broken by these Muslim countries so that they are lagging behind ?

My answer to this question is that these lagging Muslim countries have not lagged behind because of lack of natural resources. Nor have they lagged because of the lack of capable people to manage their development. Instead they have lagged because they have chosen to neglect a very basic natural law in managing their socio-economic

development, the law of consistency. This means that the technologies that have been applied to develop their economies have not been consistent with their basic beliefs as Muslims. There has been an incongruence between basic beliefs and intents on the one hand with operational paradigm actually used to manage the development efforts on the other. The operational policies actually employed by and large are those based on neoclassical economics. The cardinal values of neoclassical economics are individualism and materialism which are contrary to the values in the Islamic religion. This incongruence leads to inefficiency and ineffectiveness in the allocation and use of scarce resources. Therefore they are lagging.

2. Methodology and Data

In this paper, I will first make a review about the law of consistency and ask the question whether the consistency one sees in physical phenomena is also to be found in social phenomena. The upshot of this review will be to suggest that there is in fact such consistency. Next, I will review the differential socio-economic experiences in the world to-day especially between the developed western countries and the Muslim developing economies. I will suggest that the Muslim countries have been lagging because there has been incongruence between the technologies they have chosen with their basic beliefs as Muslims. This is followed by a more detailed study of Indonesia, as the largest Muslim country in the world, with 87 % of its presently approximately 228 million total population being Muslims. The developed western countries on the other hand have had no such incongruence. They therefore have succeeded.

The data that I use about the state of development of the Muslim countries and the developed economies are those from the Human Development Report of the UNDP 2007/2008. The data do not report about spiritual development. But to the extent that the data are accurate, to my mind, one may use them for comparative purposes in human development in a given period of time. The paper is written on the assumption that the main issue facing humanity to-day, especially with regard to Muslim countries is to overcome the basic problems of poverty and injustice.

3. The Law of Consistency

According to one exposition “ Matter and energy obey a limited number of rules that describe their behavior; these were termed ‘natural laws’ in a significant US court decision that helped define science from a legal perspective. A scientific explanation better be consistent with natural law, or it won’t get very far within the scientific community (assuming the community is paying attention)”(Timmer, 2006.) The law of gravity discovered by Newton in 1687 is an example of a rule that governs the behavior of falling matter. “Newton held that every particle of matter in the universe attracts every other particle with a force that is proportional to the product of their masses and inversely proportional to the square of the distance between them. Mathematically this is expressed by the formula

$F = (Gm_1m_2) / (d^2)$ where F =force of attraction, G =universal gravitational constant whose value depends on the units chosen to express it and m_1, m_2 are the masses. (The *New Encyclopaedia Britannica*, Volume 5, 1991, pp. 435-6).

A very important quality of the rule of the behavior of matter as embedded in the law described by Newton is its consistency. Everywhere on earth, whether in America, Europe, Asia or Africa, the force of attraction of the earth’s gravity on an object will be equally strong as long as the distance of the same object from the surface of the earth remains the same. So, if one drops a textbook of 400 pages from a table in a classroom in Berkeley, California, for example, it will fall to the floor in the same time period if one were to drop the same textbook from a table of the same height in Jakarta. Another important characteristic of the rule of behavior is its generality in that it applies to all kinds of objects irrespective of their color, shape or function. What is important is its mass and distance from the surface of the earth. As long as these are the same, the force of attraction will be the same, whatever the object. With the development of the science of relativity, one needs to qualify the classical conclusion that the statement is true within a range of speed in which the objects are involved. But for the very practical purpose I have in mind, that is consistency in physical behavior, the classical law of mechanics as enunciated by Newton seems to be sufficient. “Notice that at low speeds and weak gravitational fields,

general and special relativity reduce to Newtonian physics, i.e. everyday experience". (Schneider & Amy, 2008)

Another example of consistency in behavior of physical phenomena is exemplified by the law governing the behavior of energy or thermodynamics. "The science of thermodynamics is based on two fundamental laws. The first law of thermodynamics says that energy can be neither created nor destroyed. Thus, during a chemical or physical process, the total energy of a system and its surroundings remains constant.....In any process, a system may gain or lose energy, but any change in the energy of a system is accompanied by a corresponding energy in the surroundings. When you sit in a cold room, for example, your body loses heat energy, but this heat loss results in an equal heat gain by your surroundings. ... The second law says that there is a general tendency toward disorder or randomness in the universe. This disorder is known as entropy. All processes proceed in such a way that the amount of entropy in the universe increases. " (Johnson,1983, pp. 111-112).

Although the amount of entropy increases, the amount of energy remains the same. For example, if there are two cylinders separated by a valve; one cylinder is empty but the other one is full of gas. If the valve is opened, the gas moves from the full cylinder to the empty cylinder. There is an increase in entropy. But the amount of gas energy in the two cylinders remains the same. Hence there is a very high level of consistency shown by the laws of thermodynamics.

But what has the laws of thermodynamics to do with living things ? " ... living things must obtain energy to counter the general tendency toward increasing entropy in the universe. Maintaining life is like walking in a fast- flowing river. It takes work just to stand still facing upstream in the current and even more work to move upstream. Life is possible in a universe in which entropy is increasing, but it takes a lot of energy to do the work necessary to live." (*Ibid.*, p.113).

But where does the energy come from? The living organism has to import it. "Thus, living systems, maintaining themselves in a steady state, can avoid the increase of entropy, and may even develop towards states of increased order and organization". (Bertalanffy, 1968, p. 41).

What can one learn about change and its management from the physical laws of nature as exemplified by the workings of the classical law of falling matter and the laws of thermodynamics ? One is informed that these laws are the will of The Creator and they are imbedded in nature. The imbedded will affect the outside world. Change in the outside world is thus brought about by the imbedded inner will of The Creator in the physical entities. Change does not come from the outside to the inside but from the inside to the outside.

4. Social Behavior and The Second Law of Thermodynamics.

From the example of the operation of the Second Law of Thermodynamics in individual human living thing, it stands to reason to ask whether The Second Law also applies to the behavior of a group of human beings such as a nation or a country. Intuitively The Second Law does apply. After all the population of the world is still increasing, as is the population in each country in the developing world. Furthermore the aspirations of the people of the world for a better life are also still increasing. This is especially true for developing economies following their independence from colonial rule. The increasing population and the desire for a better life are in a very important sense sources of increased disorder or entropy in these human societies. At the same time there is a need for a new equilibrium. There is a need for more food to feed the increasing population. There is a need for more infrastructures of all sorts to supply services in transportation, in health and education, in housing, and all other necessities of life. In terms of The Second Law of Thermodynamics one may say there is a need to control the great entropy of underdevelopment to uplift a less developed economy to a state of less entropy of a developed economy, to create a new equilibrium. The less developed country being an open system has to have energy injected into it to bring about increased and more desirable order. The energy injected will be in the form of human will properly translated into strategies and actions.

5. The Basic Law of Social Behavior: Consistency With National Objectives.

The basic question here is what kind of efforts needs to be undertaken to exercise control over the great entropy embodied in underdevelopment? How can The Second Law help us answer this question?

It needs to be noted that, whereas in the case of individual human living thing, the rules of behavior governing the various chemical and other processes within the human body have been programmed in some fashion, to achieve a certain objective, which one may say to be the organic growth of a healthy human life. For example, eating too much fatty food will increase the physical size of the body too much and too fast. Such growth will interfere with the proper functioning of the human heart. What kind of food and how much food to eat have to be *in accord* with the rules governing basic chemical and other nutritional processes within the human body so that healthy living may be created. Humans will need to find these rules and that is the reason why the medical profession becomes very important. This profession will tell us the processes within the human body and the implication of such knowledge for our eating behavior *consistent* with the requirements of these processes so that one can lead a healthier life at least biologically.

In the case of the behavior of a group of human beings such as a country, there are no pre-programmed rules of how to control the great entropy associated with underdevelopment to create a more developed society of less entropy. Humans need to invent those rules so that they can achieve their social or group aims. What should those rules be? The law of gravity discovered by Newton and The Second Law of Thermodynamics, however, put a very basic restriction that whatever efforts are undertaken to reign on the great entropy associated with underdevelopment, these efforts must be *consistent* with the aims to be achieved with these efforts. The rules of behavior must be consistent with the objectives to be achieved. The objectives and their attendant ideas will furnish the basic beliefs of the country. The rules of behavior, in the form policies and strategies, will be the technologies. The basic beliefs and the technologies have to be congruent with each other. One therefore may enunciate a basic social law of behavior. *The law says that the social behavior of a group of people such as a nation must be*

consistent with the nation's objectives; otherwise the objectives will not be realized.

I call it a law because it may be considered to be the counterpart of physical laws of behavior, specifically The Second Law of Thermodynamics. Furthermore, such congruence has been found to be true with regard to the achievement of different civilizations in history. The ancient Egyptians or the pharaohs had the basic belief that life after death is more important than life on earth. They therefore struggled to make preparations for life after death. "For a lifetime pharaohs would carefully hoard possessions to carry with them on their journey into eternal life as the pharaoh would make the same journey into eternal life....Their ideology of being interested in the distant future and being uninterested in the individual was as important to their long-term success as the mud of the river Nile."

(Thurow, 1996, p.13). The Romans, according to an ancient military observer, Vegetius " The Romans were less prolific than the Gauls, shorter than the Germans, weaker than the Spanish, not as rich or astute as the Africans, inferior to the Greeks in technology and in reason applied to human affairs. What they had was the ability to get organized and a vocation for domination" (Thurow, 1996, p. 15) "... China invented all of the technologies necessary to have the industrial revolution hundreds of years before it occurred in Europe. But "China did not have the right ideologies." (Thurow, 1996, p.15). So the revolution did not occur.

These experiences from history suggest that a country or a people not only need to have an ideology but that ideology needs to be correctly translated to effect external events. Alternatively, external events need to be understood in terms of the ideology of the people or absence thereof.

There is in fact nothing new about the relation between inner beliefs and external events. The Qur'an has said so more than 1400 years ago. "Verily never will Allah change the condition Of a people until they Change what is in themselves". (The Holy Qur'an, Surah 13:11). The need for inner beliefs and external events to be consistent may be considered to be an important instance that there is no world-view other than the unity of the divine law of Tawhid in the Qur'an which can

properly explain in the differential socio-economic development experience in the world today.

6. Differential Human Development Achievements Between Islamic Countries and Western Countries..

There has been widespread recognition among Muslims that they have not achieved as well as they should in socio-economic development compared to the more developed western countries and compared to the Qura'nic injunction that they are the best of peoples evolved for mankind, enjoining what is right and forbidding what is wrong and believing in Allah. This recognition is reflected, for example, in the answer of Dr. Iman Youssef Chebli, PhD, Chairman of World Islamic Mission Association to a question asked by a reporter from an Indonesian daily newspaper *Republika*. At the end of the conference, held in Libya 27-30 October 2008, the Chairman was asked by the reporter as follows “ The retrogress experienced by the Muslim *umah* in the last few centuries, is this due to the failure of *dakwah* ? “ The answer given by the Chairman was “Yes, I think so. One of the factors that have made the Muslim *umah* weak is the problem of education. There has been a kind of weakness in the area of education.” Another question asked to the Chairman in the interview was “What is the biggest challenge faced by the Islamic community in this era of globalization?” The answer was “The biggest challenge is how make the Islamic community return to the real teachings of the Islamic religion”. (*Tabloid Republika*, 2008, p. 5).

What the Chairman has said is fully corroborated by the facts. I will quote from an earlier study that I have made about the subject, with the data updated, as follows: “No Muslim country in the world, large or small, has ever achieved anything near what is achieved by the industrialized non-Muslim countries in terms of human development index or technology achievement. An important indication of this achievement, although far from perfect, is the human development index developed by the United Nation Development Program (UNDP). The highest human development index achieved by an Islamic country, according to the Human Development Report 2007/2008, was 30 by Brunei Darussalam out of 177 countries in the world. Larger Muslim countries like Malaysia, Saudi Arabia, Turkey, Indonesia, Pakistan and

Bangladesh are left far behind. The last three are respectively number 107, 136 and 140. Position number one in human development index was achieved by Iceland (UNDP , p.254). The relatively low position in human development index reflects lower achievement in health and education. In Pakistan, for example, life expectancy at birth was 64.6 years versus 81.5 in Iceland, combined gross enrolment ratio was 40.0 % versus 95.4 % in Iceland and GDP per capita of US \$ 2370 versus US \$ 36 510 in Iceland (UNDP, p.254). A large number of Muslims are mired in grinding poverty with income below US\$ 1 per day. Using US\$ 1 per day per capita as the poverty line, in the period 1990-2005, 7.5 % of the population in Indonesia, 3.1 % in Egypt, 17.0 % in Pakistan and 41.3 % in Bangladesh were below the poverty line. When the poverty line is increased to US\$ 2, the proportion of the population below the poverty line increases substantially, with Malaysia 9.3 %, Turkey 18.7 %, Indonesia 52.4 %, Pakistan 73.6 % and Bangladesh 84.0 % (UNDP., p.254). The prospects for the future are not bright. In Asia and the Pacific region, for example, according to the ADB-UNDP-UNESCAP report entitled *"The Millennium Development Goal, Progress Report in Asia and the Pacific"*, Indonesia together with Pakistan and Bangladesh are projected to fail to achieve their medium development goals of halving their poverty incidence by 2015."(Hasibuan 1, 2006)

7. The Case of Islamic Developing Economies: Case Study Indonesia

To find out why Muslim countries have not fared as well as they should, I studied in more detail the case of Indonesia and for this I have documented some basic long term facts about Indonesian development. A government report says that "In 25 years economic growth of Indonesia has been on average 6.8 %".(Republic of Indonesia,1994). The same report says that "the value of total exports increased 43 times from US\$ 872 million in 1968 to about US\$ 37.2 billion in 1993/94. Foreign loans increased from US\$ 266 million in 1968 to about US\$ 5,9 billion in 1993/94, and foreign investment (net) increased from US 10 million in 1968 to about US \$ 2 billion in 1993/94." Indonesia has been categorized as a miracle economy.

(The World bank, 1993). Yet other government sources especially the central bureau of statistics have documented various negative aspects of

the development process. Open unemployment has increased from 1.7 % of the labor force in 1980 to about 8.5 % at present. Underemployment remains at a high level at 36.5 % in 1980, 36.6 % in 1990, and 36.9 % in 1995, 36.7 % in 2000 and 32.2 % in 2004. There has been a very wide gap in the production capacity of small and medium enterprises on the one hand and large enterprises on the other. In 2003, for example, official government sources indicate that 42.4 million units or 99.9 % of all enterprises produced 56.7 % the GDP at that time providing 79.0 million of employment while 0.1 % of enterprises produced 43.3 % of the GDP and 0.5 % of total employment. As may expected, investment has been disproportionately allocated to the labor absorbing sectors of the economy. In The Vth Five Year Development Plan, 1989/90-1993/94, for example, agriculture received an allocation of only 2.98 % of the total investment of Rp. 334.4 trillion while it employs 48.15 % of the labor force totaling 82 million. Such a misallocation of investment resources is at the base of the consistently low total factor productivity of the economy and its low competitive capability in the various areas of socio-economic activities. More tellingly is the phenomenal rise in various kinds of criminal activities including corruption. In the years before the change of regime in 1998, and with a base 1985=100, the number inmates in jails committing various crimes increased to 110.5 in 1993, 110.5 in 1994, 116.0 in 1995, 112.3 in 1996 and 108.8 in 1997. With regard to giving kickbacks (*penyuapan*), which is a form of corruption, the index numbers were 76.5 in 1993, 100.0 in 1994, 129.4 in 1995, 535.3 in 1996 and 352.9 in 1997. (Hasibuan 2, 2008, pp.4-13).

Why is it that Indonesia failed to live up to the Qur'anic expectation ? One may say that Indonesia has failed because she has adopted the wrong strategy of development that is she has followed the precepts of neoclassical economics. These precepts are contrary to the basic values of the Islamic religion. First, these strategies focus heavily on achieving materialistic objectives in terms of economic growth. Such focus on materialistic objective in the form of high economic growth has resulted in increasing unemployment and poverty and other negative consequences such as corruption.

Such reliance on materialistic objective is anathema to the Islamic world view which requires that human beings be developed in a holistic manner, not only the materialistic dimension but also the spiritual

dimension and the dimension of human brotherhood. Second, the strategies adopted for the implementation of the development plans is based upon an individualistic paradigm, which assumes that the totality is equal to the sum of the individual parts. Each department or program is to be managed independently on its own. The summation of the success of each of the various departments or programs is assumed to be equal the success of the totality. In practice such an organization becomes the breeding ground for Arrow's paradoxes to flourish and stifles coordination with the result that operationally there is a very high level of ineffectiveness and inefficiency. The two management paradigms together promote the third management paradigm, i.e., the view of man as machines to be bossed around and not as full human beings with full potential for the development of their human capital, spiritual capital, social capital and cultural capital. Such a view of man is contradictory to the Islamic view of man as a slave and servant of Allah and as His vicegerent on earth. Collectively the three management paradigms have resulted not only in failure to achieve sustainable long-term socio-economic development objectives but also in very high cost of financial capital and natural resources. More fundamentally, even if the materialistic objective of economic growth is achieved, it will not be in a position translate the spiritual advancement so required by the Islamic religion. The promotion of human brotherhood in the society tends to be nullified, with right and wrong, good and bad all tend to be determined by materialistic gain and loss. (This part is a paraphrase of a part of the study previously quoted).

So an examination of the long term experience in socioeconomic development effort in Indonesia has revealed that Indonesia in fact has adopted an inappropriate strategy. It is inappropriate because there is incongruence between the belief system of the population and the technology actually adopted in socioeconomic development. The belief system is based on Islamic values. The social technology adopted in development is based on secular neoclassical system of thought. "Societies flourish when beliefs and technologies are congruent; decline when the inevitable changes in beliefs and technologies become incongruent. This reality can be seen by looking at successful societies in the past—many of them built on very different values and operating very different technologies from those that exist today. But they all needed this congruence if they were to succeed." (Thurow, 1996, p. 12).

More recently I have examined Law No 25, 2004 about the system of development planning in Indonesia and Law No.17, 2007 about the long term development plan, 2005-2025 of the country. Both of these laws faithfully reflect the neoclassical economic principles of materialism and individualism. The more detailed examination of the laws has been reported in a bulletin of the Department of Economics, Al Azhar University Indonesia. (Hasibuan 3, 2008). Both of these laws underscore the incongruence between belief system and technologies adopted in Indonesian development. The consequent basic failure is no surprise. The medium term development plan of 2004-2009, has so far been wanting in the achievement of its targets of either the average growth of 6.6 % per year or of reducing the open unemployment rate from 9.9 % in 2005 to 5.1 % in 2009. The unemployment rate in 2008 is 8,5 % (Feb.) while the growth rates are 6.2 % in 2008 and a projected 3.5 % in 2009. (*The Economist*, November 22-28, 2008, p. 101).

More importantly Indonesia, as a nation has not been consistent with the basic intent of the ideals which has been enshrined in the preamble of the 1945 constitution. Consequently, the country has failed to achieve what the constitution says the country should achieve and that is to realize Belief in The One God, a just and humane humanity, the unity of the country, the practice of consultation or “ *musyawarah*” and social justice for all Indonesians. Consequently if Indonesia wants to realize her ideals as embodied in its constitution it has to abandon the individualistic and materialistic paradigms and adopt modes of organization and management, which are consistent with the teachings of the Islamic religion.

8. Four Fundamental Ideas of Adam Smith

The Muslim countries as represented by Indonesia, have lagged behind in terms of socioeconomic development because their development policies have not been consistent with the development paradigm as required by their basic intents. By the same reasoning one may ask have the western countries followed through their basic intents in their development efforts consistently. The answer is yes because the western developed economies have adopted development and other policies which are fundamentally consistent with their basic intents as represented by four fundamental ideas of Adam Smith. These ideas are

followed through in neoclassical economics as a pool of knowledge to guide policies and actions in western developed economies.

Professor Edwin R.A. Seligman of Columbia University ascribed two fundamental ideas contained in Adam Smith's book *The Wealth of Nations*. The two fundamental ideas of *The Wealth of Nations* are self-interest and natural liberty. Quoting from the book, Prof. Seligman says: Self-interest:

“ It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their own advantage.” (Smith, 1960, p. vii). Natural liberty: *“ All systems, either of preference or restraint, therefore, being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as soon as he does not violate the laws of justice, is left perfectly free to pursue his own interests in his own way, and to bring both his industry and his capital with those of any other man or order of men”.* (Smith, p.ix). On the subject of freedom, Prof. Seligman concludes *“Laissez faire, laissez passer* is the key which unlocks all economic puzzles. The “be quiet “system, as Bentham calls it, is the sole panacea of human ills, the only hope of social regeneration. Give free play to the natural laws of liberty and equality, and prosperity will shine in all its refulgence on the expanse of national life.”

But upon reading the book I came across a passage which I think is of great significance. The self interest to be pursued in a climate of freedom of enterprise consists mainly materialistic in nature. In practical life at this time as in the time of Adam Smith, this materialistic aspect is represented by money. “To grow rich is to get money; and wealth and money, in short, are , in common language , considered in every respect synonymous”.

(Smith, p. 376). Such concern with materialistic aspect alone is further emphasized in the fact that, as Seligman put it, “ But what he was concerned with in *The Wealth of Nations* was an analysis of the economic situation and a consideration of the motives and conditions

that make for wealth, rather than for the wider conception of welfare in general.”

(Smith, pp.vii-viii)”. I would concur with this judgment of Prof. Seligman that Adam Smith separated economics as a field of inquiry from those of other fields affecting welfare such as morality. Adam Smith has written another book “*Theory of Moral Sentiments* in which he posits the doctrine of sympathy as the real bond between human beings”. But this doctrine of sympathy is not weaved into the economics of *The Wealth of Nations*. This separation is an important aspect of methodology not only in the development of economics as a science but also in policy making and implementation. The methodology I mean is the positive methodology which was later to be further elaborated by Comte through his six volume books *Cours de philosophie positive*, published between 1830 to 1842

(Encyclopaedia Britannica, 1991, Volume 27, p. 369) These then are the four cardinal ideas affecting the development of economics and economies since the *The Wealth of Nations* was written in 1776: individualism, materialism, freedom, and positivism. These are the basic underlying socioeconomic policies in the western countries, and in fact in much of the world. Capitalism as a system is based on these. Consistent with what is written in *The Wealth of Nations*, by individualism in this further development means operationally, the tendency to emphasize individual interest and activities as opposed to group interest and activities. (Catholic Encyclopaedia). By materialism here is meant what all materialists mean by it that all things are physical in nature.

(Moser, 1991). By freedom here is meant that a person is free to do what he deems necessary to promote his interest in the economic, social, political and cultural fields as long as those actions are in accord with existing laws of the land. It is also the freedom as conceived by Thomas Paine “ And God said, Let us make man in our own image. In the image of God created be him; male and female created he them.” (Paine, 1921, p. 43)

But in what sense are the western developed economies consistent in their behavior with the four basic values? The consistency is to be found

in at least three fundamental areas: socio-economic policies, the activities of the intellectuals and education. Despite the variation in the practice of capitalism in the different developed economies, these policies have been based on the same fundamental principles. The main objective to be pursued with socioeconomic policies is above all to maximize the growth in material wealth as measured by Gross Domestic Product. To promote such growth, the population is encouraged to practice the habit of high consumption. Freedom of consumption is the hallmark of western societies. To promote growth, a banking system based on interest, fiat money and minimum reserve ratio is established. To promote growth, laws and other social policies are created so that firms are encouraged to invest and maximize returns on their capital investment. The rule of law and social stability is to be established so that investment and consumption activities may proceed unhindered. Military power is promoted not only for the purpose of safeguarding internal peace but also as a means for foreign conquest in one form or another. History testifies to the statement that the power to dominate other countries and societies is a very important component of foreign policy of western developed economies since Adam Smith wrote his book *The Wealth of Nations*. In modern times, this domination is effected through an international monetary system using the dollar as its base. The domination and influence of other countries and societies will help create the necessary conditions for continued GDP growth and high consumption domestically. All the laws and policies are to be made with secular principles, with agreements solely among human beings and with the object of improving life on this earth alone.

9. Economics Since Adam Smith: No Change in Fundamental Ideas.

Since Adam Smith wrote his book *The Wealth of Nations*, there have been continuous activities of intellectuals to improve upon the basic principles, theoretically as well as in the practice of policies. There have also been a lot of attacks on neoclassical economics. Economics has become more specialized and mathematical in its exposition and is separated from political economy as originally written by Adam Smith. Having said all these, however, I would subscribe to the idea that economists generally consider economics to be alive and well. "The first thing to be said about this development is that one should avoid gaining the impression from it that science is recognizably in a critical state. In

fact, in the eyes of the vast majority of its practitioners, looked upon as a scientific discipline pure and simple it seems to be in a generally healthy condition.” (Roll, 1978, p. 604). Such conclusion is surely supported by the long line of comments and even criticisms bearing on the ideas of Adam Smith.

In the *classical economics* of Adam Smith it is thought that there is an autonomy and self-regulation, in the processes of wealth, in the operation of prices, rents, interest, and wages. General equilibrium occurs automatically. If there is unemployment or over-production, it is an abnormal and temporary situation. The normal situation is general equilibrium. (Djojohadikoesoemo, 1991, pp.26-52)

This view of automatic equilibrium is further elaborated by the neoclassical economists of the first generation. The classical economists emphasize supply as the determinant of price and employment. The neoclassical economists of the first generation, Alfred Marshall among others, emphasize the problems of demand and that price is a combination of supply and demand factors. Demand depends on the utility of the products as perceived by the consumers. Utility is dependent upon psychological evaluation of consumers. Exchange also involves transaction of labor, materials and capital. With all these however condition of automatic equilibrium will prevail.

In later years there has been a correction on the nature of competition.

“Competition may be constructive or destructive: even when constructive it is less beneficent than co-operation.” (Marshall, 1950, pp. 1-13) Competition is not only of the perfect type. It is also imperfect and monopolistic. Edward Chamberlain and Joan Robinson among others are the writers who wrote on imperfect and monopolistic competition.

(Wrenn,et.al., 2008). Perfect competition of the classics and imperfect competition of the neoclassics appear to exist simultaneously in the economy. Pure competition is the basis for general equilibrium in the economy. In reality both types of competition exist. There are various types of markets. For the same product there is competition based upon differentiation. (Djojohadikoesoemo, pp. 100-108). The works of these

authors are important because they bring us nearer to reality. But the basic ideas of materialism and individualism are not changed by the writings in imperfect competition. The idea of monopoly further emphasizes the 'animal spirit' of entrepreneurs seeking greater profits at the expense of the public.

The micro thinking of neoclassics does not help in providing solutions to the problems of unemployment in the 1930s.

Essentially what Keynes said is that there is no automatic process that supply creates its own demand. This absence of automatic adjustment occurs in the labor as well as in the capital markets. In the labor market a rise or fall in the real wage due to a rise or fall in the product price will result in decline or rise in employment. This is what the classics say. Keynes says, that when aggregate demand increases and prices increase relative to money wages, and with employment increasing, it is difficult for workers to demand corresponding increase in real wage. Furthermore, in wage negotiations, it is normal for labor to fight for money wage and not real wage. Marginal cost of labor is determined by money wage and not real wage. So there is a breakdown in the classical thesis that the supply of labor is a function of real wage as its main determinant. In reality there is a lot of underemployment of resources in the society so that there are various types of equilibrium. But the most important equilibrium is that of full-employment equilibrium.

In the capital markets too, there is no automatic adjustment to bring about full-employment investment. Investment depends on the operation of three variables all of which will determine aggregate demand: the propensity to consume, the rate of interest, and the marginal efficiency of capital. According to Keynes, the rate of interest is the amount that needs to be paid to money holders to release (i.e. to overcome their liquidity preference) their funds for investment. But such released funds need not automatically lead to real investment. Interest is not the price that automatically brings together an equilibrium between the supply of savings and demand for it in investment. Real investment depends on the marginal efficiency of capital. The expected return from investment may be such that although the rate of interest has been low, real investment does not occur. If investment does not occur and there is a lot of loanable funds in the society resulting from high savings, then

effective demand will not increase. Instead it may decrease. There will be unemployment. When unemployment increases, the government will need to intervene directly. The government will also need to intervene to regulate the interest rate and the money supply. The interest rate will affect the marginal efficiency of capital and therefore investment. Keynes is quoted to have said "...I agree that our methods of control are unlikely to be sufficiently delicate or sufficiently powerful to maintain continuous full employment...I should probably relax my expansionist measures a little before technical full employment had actually been achieved." (Skidelsky, 1992, p. 603).

There are other situations when the government needs to intervene in the economy. For example, when there is over-investment in the economy, as is happening at the moment in the housing sector in the American economy, leading to bank failures and credit crunch and recession, the government needs to find ways to promote the flow of credits again to revive the economy.

The call for government intervention in the economy in order to keep employment at high level is a big blow to the idea of laissez faire. Prosperity will shine not because " natural laws of liberty and equality " are given free play, but because they are not given free play. However, it must be noted that "free" is certainly relative. The present market system in all the capitalist world is certainly free compared to communist system of Stalin or Mao Tse Tung.

Briefly then, over the last 230 years or so since Adam Smith wrote his book, there have been very alive intellectual activities on the part of scholars to provide corrections or qualifications to some of the basic ideas of neoclassical economics. These activities play very important role to keep the capitalist system dynamically functional in accord with the fundamental ideas. The perpetuation of these ideas is furthermore enhanced through their teachings in economic curriculums in universities. The text books used, such as the *Macroeconomics* of Dornbusch and Fischer (Dornbusch and Fischer, 1990) are the active promoters of these ideas. There are other schools of thought in economics, but the dominant school is neoclassical economics. "There can be no doubt that the neoclassical school of economics is the dominant school of economics in the western world. University courses that major in economics are overwhelmingly grounded on neoclassical

principles, especially for microeconomics. In fact, the orthodox economist would regard the type of economics taught as being definitive, rather than as belonging to a particular school among alternative equally valid schools.” (Mair and Miller, p. 71). One may conclude that the basic nature of economics as expressed in modern day capitalism as well as in university teaching is the one to be found in neoclassical economics.

10. Five Basic Elements of Consistency

One may ask, in what meaning is there consistency between basic beliefs and the technologies employed by a society? One may identify five fundamental elements in basic beliefs on the one hand and technologies employed on the other. By technology here I mean the strategies, policies and actions taken by the human agents to effect change in the external environment in order to realize the objectives the human agents have in mind. The five fundamental elements are belief in God, belief in the purpose of human existence, moral beliefs and ethics, scientific development, and strategies, policies and actions (Hasibuan 4, 2000, pp. 26-28). These five fundamental elements are interconnected. In western countries, belief in God lies strictly within the private domain and does not possess any organic element with public policy. This is generally the case with secular societies of western countries where, as Dr. Anas Zarqa has put it “ Humanity is the ultimate reality, and the significance and ultimate aims of this life, if any, ought to be sought within life itself and not beyond it.” (Kurshid, 1980/1400 H., p. 10) Here the purpose of human existence is simply to maximize pleasure and minimize pain. Morality and the ethics of right and wrong will be solely based on such world-view. So also is scientific development including, most importantly for our purpose, the development of neoclassical economics. Here the approach used is that of positivism, “the form of empiricism that bases all knowledge on perceptual experience and not on intuition or revelation”. (Google Web definition). Based on neoclassical economics, the strategies, policies, and actions to maximize growth (and profits in enterprises) will be undertaken. So there is relatively complete congruence of the first four components of basic beliefs with the fifth that is the technologies that have been adopted. It is also in this sense that Muslim countries in general have not been consistent as was elaborated previously.

11. Conclusions

The conclusions of the study may now be simply put; that there is need to be consistent in physical behavior as well as in social behavior if the respective objectives in each sphere are to be achieved. In the physical realm this consistency is programmed by The Creator. In the social realm it is humans, through properly exercising their will, who have to create this consistency between their beliefs and external actions. In the case of Muslim developing economies there has not been such consistency with the result that these economies have failed to achieve what they should be achieving as Muslims. The western countries have largely been successful to maintain consistency between the basic beliefs as originally laid down by Adam Smith. So they have had a high measure of success in their socioeconomic development as measured by their standards. The differential achievements between Muslim societies and western societies are to be explained by the differential capability of each to be consistent with their respective beliefs with regard to socioeconomic development. These conclusions have clear implications for Muslim developing economies.

12. Implications for Muslim Developing Economies.

A strong recommendation can now be justifiably made that Muslim economies have to abandon the basic strategy of their development based on the principles of neoclassical economics. These principles are materialism and individualism. These economies have to articulate their home grown concepts of development in terms of the operational paradigm of syariah or Islamic economics. This means that the Muslim countries have to redefine the methodology of their development strategies, the substance of the strategy, its mode of implementation, and the measures of success, to accord with the values and methodology of syariah economics. Indonesia has painfully realized that to effect the development of her people in accordance with *Pancasila* or The Five Principles, she has to rely operationally on the syariah paradigm. The neoclassical paradigm which has been adopted since her independence more than 63 years ago have failed to deliver the promise of independence of prosperity and social justice. She is now grappling with this paradigmatic change, under a President who seems to be sympathetic to the need for change. Muslim intellectuals, in and outside

government, have a large task of articulating, in a policy oriented way, the various components constituting the basic beliefs and strategy in terms of values of the Islamic religion. For example, we need operational substitutes of economic growth and maximum profits as measures of institutional success, substitutes based on the *maqasid syariah* such as discussed by Misanam, et. al in their Islamic economics textbook (Misanam, et. al., 2008). We do not want to always go on practicing a monetary system, interest free though it is, based upon fiat money and reserve requirements as it is now. We need syariah economics textbooks with a Qur'anic orientation methodologically to help effect a peaceful change from the conventional neoclassical system to syariah system. Each Muslim country needs to have its own text book. This is a practical way to rid ourselves from being forever “trapped in a feigned kind of neo-liberal and neoclassical doctrinaire” as aptly put by Choudhury. (Choudhury, 2005, p. 1). There is a large concerted mission job that needs be done among us and our brothers who are still very keen and steeped with neoclassical economics and among politicians. It will be very productive if international Muslim mission organizations such as World Islamic Call Society and World Islamic Mission Association join hands to spread the messages that are the subject of this paper. As Muslims we should all join hands to usher in our long due contribution to human prosperity and justice in the modern age, reflecting the basic belief that Islam is a boon and a savior to all nature and humanity. *Wallahu'alam bish shawab.*

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Human Capital and Income Distribution in Malaysia: A Case Study

Rahmah Ismail and Ishak Yussof

Malaysia has achieved a remarkably high economic growth as a result of strong government policy and political stability. The national vision to achieve the status of newly industrialized nation by year 2020 seemed to be realized. However, achieving high economic growth alone cannot guarantee a decent life of the society if there is large income gap between them. Based on the historical data, the trend of income inequality in Malaysia has been unstable since independence even though human capital development has been expanding over time. This paper aims to identify the role of human capital in explaining income distribution in Malaysia. The analysis is based on 4,003 household data collected through a survey conducted in 2007-2008 throughout the Peninsular Malaysia. The study constructs Gini coefficient by various segments like ethnics, regions and strata to look at patterns of income distribution. In addition, other measurements of income distribution such as income ratio and income percentage will also be used in the analysis. A regression model will be specified to estimate the role of human capital on income distribution. In the model, household income ratio will be used as dependent variable whilst household characteristics including human capital achievement, location and regions will act as independent variables.

I. Introduction

The role of human capital on economic growth and development is becoming more important. It is believed that more educated population will bring a significant positive impact on social, political and economic performances. Generally speaking, an increase in human capital achievement amongst the population will stimulate economic growth and reduce incidence of poverty. Furthermore, human capital will lead

to a more civilised society through knowledge, information and good culture practices. Therefore, it is necessary for a country to continuously invest in human capital to enhance and maintain the quality of its human resource.

In Malaysia budget allocation for human capital investment through education, training and health is considerably high. For example, between the 2000-2003 periods, percentage expenditure for education and training were more than 20% of the total government expenditure. Even though years after 2003 witnessed a drop in this percentage, it was never been lower than 12% (Economic Report, various years).

One of the major aspects of economic development is to achieve a more equal income distribution amongst the various segments of the society. Yet, in Malaysia despite of achieving a considerably high economic growth, poverty and income distribution are still be the major concern. High economic growth does not guarantee equal income distribution because the later need government interference and cannot merely leave to the market forces. This is because people do not have equal chance in owning and exploring resources. Even though with good government policy, issue of income inequality will still persist if such policy is ineffective. For example, if the programmes that are designed for the poor do not reach the target groups.

The objective of this paper is to discuss income distribution by various segments like ethnic and strata using several indicators like Gini coefficient, income ratio and income percentage. Apart from this, this paper also aims to analyse the role of human capital achievement on income distribution in Malaysia. The analysis is based on 4003 household's data collected in 2007/2008 in Peninsular Malaysia.

This article is organized as follows. In section 2, we discuss literature review and in section 3, we explore research background like human capital achievement, trend of income distribution and trend of poverty. While in section 4 we explain the methodology and model specification. Section 5 explains the results from the study and lastly section 6 summarizes the results and conclusion.

2. Literature Review

Schultz (1960) and Becker (1964) argued that human capital variables have positive relationship with earnings through productivity enhancement. Since earnings constitute a major portion of income, the distribution of income will be more equal when educational opportunity is equally distributed. Becker (1964) limits human capital components into four to include education, training, health and migration. But these components have been changing overtime to suite with current environment. For example, variables like knowledge, skills and information are added to the components (Becker, 1993; Fedderke et al, 1999 & Djamaludin Ancok; 2007).

It is long been recognized that human capital is one of the factors that can raise people's income, hence, lessen income inequality. The power of human capital to raise individual' earnings has been pointed out by the founder of Human Capital Theory, Schultz (1960) and Becker (1964). This argument subsequently supported by other researchers and most studies strongly show significant and positive relationship between human capital attainment and earnings or income (Denison, 1967); Barro, 1990; Mankiw et al., 1992; De Gregario, 1992; Otani & Villanueva, 1993; Hanson & Knowles, 1997; Murthy and Chien, 1997; Barro & Lee, 1996 & Pritchett, 1996). They also agree that when human capital attainment especially education is equally distributed amongst the society, then income distribution will be more equal (Hammermesh, 1984).

Most previous studies show a positive relationship between income distribution and human capital. For example, Podder (2003) studies the role of human capital in determining earnings inequality in Australia between 1997 and 1998. Using Mincer quadratic earnings equation, he finds that inequality is associated with the presence of discrimination. Grimm (2004) uses micro simulation dynamic model to analyse impact of educational development in Cote d' Ivoire on household income. He finds a positive relationship between these two variables, whereby income distribution and poverty depend very much on returns to education and demand for labour. In another study, Arabsheibani,

Carneiro and Hanley (2003) find that an increase in rate of returns to education will reduce income inequality.

A study by Behr, Christofides and Neelakantan (2004) using data from the United States Census Bureau from 1970 to 2000 shows that education reduces inequality of the 50 states. Ferreira and de Barros (2000) studies education and income distribution in Brazil using data from 1976 to 1996 and utilizing simulation method. The result shows that a decrease in returns to education and experience will increase poverty. In contrast, an increase in education level and equality in income distribution as well as dependency ratio will decrease poverty.

There are also studies that try to identify the determinants of income distribution. For example, Rahmah and Poo Bee Tin (2002) using the Malaysian data of the 1970-2000 period study the determinants of income distribution. They find that foreign direct investment, unemployment rate and foreign labour have a positive significant relationship with Gini coefficient. This indicates that an increase in those variables will reduce income inequality. While GDP growth, manufacturing employment and transfer payment are negatively associated with income inequality. Lin (2007) analyses the education expansion, educational inequality and income inequality in Taiwan from 1976 to 2003. He finds that, Taiwan has experienced a decrease in education inequality and an increase in mean year of schooling. This subsequently contributes to lower income inequality in Taiwan.

3. Human Capital, Income Distribution and Poverty in Malaysia

Education and training are two major components of human capital. In Malaysia, enrolment at tertiary level of education increases during 2000-2010 periods. At the certificate level, total enrolment increased from 105,570 in 2000 to 132,880 in 2005. The number is expected to increase further to 284,770 in 2010. Other education levels show a similar trend. When comparing enrolment in the public tertiary institution with the private institution, the data shows that enrolments in the public institutions is higher except at the certificate and diploma level (refer to Table I).

Table 1: Enrolment in Tertiary Education Institution by Education Level 2000 – 2010

Education Level	Number of Student								
	2000			2005			2010		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Certificate	23,816	81,754	105,570	37,931	94,949	132,880	141,290	143,480	284,770
Diploma	91,398	117,056	208,454	98,953	131,428	230,381	285,690	188,680	474,370
Bachelor Degree	170,794	59,932	230,726	212,326	110,591	322,917	293,650	134,550	428,370
Master	24,007	2,174	26,181	34,436	4,202	38,638	111,550	5,770	117,320
Ph.D	3,359	131	3,490	6,742	140	6,882	21,410	270	21,630
Total	313,374	261,047	574,421	390,388	341,310	731,698	853,590	472,750	1,326,340

Source: Malaysia, 2006

Training is another aspect of human capital that gains much attention from the Malaysian government. Training programme is associated with employee's skill improvement and hence, stimulate productivity growth. During the Ninth Malaysia Plan (9MP), the government has introduced double shift training programmes aiming to increase training opportunity amongst the school-leavers and increase the supply of skilled human-resources (Malaysia, 2006). The establishment of 20 new skill training institutions and upgrading 10 training institutions resulted in 38,765 supply of new workforce from the public sector and 33,111 from the private sector in 2005 (Malaysia, 2006).

Apart from upgrading the educational attainment among the society, the government has designed various programmes for poverty reduction and income distribution. In terms of poverty reduction, the programmes are quite successful in uplifting the households above the poverty line. Table II shows the poverty rate and hardcore poverty from year 1980 to 2007. In 1980, the poverty rate was 32.1 percent with lower poverty rate achieved in the urban area. Poverty rate had continuously decreased and reached 3.6 percent in 2007. While the hardcore poverty rate declined from 6.9 percent in 1985 to 0.7 percent in 2007. The percentage of hardcore poverty in urban and rural area had declined from 2.4 percent and 9.3 percent to 0.3 percent and 1.4 percent respectively in 1985 and 2004.

Table 2 : Poverty Rate and Hardcore Poverty

Level of Poverty	Percent						
	1980	1985	1990	1995	1999	2004	2007
Poverty Rate	32.1	20.7	17.1	9.6	8.5	5.7	3.6
Urban	16.3	8.5	7.5	4.1	3.3	2.5	2.0
Rural	39.5	27.3	21.8	16.1	14.8	11.9	7.1
Hardcore Poverty Rate	-	6.9	4.0	2.2	1.9	1.2	0.7
Urban	-	2.4	1.4	0.9	0.5	0.4	0.3
Rural	-	9.3	5.2	3.7	3.6	2.9	1.4

Source : Malaysia, 2000; Malaysia, 2006

Table III presents the poverty rate and hardcore poverty by ethnic group from 1999 to 2004. The hardcore poverty rate for Bumiputera in the urban area remains at 0.7 percent from 1999 to 2004. This rate is lower than in the rural area at 4.4 percent in 1999 and 3.3 percent in 2004. As a whole, the hardcore poverty for Bumiputera decreased from 2.9 percent in 1999 to 1.9 percent in 2004. The hardcore poverty for the Chinese has been reduced but remains the same for the Indian during the same period.

**Table 3 : Hardcore Poverty and Poverty Rate by Ethnic Group
1999 and 2004**

	1999 (Percent)			2004 (Percent)		
	Bumiputera	Cina	Indian	Bumiputera	Cina	Indian
Hardcore Poverty	2.9	0.2	0.3	1.9	0.1	0.3
Urban	0.7	0.1	0.2	0.7	<i>neg¹</i>	0.2
Rural	4.4	0.4	0.5	3.3	0.3	0.5
Overall Poverty	12.4	1.2	3.5	8.3	0.6	2.9
Urban	5.1	0.8	2.4	4.1	0.4	2.4
Rural	17.5	2.7	5.8	13.4	2.3	5.4
Poverty Gap	3.3	0.2	0.7	2.1	0.1	0.6

Note : 1 Less from 0.05 percent

Source : Malaysia, 2006

One of the indicators for income distribution is share of income by certain group of households. During the Ninth Malaysian Plan, the household share of income for 40 percent lowest income group decreases from 14.0 percent in 1999 to 13.5 percent in 2004. While for the top 20 percent income group, it increases from 50.5 percent to 51.2 percent during the same period. The Gini coefficient also shows a more

unequal trend of income distribution which increased from 0.452 in 1999 to 0.441 in 2007 (Malaysia, 2006). The household monthly real mean income for Bumiputera increased from RM1,984 in 1999 and RM2,522 in 2004. The Chinese household real mean monthly income is the highest. The real mean monthly household income in the urban areas in 1999 is RM3,103 and in the rural area it is RM1,718. It increases to RM3,956 and RM1,875 in 2004 respectively for the urban and the rural area(refer Table IV).

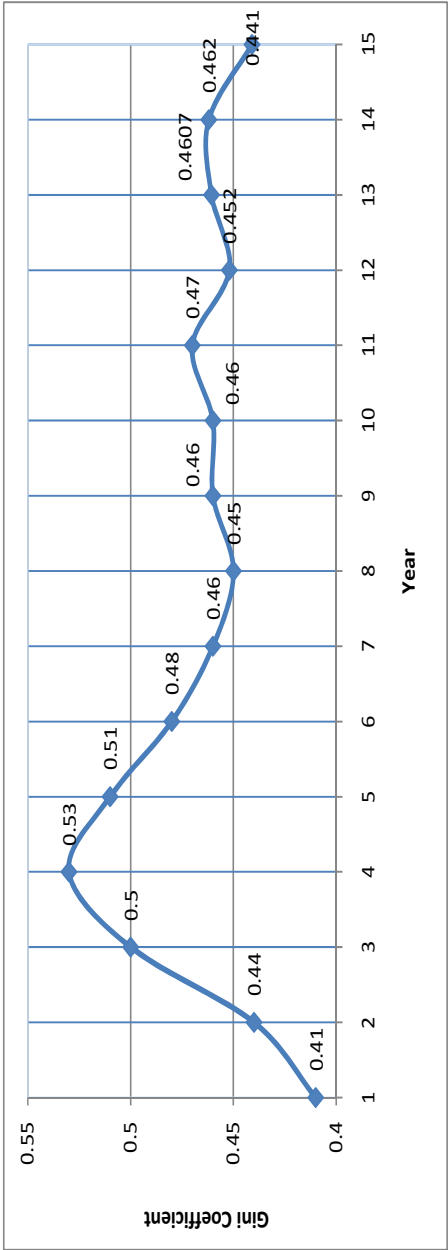
Table 4 : Average Monthly Gross Household Income and Gini Coefficient by Ethnic Group and Strata, 1999 And 2007

Ethnic Group and Strata	At Current Prices (RM)			Gini Coefficient		
	1999	2004	2007	1999	2004	2007
Bumiputera	1,984	2,711	3,156	0.433	0.452	0.430
Chinese	3,456	4,437	4,853	0.434	0.446	0.432
Indian	2,702	3,456	3,799	0.413	0.425	0.414
Others	1,371	2,312	3,651	0.393	0.462	0.545
Malaysia	2,472	3,249	3,686	0.452	0.462	0.441
Urban	3,103	3,956	4,356	0.432	0.444	0.427
Rural	1,718	1,875	2,283	0.421	0.397	0.388

Source: Malaysia, 2006

Figure I below shows trend of Gini coefficient between 1957/58 and 2007 period. The Gini coefficient for 1957/58, was 0.41 and increased to 0.53 in 1976. After 1976 it continuously decreased until 1990 and followed unstable trends after that period. The Gini coefficient for 2007 was 0.441 and this is the latest figure available.

Figure 1: Gini Coefficient from 1957/58 to 2007



No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Year	1957/58	1967/68	1970	1976	1979	1984	1987	1990	1993	1995	1997	1999	2002	2004	2007

Note: 1957/58 – 1987: Peninsular Malaysia

Source: Sodgrass, 1980

Anand, 1983

Malaysia (1981, 1984, 1989, 1991, 1993, 1996, 1999, 2001, 2006, 2008)

4. Methodology and Model Specification

Data Collection

Data was collected through a field survey conducted in 2007/2008 for the whole Peninsular Malaysia using a set of questionnaire. The group stratified sampling method is used to get the sample size by regions, states, location and ethnicity. The household population is obtained from Census of Population and Housing in Malaysia (Malaysia, 2001) and population composition is based on the Ninth Malaysia Plan (Malaysia, 2006). The original plan was to get 5,000 households but only 4,003 households were successfully interviewed.

The role of human capital on household income ratio is analysed using a multiple regression model. The independent variables include human capital variables like education, training, working experience and other variables like health, demography, job category and job sector. The estimation model can be written as follow,

$$IR_i = \beta_0 + \beta_1 MYSWP + \beta_2 MTTWP + \beta_3 MEXP + \beta_4 MLWP + \beta_5 MAWP + \beta_6 DU + \beta_7 DM + \beta_8 DC + \beta_9 DKM + \beta_{10} DS + \mu$$

Where,

IR = percentage of household income

MYSWP = Mean year of schooling for working household

MTTWP = Mean period of training for working household

MEXP = Mean working experience for working household

MLWP = Mean score of healthy lifestyle for working household

MAWP = Mean days absence from work for working household

DU = location dummy, coded 1 if urban, 0 otherwise

DM = ethnic dummy, coded 1 if Malay, 0 otherwise

DC = ethnic dummy, coded 1 if Chinese, 0 otherwise

DKW = knowledge workers dummy, coded 1 if household headed works in the category of senior officer and manager; professional; technician and assistant professional, 0 otherwise

DS = sector dummy, coded 1 if household headed is involved in service sector, 0 otherwise

μ = error term

5. Profile of Respondents and Estimation Results

Table V shows profile of the households in this study. A total of 2,749 households (68.7%) live in the urban area while 1,254 (31.3%) live in rural area. Most households are concentrated in the central and north regions. More than half of the households from all races live in the urban area.

Table 5 : Distribution of Household by Region, Location and Ethnicity

	Urban				Rural			
	Malay	Chinese	Indian	Total	Malay	Chinese	Indian	Total
Region	Malay	Chinese	Indian	Total	Malay	Chinese	Indian	Total
North	444 (67.3) [23.6]	170 (25.8) [25.4]	46 (7.0) [23.0]	660 (100.0) [24.0]	318 (77.4) [33.8]	70 (17.0) [28.9]	23 (7.0) [23.0]	411 (100.0) [32.8]
South	378 (70.8) [20.1]	121 (18.1) [19.2]	35 (6.6) [17.5]	534 (100.0) [19.4]	184 (74.8) [19.6]	49 (19.9) [20.2]	13 (5.3) [18.1]	246 (100.0) [19.6]
Central	892 (67.2) [47.5]	330 (49.3) [48.4]	105 (7.9) [52.5]	1327 (100.0) [48.3]	135 (72.6) [14.4]	39 (21.0) [16.1]	12 (6.5) [16.7]	186 (100.0) [14.8]
East	165 (72.4) [8.8]	49 (7.3) [7.5]	14 (6.1) [7.0]	228 (100.0) [8.3]	303 (73.7) [32.2]	84 (20.4) [34.7]	24 (5.8) [33.3]	411 (100.0) [32.8]
Total	1879 (68.4) [100.0]	670 (24.4) [100.0]	200 (7.3) [100.0]	2749 (100.0) [100.0]	940 (75.0) [100.0]	242 (19.3) [100.0]	72 (5.7) [100.0]	1254 (100.0) [100.0]

Note: () percent of the total amount, [] percent within ethnicity

Source: Field survey, 2007/2008

The study reveals that the majority of households regardless of ethnicity work in the services sector followed by the manufacturing sector. As predicted, an involvement of the Malay households in the agriculture sector is higher than the other races (refer Table VI).

Table 6 : Distribution of Working Household by Sector

Sector	Urban				Rural			
	Malay	Chinese	Indian	Total	Malay	Chinese	Indian	Total
Service	2634 [78.5]	811 [77.5]	233 [73.7]	3678 [78.0]	986 [57.1]	274 [71.5]	70 [56.9]	1330 [59.5]
Manufac turing	518 [15.4]	152 [14.5]	53 [16.8]	723 [15.3]	228 [13.2]	45 [11.7]	24 [19.5]	297 [13.3]
Agriculture	74 [2.2]	14 [1.3]	12 [3.8]	100 [2.1]	400 [23.1]	50 [13.1]	24 [19.5]	474 [21.2]
Mining	8 [0.2]	0 [0.0]	1 [0.3]	9 [0.2]	1 [0.1]	1 [0.3]	0 [0.0]	2 [0.1]
Construction	120 [3.6]	69 [6.6]	17 [5.4]	206 [4.4]	113 [6.5]	13 [3.4]	5 [4.1]	131 [5.9]
Total	3354 [100.0]	1046 [100.0]	316 [100.0]	4716 [100.0]	1728 [100.0]	383 [100.0]	123 [100.0]	2234 [100.0]

Source: Field survey, 2007/2008

Most of the working households work in a service related jobs and sales. Of the total households in the urban area, 28.8 percent are involved in the service related sector whereas within the ethnicity, the percentage of involvement are 42.1 percent of the Chinese, 33.1 percent of the Indians and 24.1 percent of the Malays. A similar structure is observed in the rural area whereby the services being the most important sector. It is shown that the percentage of the Malays in the rural that involved in the agriculture and fishery related works are higher than the Chinese and the

Indian. In contrast, the Chinese and Indian have greater involvement in the business sector compared to the Malays (refer Table VII).

Table 7 : Distribution of Working Household by Occupational Category

Occupational Category	Urban				Rural			
	Malay	Chinese	Indian	Total	Malay	Chinese	Indian	Total
Senior Officer & Manager	260 [7.9]	86 [8.2]	11 [3.4]	357 [7.7]	65 [3.9]	13 [3.4]	0 [0.0]	78 [3.6]
Professional	683 [20.7]	195 [18.6]	57 [17.8]	935 [20.1]	186 [11.1]	28 [7.3]	10 [8.0]	224 [10.2]
Technician & Associate Professionals	297 [9.0]	87 [8.3]	22 [6.9]	406 [8.7]	126 [7.5]	17 [4.5]	6 [4.8]	149 [6.8]
Clerical Employees	474 [14.4]	72 [6.9]	28 [8.8]	574 [12.3]	134 [8.0]	23 [6.0]	9 [7.2]	166 [7.6]
Service & Selling Staff	795 [24.1]	441 [42.1]	106 [33.1]	1342 [28.8]	385 [22.9]	172 [45.0]	40 [32.0]	597 [27.3]
Agriculture & Fishery Worker	62 [1.9]	14 [1.3]	7 [2.2]	83 [1.8]	355 [21.1]	46 [12.0]	21 [16.8]	422 [19.3]
Craft & Trade Related Worker	33 [1.0]	8 [0.8]	1 [0.3]	42 [0.9]	17 [1.0]	12 [3.1]	2 [1.6]	31 [1.4]
Plant, Machine & Installation Operator	376 [11.4]	54 [5.2]	50 [15.6]	480 [10.3]	171 [10.2]	25 [6.5]	19 [15.2]	215 [9.8]
Elementary Occupational	312 [9.5]	91 [8.7]	38 [11.9]	441 [9.5]	243 [14.4]	46 [12.0]	18 [14.4]	307 [14.0]
Total	3292 [100.0]	1048 [100.0]	320 [100.0]	4660 [100.0]	1682 [100.0]	382 [100.0]	125 [100.0]	2189 [100.0]

Source: Field survey, 2007/2008

Distribution of Household Income

Table VIII shows mean household income ratio that reflects the distribution of household income in the sample. The mean rural household income is lower than the urban as shown by the ratio of 0.6378. The mean household income for the less-developed region is 78.35 percent of the developed region. While the mean household income for the North and the South is almost equal with the ratio of 0.9723. It is also observed that the mean household income of the Malays is higher than that of the Indian but lower than the Chinese.

Table 8 : Mean Household Income Ratio by Location, Region, Economic Status, Ethnicity and Gender

	Mean Household Income Ratio
Location	
Rural-Urban	0.6378
Economic Status	
Less Developed – Developed	0.7835
Region	
East – Central	0.5789
North – Central	0.8535
South – Central	0.8778
East – South	0.6596
North – South	0.9723
East – North	0.6784
Ethnicity	
Malay – Chinese	0.8210
Indian – Chinese	0.7278
Malay – Indian	1.129
Head of Household	
Female – Male	0.7626

Source: Field survey, 2007/2008

Table IX shows the percentage of income owned by the group of households. It is shown that the 20 percent highest income group receive 44.1 percent of total income. While the percentage income received by the 40 percent middle and 40 percent lowest income groups are 38.9 percent and 17.0 percent respectively. This demonstrates inequality in income distribution.

Table 9: Percentage of Household Income by Group

Group of Household	Percentage of Income (%)
20 percent highest	44.1
40 percent middle	38.9
40 percent lowest	17.0

Source: Field survey, 2007/2008

Table 10 shows Gini coefficient by gender, ethnicity, location and region. The overall Gini coefficient is 0.384. Income distribution is more unequal amongst the male headed households as compared to the females headed households as indicated by the Gini coefficient. Income distribution also seems to be more unequal amongst the Malays, the rural areas and the Central region. The most unequal income distribution is found to be in the East region with Gini index of 0.417. The rural area also records high Gini index of 0.402. This demonstrates that income distribution is more unequal for the lower income groups that may due to more unequal jobs distribution.

Table 10 : Gini Coefficient by Gender, Ethnicity, Location and Region

	Total Household	Gini Coefficient
Gender		
Man	3,775	0.3822
Woman	227	0.3263
Ethnicity		
Malay	2,819	0.3862
Chinese	912	0.3648
Indian	272	0.3734
Location		
Urban	2,749	0.3584
Rural	1,254	0.4021
Region		
North	1,071	0.3685
South	780	0.3692
Central	1,513	0.3628
East	639	0.4167
Overall	4002	0.3838

Note : N = 4002 (Missing Value =1)

Formula for Gini Coefficient: $G = \sum P_i Q_{i+1} - \sum P_i Q_{i-1}$

Source : Field survey 2007/2008

Human Capital and Income Distribution

Results from estimation of regression model show that all independent variables significantly determine household percentage income. The result shows that human capital variables like education, training, experience and healthy lifestyle are significant and positively related to households percentage income; hence reducing income inequality amongst the households. The result also demonstrates that the urban households have higher percentage income compared to the rural. The

percentage income of the Malays and Chinese are also significantly higher than the Indians. When two other variables are added to the model, the significant levels of the variables are still remained. Head of household who are involved in the service sector and are knowledge workers receive higher percentage income (refer Table XI).

Table 11: Estimation Result of Regression Model

Independent Variable	1	2
Constant	-.033 (-11.787)***	-.024 (-8.013)***
(a) Human Capital		
Year of schooling of working Household (MYSWP)	.003 (20.007)***	.002 (12.922)***
Training period of working Household (MTTWP)	.006 (8.537)***	.005 (6.322)***
Working experience of working household (MExp)	.000 (6.962)***	.000 (5.377)***
Lifestyle of working household (MLWP)	.002 (4.522)***	.002 (4.165)***
(b) Demographic & Ethnicity		
Urban/Rural (DU)	.006 (7.656)***	.005 (6.035)***
Malay (DM)	.002 (1.850)*	.002 (1.302)
Chinese (DC)	.008 (6.095)***	.008 (5.538)***
(c) Sector and Occupational Category		
Services Workers (DS)		.001 (1.983)**
Knowledge Workers (DKW)		.009 (10.724)***
Adjusted R ²	0.190	0.217
R ²	0.192	0.219
Overall F	125.498***	106.455***
N	3709	3424

Note: *** Significant at 1% significance level

** Significant at 5% significance level

* Significant at 10% significance level

6. Conclusion

The Malaysian economy has steadily grown at remarkably high rate since independence except for few periods during economic turbulence. Nevertheless, income distribution has still become the main issue and agenda in Malaysian economic development. Studies in the past were rarely focussing on determinants of income distribution but rather looking merely at the trend of income inequality using the government official data. This study attempts to identify determinants of income inequality in particular the human capital variables using primary data. Apart from this, several indicators of income inequality are calculated like mean ratio, income percentage, Lorenz curve and Gini coefficient.

The results from this study confirm the pattern of income distribution in Malaysia that was generated from the official data. What is more important is the study shows that all cooperated human capital variables significantly determine the percentage of household income which reflects income distribution. Other variables like demography and ethnicity also important when analysing income distribution. It is shown that the urban area and the Chinese gain higher income as compared respectively to the rural, the Malays and the Indians.

Based on the results from this study, we suggest that enhancement in human capital attainment amongst the household members must be done continuously. One of the measures is life-long education. Another important aspect is to educate the household members with a healthy life style that will subsequently contribute to household income. One of the major findings from the study is that the urban dwellers and the Chinese benefit more from the Malaysian economic growth. This is very much associated with their involvement in more productive activities like the business and service related activities. Therefore, other segment of the society like the rural and non-Chinese households must get involved in higher value added activities.

The services sector seems to generate higher household income as indicated by the regression result. This indicates the capability of this sector to generate higher value-added activities and this is in tandem with increasingly important of this sector in the Malaysian economy.

The ability of knowledge workers to gain higher income is undoubted. This is very much associated with their higher skill and productivity. Therefore, enhancing human capital attainment through education and training amongst the household members is very much needed if they want to be knowledge workers which subsequently will raise households income and lessen the income inequality.

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Accelerating and Growth Effects of Trade Openness across OIC Countries

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Accelerating and growth effect of trade openness are controversial subjects that has been subjected to a whole literature. This paper investigates whether trade openness accelerates income per capita convergence process across OIC countries. For this purpose, we used convergence-growth equation that include three trade openness measures i.e. intra-trade openness, extra(outside)-trade openness and overall trade openness and dynamic GMM-SYS panel data estimator. We find that growth effect of trade openness varies by different openness proxies and by income groups. Coefficients of openness proxies show that growth effect of extra (outside)-trade openness is greater than intra- trade openness. Our results also show that overall openness trade and intra-openness trade proxies have dampened GDP per capita convergence process. But, extra (outside)-trade openness has accelerated this process.

1. Introduction

One of the oldest controversies facing economists on economic growth issues is income convergence. Income convergence is one of the outcomes of Solow (1956) neoclassical growth model. This model is based on five basic assumptions, i.e. exogenous technology and saving rates, homogenous labor, diminishing return for factors, perfect competition, and closed economy. In neoclassical growth theory, the main endogenous source of output growth is capital accumulation. In this model, the substitution possibility and diminishing return force the economy to converge to the equilibrium capital and income level (Islam, 2003, p: 313).

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Solow model predicts that given the saving, population growth, and technology rates, economies will converge to unique equilibrium if the parameters be same across them, and will converge to separate equilibrium levels if the parameters be different across them. The former and latter are named absolute convergence and conditional convergence, respectively. Another concept of income convergence is sigma convergence that was associated the disparity of per capita income across a group of countries or regions.

Two main questions exist on income convergence debate. First, are countries converging to same (or different) steady state(s)? In other word, are income gaps decreasing across countries? Second, which factors cause and accelerate per capita income convergence process?

For answer to first question, economists use different ways, e.g. β -convergence, sigma convergence, club convergence, stochastic convergence, and so on. A large body of empirical researches on income convergence has focused on first question. One of the most robust empirical results on first question is, despite, the countries converge to themselves steady-states (conditional convergence), but, income gaps are increasing across countries. In other word, differences in per capita income initial values are smaller than differences in country-specific steady state values (see Durlauf et al (2005), and Grier et al (2007).

For answer to second question, economists believe that observed convergence in income per capita may be the results of three different mechanisms: convergence due to capital accumulation, convergence due to technology transfer and convergence due to a combination of both. But, economists do not able to discriminate between these three hypotheses. In the theoretical and empirical studies, some factors have identified that can affect on income convergence process. One of the factors is international trade³ that have attracted the attention of some economists and produced a massive literature. In the theoretical literature, international trade can affects income per capita convergence process through factor price, factor accumulation, and technology spillovers and the effect can be positive or negative. Factor price equalization theorem (FPE) by Samuelson (1948) provides a theoretical framework for the effect of international trade on the equalization of

³ Another factor is financial development. See Aghion et al (2005)

income of identical factors across economies. Rassekh and Tompson(1993) has named it micro convergence.

Baldwin et al (2001), Baldwin (2002) and Nakajima (2003) show that divergence and convergence processes may occur at different stage of trade liberalization or among different groups of countries. For example, Baldwin (2002) show that according to the Stolper - Samuelson theorem, trade through raising (reducing) wages in poor (rich) countries lead to income convergence and through reducing (raising) capital return lead to divergence income. Young (1991) show that trade cause poor countries specialized in sectors with little potential for technology growth and scale economies and may fall in to poverty trap. Prebisch (1950) argue that permanent decreases in the international prices of raw materials and primary commodities would lead to more profound differences between developed and developing countries. Helpman (1999, p: 25) notes that international trade is major carriers of substantial international spillovers associated with investment in research and development and facilitates the exchange of intangible ideas. Slougher (2001) by difference – in – difference method finds that various post-1945 trade liberalization policies lead to income divergence. Parikh and Shibata (2004) have examined the effect of trade liberalization on income convergence in developing countries. The results of their study show trade liberalization has accelerated income per capita across Asian and Latin American countries and has diverged income per capita across African countries.

As see above, the growth and accelerating effects of international trade has been as a controversial debates because: i) findings from theoretical models and empirical investigations show no determinate linkage from trade to income convergence. ii) Various trade policies that have been implemented across countries have led to different outcomes. iii) As a whole, as has been mentioned by Giles and Stroomer (2006, P: 885-886) "the results on these debates have been mixed, depending upon the definition of convergence that is adopted the choice of statistical techniques, the type of data, the time period in question, and the level of development of countries under consideration". Hence, the relationship between trade and income convergence becomes an empirical question. In this paper, we are going to examine the growth and acceleration effects of international trade across the organization of Islamic

Conference (OIC hereafter) countries. OIC countries include 57 developing countries that the more of them have specialized in exporting primary and fuels products. According to existing data, fuel and non-fuel primary commodities account for more than 50 percent of merchandise export's 40 of 52 OIC members.

According to literature, specialization in exporting primary products is harmful for economic performance (see Prebisch (1950), Sachs and Warner (1997), Dowrick and Golley (2004)). Hence, in this paper, we will attempt that compare the accelerating and growth effects of inter-group trade (trade relationship OIC members with another OIC members) (INTRA hereafter) and rest-group trade (trade relationship OIC members with rest OIC members) (REST hereafter) across OIC countries.

The remainder of paper is set out as follows. Section 2 briefly gives an economic overview of the OIC countries. Section 3 describes the data, their source and our chosen methodology to estimation model. Section 4 presents the empirical results. Section 5 concludes.

2. OIC Countries: An Economic Overview

The OIC as group set up in 1969 and includes 57 Islamic countries in 2009. It have dispersed over a large geographical region, i.e. the Middle East and North Africa, West, and southern Africa, central Asia, Southeast Asia, the Indian Sub continent and South America.

The countries have one common denominator among, Islam, but they are a diverse group of countries encompassing remarkable differences in geography, history, language, political system, and culture (Ghani, 2007, P: 41).

Despite, OIC countries account for one sixth of the world land area and more than one fifth of its population, but, their share of world GDP and merchandise export in term of current US dollars is 6.6% and 9.8% respectively (OIC economic performance and human development, 2008, PP: 1-2).

22 OIC member countries are considered as developing countries that more than 50 percent of the exports are non-oil primary commodities,

mostly agricultural commodities. On the other hand, 17 OIC countries are classified as fuel – exporting countries, e.g. Iran, Saudi Arabia, and...⁴ Therefore, the prospect of growth and the development of these countries are dependent on producing and exporting of only primary goods oil or gas. According to the recent World Bank classification, 22 OIC member countries are considered as heavily indebted poor countries, potentially eligible to receive debt relief. Kuran (2004) has believed that the decline in Muslim countries' economic development started since the 18th century. Ghani (2007, p: 42) has believed that in order to explain this decline, any one need to examine the political systems of absolute central authority, tribalism and guilds, institutional and governance quality, incidence of conflicts, and the discrimination to seek innovation during the period.

3. Data, Variables, and Econometric Methodology

3.1. Data and sample

The data for this study have been taken from OIC countries web site. Originally 57 OIC countries was selected but after screening process, 37 countries were chosen for which data on most of the variable were available for at least 25 years, i.e. 1980-2004.

We focus on non-overlapping 5-year average for each country as our unit of observation, so we obtain a total of five panels over the 1980-2004.

3.2. Variables

In order to analyze the effect of international trade openness on economic growth and convergence process, we use a proxy for openness trade. We also use physical investment (as a share of GDP), a proxy for human capital, population growth, and the log of GDP per capita and capital per capita in the first year of the any sub period as control variables.

⁴ One quarter of the World's known crude-oil reserves are located in Saudi Arabia. Iran has 15% of the world's total of natural gas reserves. Algeria, Morocco, Tunisia, Jordan, and the Syrian account for about one third of the world's phosphate production and Morocco itself has more than 30% of the phosphate rock and 40% of its phosphate acid trade. Iran and Jordan have potash, Egypt, Syria, and Iran have respectively cotton, tobacco, iron, coal, and ammonia. (Guetat and Serranito, 2007)

In order to capture different channels that openness trade affects on economic growth, we used three openness proxies. The first one is the ratio to GDP of trade, i.e. export plus import to GDP (open hereafter). The second indicator that measures the trade within OIC countries is export to OIC countries plus import from OIC countries to GDP (intra open hereafter) and the third indicator that measures the trade of OIC countries with rest countries group is export to rest OIC countries group plus import from rest OIC countries group (rest open hereafter).

Human capital has been proxied by Secondary School Enrolment. Human capital affects on economic growth through two channels: the domestic innovation component and the technology diffusion component, which directly enhance a country's ability to innovate and indirectly through technology adoption, i.e. to foster technology “catch-up” with the leading country (Engelbrecht, 2003: 40). Hence, we expect it to be positively correlated with economic growth.

The log of GDP per capita in the first year of the any sub period captures the advantage of backwardness, emphasized by Abramowitz (1986). A negative μ_y is interpreted as supported for the convergence hypothesis because it would mean that after controlling for variable that influence growth, those with lower income per capita have grown faster over the sample period.

3.3. Model specification

In order to examine growth effect of openness trade, we have specified following equation:

$$gy_{i,t} = \eta_i + \xi + \mu_y \ln(y_{i,t-5}) + \gamma_y openness_{i,t} + \theta_y X_{i,t} + ILD_i + \varepsilon_{i,t} \quad (1)$$

Where $gy_{i,t}$ is GDP per capita growth in country i in period t , $X_{i,t}$ is a row vector of determination of economic growth or control variables. η_i , $\xi_{i,t}$ and $\varepsilon_{i,t}$ are country specific effect, period specific effect, and error term. $\ln(y_{i,t-5})$ is the log of GDP per capita in the first year of the any sub period. ILD_i is income level dummy variables. According to World Bank (2008) classification, we have classified our sample to four

groups' i.e. high income (high, hereafter), upper-middle income (upmid, hereafter), lower-middle income (lowmid, hereafter), and low income countries. For example, for high income group, $ILD_i=1$ and zero for other groups.

In order to find out whether openness trade is convergence factor, we have used two models. First model is following:

$$gy_{i,t} = \eta_i + \xi_t + \mu_y \ln(y_{i,t-s}) + \gamma_y openness_{i,t} + \gamma(openness_{i,t} * ILD_i) + \theta_y X_{i,t} + ILD_i + v_{i,t} \quad (2)$$

According to equation (2), when international openness is converging factor that γ be greater for low income countries than high income group.

Another model that has been used in this paper is as following:

$$gy_{i,t} = \eta_i + \xi_t + \mu_y \ln(y_{i,t-s}) + \gamma_y openness_{i,t} + \delta[openness_{i,t} * \ln(y_{i,t-s})] + \theta_y X_{i,t} + ILD_i + v_{i,t} \quad (3)$$

In equation (3), we added interaction term $-[openness_{i,t} * \ln(y_{i,t-s})]$ in equation (1). Accelerating effect of openness trade is represented by the interaction term which captures the effect of the openness trade on convergence process:

$$\beta_i = \frac{\partial Gy_{i,t}}{\partial \ln(y_{i,t-s})} = \mu_y + \delta openness_{i,t} \quad \text{where, } Gy_{i,t} = \frac{1}{5} [\ln(y_{i,t}) - \ln(y_{i,t-s})] \quad (4)$$

As equation (4) shows, country-specific convergence parameters depend on trade openness. Trade openness accelerates convergence process if only if $\delta < 0$.

3.4. Econometric methodology

In empirical investigation, in order to estimation of above equations, cross section and panel data approaches are used.

Islam (1995) and Caselli et al (1996) argued that using the pure cross-section analyses for estimating above equations give inconsistent results because two sources of inconsistency: omitted variable or correlated individual effects and endogenous explanatory variables. Following Caselli, et al. (1996), employing a GMM procedure eliminates the inconsistencies by taking first differences in the dynamic model and instrumenting all the right-hand side variables. In the first-differenced equations using lagged levels under the assumption that the time-varying disturbances in the original levels equations are not serially correlated. In the empirical work on cross-country growth, two kinds of GMM panel estimator namely first-differenced and system-GMM are employed. Arrelano & Bound (1991) proposed first-differenced GMM estimator and used lags of dependent variables as instrumental variables. But Blundell and Bound (1998) and Bound et al. (1995) showed that the lags of the level are weak instrument when the regression equation is in difference. For example, Bound, et al. (1995) say "When the individual series have near unit root properties, the instruments available for the equations in first-difference are likely to be weak instrument variable estimator can be subject to serious finite sample biases where the instrument used are weak. To solve the problem, Blundell & Bound (1998) proposed GMM-system estimator which combines in a system the regression in differences with the regression in levels. The result of their simulation shows that when the coefficient on the lagged dependent variable is close to 1, the efficiency of using the GMM-System estimator is greatly improved. The consistency of GMM estimator depends on the assumptions about the validity of the instrument and error term. Therefore, we use two kinds of test: instruments validity test and no-serial correlation in error term test. To test instrument validity, we use Sargan test. The null hypothesis of the Sargan test is as follows:

H_0 : Over – identifying restrictions are valid.

For the first and second order serial correlation of the differenced residuals, we use m_j Statistic where j is the order of autocorrelation.

This statistic has an asymptotically normal distribution $N(0, 1)$.

4. Results

In order to investigate of growth effect of international trade, we have estimated model (1). The results have been presented in table (1). As seen, in all cases, all variables, except dummy variables, are treated as endogenous and their lags levels are used as instruments for the level and difference equations. The results of dynamic GMM panel tests, i.e. Sargan and serial correlation tests respectively, show that: i) the validity of instruments is satisfied and ii) the second serial correlation problem has been rejected.

The coefficient of initial GDP per capita show that conditional convergence hypothesis across OIC countries is accepted. Assuming *ceteris paribus*, it takes 12 year for at least 50 percent of the gap between current GDP per capita level and its steady state to be eliminated. This show that OIC countries lay around own steady states but this level is different across them.

Other results show that openness trade, physical capital and human capital have positive effect on growth whereas, population growth has negative effect. Comparison of openness trade proxies coefficients show all of them have positive effect on GDP per capita growth but, that growth effect of open and rest open is greater than intra open. One possible explanation is that the trade within OIC countries (intra trade) contains more primary goods than open and rest open.

In order to examination of accelerating effect of openness trade, we have estimated model (2) and (3) that details of results have been summarized in table 2 and 3 respectively.

As seen in table 2, the accelerating effect of open, intra open is greater for high income and upmid income countries group. This effect for rest open is greater for high and lowmid income countries groups.

In order to show that our results are robust, we estimated model (3). The results have been presented in table 3. As seen in the table, coefficients of interact terms of (open* LY) and (intra open* LY) are positive that show these variables i.e. open and intra open have reduced GDP per capita convergence process, but, coefficient of interact term of (rest open*LY) is negative that show this variable accelerate GDP per capita

convergence process. In other word, growth effects of an increase in open and intra open depend positively on the initial level development and growth effect of an increase in rest open depend negatively on the initial level development.

5. Concluding

The literature on the trade and growth relationship shows that it is ambiguous. Besides, as has mentioned in literature, convergence-accelerating effect of international trade in theoretical models and empirical investigations show no determinate linkage. But, one of the robustness results on latter is that international trade has promoted income per capita convergence process across countries until 1980, but, since 1980, has dampened this process(see dowrick & Golley(2004), Rassekh(2007), Delong & Dowrick(2003)).

In this paper, we have examined growth and accelerating effects of international trade among OIC countries that most of them have specialized in fuel and primary goods. For this purpose, we have used convergence-growth equation, GMM-SYS estimator developed for dynamic models of panel data that were introduced by Blundell and Bond(1998), and three proxies for openness trade variables, namely open(export plus import to GDP), intra open(export to OIC countries plus import from OIC countries to GDP), and rest open(export to rest countries OIC group plus import from rest OIC countries group). Our empirical work finds that: i) trade openness is associated with faster growth in generally, but, more importantly, that this effect varies by different openness proxies and by income groups. Our findings on coefficients of openness proxies show that growth effect of rest open is greater than intra open. This result show that trade of primary and fuel products was less beneficial for growth. Coefficients on openness proxies at different income groups show that trade openness has been harmful for the growth performance of the low income countries group. In contrast, other income groups have benefited trade openness. Upper – middle income countries group among other income groups have attracted most benefits of intra and rest trade openness. ii) Open and intra open variables have dampened GDP per capita convergence process. But, rest open has accelerated this process. Our findings show despite open and intra open variables have prevented convergence

process, but none of them have not diverged GDP per capita of OIC countries than their steady state levels.

Table1. Panel estimates of the growth equation (1)

Variables	Trade Openness proxies		
	open	Intra open	Rest open
Initial GDP per capita (in logs)	-0.05*	-0.04*	-0.06*
Investment (%GDP, in logs)	0.02*	0.03*	0.05*
Human capital investment (in logs)	0.003***	-0.004	0.02*
Population growth (in logs)	-0.02*	-0.03*	0.003
Openness variables			
Trade openness proxies (in logs)	0.018*	0.008**	0.016*
Period shifts			
1985-1989 period shift	0.05*	-0.03***	0.03**
1990-1994 period shift	0.05*	-0.03***	0.03*
1995-1999 period shift	0.06*	-0.02	0.04**
2000-2004 period shift	0.07*	-0.005	0.06*
Income level dummies			
high	0.12*	0.15*	0.12*
upmid	0.03	0.05*	0.03***
lowmid	-0.004	0.03***	-0.02**
constant	0.2*	0.2***	0.3*
Countries/observations	37/157	37/157	37/155
Specification tests(p-values)			
First. order serial correlation test	0.02	0.003	0.03
Second. order serial correlation test	0.8	0.3	0.7
Sargan test	0.8	0.7	0.7

1) Dependent variable: average of Growth rate of real GDP per capita.

2) Cross-country panel data consisting of non-overlapping five-year averages spanning 1980-2004.

3) *, **, and *** denotes statistical significance at the 1, 5, and 10 percent level respectively.

4) Estimation method: GMM-SYS estimator (Arellano and Bover, 1995; Blundell and Bond, 1998).

5) In all regressions, we treat right-hand variables (except period shifts and income level dummies variables) as endogenous in all regressions and instrument them using from lags t-3 and t-2 in the first-differenced and t-1 and t-2 in the level equations.

6) Source: Author's calculations.

Table2. Panel estimates of the growth equation (2)

Variables	Trade Openness proxies		
	open	Intra open	Rest open
Initial GDP per capita (in logs)	-0.01*	-0.15*	-0.1*
Investment (%GDP, in logs)	0.04*	0.04*	0.03*
Human capital investment (in logs)	0.005	0.01***	0.03
Population growth (in logs)	-0.01	-0.02***	0.01
Openness variables			
Trade openness proxies (in logs)	-0.03*	-0.03*	-0.04*
Interaction term			
Openness proxies* high	0.2*	-0.01	0.06*
Openness proxies* upmiddle	0.1**	0.09*	0.1*
Openness proxies* middle	0.03*	0.03*	0.06*
Period shifts			
1985-1989 period shift	0.04*	-0.04	0.05**
1990-1994 period shift	0.04*	-0.03	0.05**
1995-1999 period shift	0.05*	-0.01	0.06*
2000-2004 period shift	0.06*	-0.004	0.08*
Income level dummies			
high	-0.8*	0.5*	0.02
upmid	-0.3*	-0.01	-0.3*
lowmid	-0.1*	0.07***	-0.2**
constant	0.1*	0.9*	0.8*
Countries/observations	37/157	37/157	37/155
Specification tests(p-values)			
First. order serial correlation test	0.01	0.02	0.06
Second. order serial correlation test	0.3	0.1	0.4
Sargan test	0.15	0.4	0.12

1) Dependent variable: average of Growth rate of real GDP per capita.

2) Cross-country panel data consisting of non-overlapping five-year averages spanning 1980-2004.

3) *, **, and *** denotes statistical significance at the 1, 5, and 10 percent level respectively.

4) Estimation method: GMM-SYS estimator (Arellano and Bover, 1995; Blundell and Bond, 1998).

5) In all regressions, we treat right-hand variables (except period shifts and income level dummies variables) as endogenous in all regressions and instrument them using from lags t-3 and t-2 in the first-differenced and t-1, t-2, and t-3 in the level equations.

6) Source: Author's calculations.

Table3. Panel estimates of the growth equation (3)

Variables	Trade Openness proxies		
	open	Intra open	Rest open
Initial GDP per capita (in logs)	-0.14*	-0.05*	0.07*
Investment (%GDP, in logs)	0.02*	0.04*	0.06*
Human capital investment (in logs)	0.01***	0.001	-0.001
Population growth (in logs)	-0.02***	-0.03*	0.01
Openness variables			
Trade openness proxies (in logs)	-0.07***	-0.04**	0.2*
Interaction term			
openness proxies* Initial GDP per capita	0.01**	0.008**	-0.03*
Period shifts			
1985-1989 period shift	0.04**	-0.01	0.01
1990-1994 period shift	0.05*	-0.01	0.02
1995-1999 period shift	0.05*	-0.002	0.04**
2000-2004 period shift	0.06*	0.005	0.05*
Income level dummies			
high	0.2*	0.09*	0.2*
upmid	0.03	0.04**	0.04*
lowmid	0.04**	0.008	0.02
constant	0.8*	0.2*	-0.7*
Countries/observations	37/157	37/157	37/155
Specification tests(p-values)			
First. order serial correlation test	0.01	0.002	0.01
Second. order serial correlation test	0.3	0.3	0.7
Sargan test	0.9	0.98	0.7

1) Dependent variable: average of Growth rate of real GDP per capita.

2) Cross-country panel data consisting of non-overlapping five-year averages spanning 1980-2004.

3) *, **, and *** denotes statistical significance at the 1, 5, and 10 percent level respectively.

4) Estimation method: GMM-SYS estimator (Arellano and Bover, 1995; Blundell and Bond, 1998).

5) In all regressions, we treat right-hand variables (except period shifts and income level dummies variables) as endogenous in all regressions and instrument them using from lags t-3 and t-2 in the first-differenced and t-2 in the level equations.

6) Source: Author's calculations.

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Economic Performance of the OIC Countries and the prospect of an Islamic Common Market

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This paper examines economic performance of the OIC member countries and analyzes the prospect of Islamic common market by analyzing trade data within a gravity model framework. There is scope of trade creation for OIC member countries if all impediments to trade and business can be eliminated. The paper also examines various sub-regional grouping within the context of gravity model, and finds that D8 comprising eight bigger OIC member countries is trade creating. For example, two countries in D8 block would trade 4.28 times more among themselves than two otherwise-similar country in outside the block would. The paper suggests a number of policy parameters which if followed will lead to more trade among member countries. The issue of Islamic common market should be examined further in light of new data and changed global perspectives. This paper is complements and extends Hassan (1999, 2009) and Hassan and Islam (2001), where similar conclusions were derived and policies were suggested.

1. Introduction

Islamic countries are heterogeneous with respect to economic, political, ethnic, social and cultural realms. However, all are bound by Islam. This diversity could be a major hurdle to Islamic Common Market (ICM). Such roadblock could be turned into economic opportunity through

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objective realities, strong political will and irreversible commitment. The emergence of ICM would harness free flow of goods and services, capital, entrepreneurship, labor and technology among member nations.

Like other successful trading blocks, OIC countries have cultural and socio-economic homogeneity. However, they are a mixture of low income, middle-income and high income countries. Apart from trade liberalization successful integration of policy-determined barriers (e.g. tariffs, quotas and other non-tariff barriers) and natural barriers (e.g. transport costs, linguistic and institutional differences) a prerequisite for inclusive analysis of feasibility and prospective economic gains from economic cooperation of OIC member countries. The study will have important implications for policy making about the future course in economic cooperation among the OIC member countries. Profound empirical research have yielded a wealth of knowledge, insightful economic analysis, practicable policy guidelines and a compelling evidence for justifying the need for ICM [Alatas (1987); Nasser (1988); Mdaghri (1988); Zaman(1988); Siddiqui (1993); Shakweer (1993); Sadeq (1993); Syed (1999); SESRIC (2008, 2000, 2003), Shalaby (1988); Cindoruk (1988, 1992); Ahmad (1995); Anjum (1996); Ahmed and Urugel (1996); Ariff (1998); Naqvi (1998); Mehanna and Hassan (2002); Hassan (2003a,b); Hassan and Islam (2001); Hassan (2001); Hassan (1999); Hassan (1998a,b) Hassan (2001, 2009)]. No research, however, has formally analyzed trade creation and diversion among OIC member countries. The low level of trade is largely attributable to inadequate trade information, the tariff and non-tariff barriers, unstable and narrow export bases, and over reliance on OIC non-member countries for trade. This has exacerbated long-term economic relations among OIC member countries. Moreover, globalization and assimilation of OIC members into the world market have chipped away the intra-OIC trade volume as the trade volume with the rest of the world grows astronomically.

Following introduction, we provide detailed trade statistics among the OIC countries in Section 2. Section 3 discusses various existing economic blocks among the OIC countries. In Section 4, we present a gravity model type analysis of potential benefits of forming economic groupings among the OIC member countries. In Section 4, we provide the results of a gravity model of trade creating and trade diverting potentials of existing and future economic blocks of the OIC countries.

We discuss recommendations and policy options for establishing Islamic common market in Section 5.

2. Economic Performance of the OIC Countries

2.1. Economic Growth of OIC Countries

The economic performance of the OIC is examined in 3 sub-groups in order to illustrate the developments within the OIC better. The first group is classified as the Least Developed Members of the OIC, which will be named, hereafter, as the LDC group of OIC. This group is made up of those members of the OIC which are designated as least developed by the United Nations, namely Afghanistan, Bangladesh, Benin, Burkina Faso, Chad, Comoros, Djibouti, Gambia, Guinea, Guinea-Bissau, Maldives, Mali, Mauritania, Mozambique, Niger, Senegal, Sierra Leone, Somalia, Sudan, Togo, Uganda and Yemen. The second group includes, generally, the middle-income OIC countries, which will be named, hereafter, as the middle-income (MDC) group of OIC. These are Albania, Cameroon, Côte d'Ivoire, Egypt, Guyana, Indonesia, Jordan, Kazakhstan, Kyrgyz Rep, Lebanon, Malaysia, Morocco, Pakistan, Palestine, Surinam, Syria, Tajikistan, Tunisia, Turkey, and Uzbekistan. The third group comprises the oil-exporting (FEC) members of the OIC, namely Algeria, Azerbaijan, Bahrain, Brunei, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Oman, Qatar, Saudi Arabia, Turkmenistan, and the United Arab Emirates (U.A.E.).

Real GDP, GDP per capita and GDP growth rates of OIC countries are given in Table 2. One striking result of these tables is that OIC GDP contribution to total world GDP is very low (4.7% of total world GDP for the period 1980-2007). Among the OIC countries, MDC performance is better than FEC.

During the period under consideration, the OIC countries' total population grew at nearly 2.2 percent per annum whereas the world population grew at 1.5 percent per annum (see Table 3). OIC countries' population has been growing a higher rate than the rest of the world.⁴ When the effect of such a high rate of population growth on economic

⁴ This is typical of low income countries, which is not surprising because many of the OIC countries are considered low income countries.

growth is taken into account, the OIC's average per capita income turns out to be an average of \$1139 during the period 1980-2007. The real GDP per capita has steadily increased during the period because the real GDP has grown at a higher rate than the population (see panel C of Table 2). However, when these per capita GDP numbers for the OIC countries are compared with the world average, a significant gap is observed against the OIC group.

2.2. Sectoral Distribution of the Output of the OIC Countries

Table 4 provides sectoral distribution of output. From this table, we note that the services sector is an important source of income in almost all the OIC countries, irrespective of their levels of income and development (see panel D). Second, agriculture is observed to be an important activity mostly in the LDC group and industry in the oil-exporting group. However, the significance of industry in the oil-exporting group comes from oil production. Third, the manufacturing sector does not play a significant role in most of the OIC economies. Yet, in some OIC countries, particularly in the middle-income group, it is gaining importance.

2.3. Inflation of the OIC Countries

Inflation in high income countries decreased significantly from nearly 6.6 percent in the 1980s to 2.9 percent in the 1990s and further down to 2.6 percent in the 2000s (see Table 5). Inflation in OIC countries reached its peak values in the late 1990s because of the hyperinflation suffered by some members. Excluding hyperinflation years, OIC countries downed inflation from 16 percent in the 1980s and the 1990s to 6.4 percent in the 2000s. The MDC group has the highest inflation increase in the 1990s, but the group has decreased the level to one digit inflation rate.

2.4. Current Account and Reserve Position of the OIC Countries

Table 6 summarizes the current account balance, the international reserve position of the OIC countries, and the direct net trade in goods and services. Although, approximately, two thirds of the OIC countries had to cope with deficits in their current account balances in the 1980s and 1990s, the current account became positive in the 2000s due possibly to

compensating developments in their capital accounts. Also, OIC countries experienced improvement in their reserves during the 2000s due to the increase in MDC and FEC. However, the same levels of deficit in current account (and trade) are observed for LDC.

2.5. Total Outstanding External Debt and Foreign Direct Investment of the OIC Countries

Table 7 shows total debt and foreign direct investment. Regarding the total external debt, it stood from 414.6 in the 1980s to 626.1 billion US dollar in 2002s for OIC countries (a 51 percent increased), following a middle income countries pattern. The figures actually reflect the heavier burden of the external debts for OIC countries. Moreover, debt is still a heavy problem for the economies of the OIC countries mainly MDI.

The foreign direct investment is relatively low when it is compared to low income and middle income countries. Furthermore, the foreign direct investment is higher for the MDC group than the FEC and the LDC groups. Although FDI has significantly increased since the 1980s, the total FDI in OIC countries represent only 14 percent of middle income total FDI, suggesting that investors are allocating more money to non-OIC countries.

2.7. Aggregate Exports and Imports of the OIC Countries

Table 8 displays real import, export and trade as a percentage of GDP. The OIC countries' exports, equaling an average of \$774.7 billion, represent 9.4 percent of the world exports in the 2000s. This percentage was 10.8 percent in 1980s and decreased 7.3 percent in the 1990s. Furthermore, the same average indicates that OIC countries have increased their level of export by more than a 100% during the 2000s compared with 1980s and the 1990s. Meanwhile, the worldwide level of export has increased 55 percent, which shows that the OIC countries were able to benefit enough from the enlargement of the world trade in these years.

Figure 1 shows annual change in real export and import level. During the period under consideration, the highest rate of increase in world exports was recorded in 2004 whereas for the OIC export was the year 2000. OIC countries growth rate is highly correlated with world growth;

whenever there is an increase in the world export, the OIC has increased its level of export. This change is highly sensible to change in the world. Particularly in the 2000s, the world has experienced growth and the OIC countries have more than proportionally increased their levels. Nevertheless, in the 1980s the world declined in export level and OIC countries declined more than proportionally as well. This suggests that export activities in OIC countries are more affected by change in the world demand for merchandise.

Regarding the performances of the OIC sub-groups, all of them managed to accelerate their rates of export increase during the 2000s. After reaching peak levels in 2000, they could not preserve these high figures, and all of them suffered deceleration in their exports to a negative percentage change.⁵ Then they started a recovery process to cover the negative rate of change and get close again to the peak in 2000, at the end of the period under consideration, they realized rates of increase between 29.0 and 33.2 percent. The highest annual rate of increase in 2004 was observed in the FEC group amounting to 33.2 percent, followed by a 29.8 per cent annual increase in the MDC group, 29.0 per cent increase in the LDC group.

Among the OIC countries themselves, the FEC represent the highest share of the total export of the OIC countries, it ranged between 56 and 70 percent, then the MDC have the second share of the OIC total export and have a range between 27 and 48 percent, the lowest share was for the LDC which represent less than 3.3 percent during the period under consideration.

On the other hand, the OIC imports increased from an average of \$364.4 billion in the 1990s to an average of \$594.8 billion in the 2000s, which represents an increase of 63 percent. The OIC share in world imports followed the same trend, increasing 55 percent compared to the 1990s.

Panel B of Figure 1 shows real import growth change for both OIC countries and the world. Similar to the developments in the export side of the picture, the OIC countries' imports, in general, accelerated in the 1990s. More important, after 1988 the change of OIC import moves with the change of world import. During the period of our study and we have

⁵ The yearly change is available upon request

a negative rate of change for the MDC in year 2001. The same trend is also observed in other groups of countries. This period appears to be a very active year for world exports and imports. But a sharp slowing down is observed in year 2001. The general trend in the middle income countries is similar to that in the OIC countries.

As a result of the developments in exports and imports summarized above, the trade balance of the OIC countries fluctuated widely in recent years and recorded surpluses in the 2000s. Particularly, FEC have experienced high level of surpluses in the 2000s. Also, MDC have shown an average surplus in the 2000s after averaging deficit in the 1980s and 1990s.

Trade as a percentage of GDP also shows the same history. MDC and FEC have increased their level of trade whereas LDCs have not changed. There are a number of impediments to trade among the OIC countries. First, most of the OIC countries are poor. Second, there is lack of reliable and updated trade information among these countries. A database at the commodity level must be created so that it can be ascertained where excess demand exists in certain commodities and the member countries can trade that commodity among themselves. Third, there are limited opportunities for business contacts among the private bodies of the OIC countries. Exhibitions are not organized on a regular basis so that such contacts can be established. Fourth, there exists lack of marketing and distribution skills among the business people of the OIC countries. Products do not always meet buyer specification or international standard concerning packaging, color, style and environmental standard. Finally, the exportable of many OIC countries are not diversified. For many OIC countries, a small number of products account for significant amount of their exports.

3. Preferential Trading Agreements among OIC Countries

Contemporary and future regional economic blocks are based more on civilization identity as a sufficient condition while cultural and religious links play a pivotal role. EEC has evolved from covering 2 goods (coal and steel) among six countries (Belgium, Luxembourg, France, W. Germany, Italy and the Netherlands) to includes all Western European countries, Southern European Countries and is becoming a melting pot by including Eastern European countries as well Muslim-dominated but liberal Turkey.

Notably, European Community rests on the shared foundation of European Culture and Western Christianity. Chinese/Confucian oriented culture countries such as China, Hong Kong, Taiwan, Singapore and the overseas Chinese communities in other Asian countries experienced rapid economic expansion due to shared culture while Economic Cooperation Organization (ECO) consisting of ten non-Arab Muslim countries, (Iran, Pakistan, Turkey, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Afghanistan) all have common culture and religion. OIC has taken similar front in forging a common market. There are two major trading blocs; 1) OIC consisting strictly OIC member countries. 2) Other blocs in which OIC member countries participate.

3.1 Regional Groups within OIC Member Nations ONLY.

This consist of four major sub-groupings namely the Arab Maghreb Union (AMU), Council of Arab Economic Unity (CAEU), the Gulf Co-operation Council (GCC) and Economic Co-operation Organization (ECO). GCC was established with the sole aim of forming a customs union first and then a common market (See Table 1B). The ECO is specifically a preferential trade agreement where member countries afford each other a preferential treatment on some designated products from the member countries.

The AMU established Maghreb Economic Space to serve as a common market with free movement of labor, goods, services and energy products. AMU aims to foster economic and cultural relations, regional stability, increase trade exchanges, and a unified multilateral payments system through regional central banks. The most pressing priority of CAEU is to establish a customs union by removing all trade restrictions such as quotas and the restrictions on residence, employment and transport to ultimately establish a common market.

The GCC, like AMU, seeks to establish common market with free movement of goods, services and factors of production. To this end, GCC codify regulations in various fields including, inter-alia, economic policies and financial policies, agriculture, industry, trade policies, communications, education and culture, social and health affairs, information and tourism, and legislative/political and monetary policies to ensure regional security and stability. The ECO is essentially a preferential trade area working towards gradual and progressive removal

of custom tariffs and trade in order to expand intra- and inter-regional trade.

3.2 Regional Groups among OIC Member and Non-Member Nations:

This consists of fourteen regional economic blocs ((Table 1C) spread across Africa (nine) and Eurasia (five). They are the African Economic Community (AEC), the Central African Customs and Economic Union (UDEAC), the Common Market for Eastern and Southern Africa (COMESA), the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (WAEMU)- all from Africa, are designed to establish a common markets or economic and monetary unions; Others from Africa are Mano River Union (MRU) whose objective is to set up a customs union, The Indian Ocean Commission (IOC) which aims to establish a preferential trade area, and the Cross-Border Initiative (CBI) free trade area. In Euro-Asia, the Association of South East Asian Nations (ASEAN) and the Commonwealth of Independent States (CIS) aim to form customs union while the Black Sea Economic Co-operation (BSEC), the East Asian Economic Caucus (EAEC), and the South Asian Association for Regional Co-operation (SAARC) all seek a preferential trade area or a simple regional economic co-operation.

3.3. Lessons from OIC Countries Sub-regional Groupings:

The primary rational and justification for any economic integration is attainment of higher economic growth rate and development. Economic co-operation within OIC member states only and between OIC and other developing countries have registered mixed results with some being highly progressive and successful while others have recorded lackadaisical performance, perhaps because national policies have been rigidly allowed to reign over common economic bloc policies (Ahmed and Urugel, 1996; Farid, 1993).

In a concerted effort to achieve economic integration, OIC countries have faced three notable difficulties; (a) Effective co-ordination of regional investment. This is vital for reduction of cost of production through establishment of regional industries, equitable distribution of the integration gains and eventual creation of economic equilibrium among

member nations. (b) The need to compensate member countries which may suffer losses in the early stages. Any economic integration is meant to bridge the gapping economic divide among member states. Therefore, financial compensation measures should be put in place to compensate economically weaker members. However, with most of OIC members being developing economies, it's difficult to make such compensation without external help. (c) Gradual drive towards surrender of powers by member countries to take economic and social decisions at regional level. This would involve agreement to abolish all the tariffs on each other's exports, follow a common tariff policy towards their imports from the rest of the World, and allow a free flow of goods, services and factors of production. These major hindrances are exacerbated by conceptual and practical difficulties ranging from underdeveloped regional transport and communications network, trade and industrial protectionist policies, competitive industrial structures, natural resources of each member country, unrealistic exchange rates and in extreme cases, lack of basic economic statistical data to make reliable assessment of justification for regional economic integration. Instructively, more than two-thirds of the OIC member countries have been associated with regional and sub-regional economic co-operation and integration schemes, and, interestingly but understandably, the Least Developed OIC countries feature in many of them. This is a valuable indication of political will and inclination for advanced forms of economic integration and cooperation. To this end, initial endeavor has been directed towards a host of economic co-operation areas ranging from trade preferences, joint-ventures, co-ordination and harmonization of economic and monetary policies to financial co-operation. The next step should be geared towards attainment of two major goals; creation of powerful economic entities which can withstand the challenges posed by the emergence of huge economic blocs and; structural transformation of the OIC countries' economies to attain economic efficiency, social welfare and development co-operation and eventually, the dream of ICM would be easier to realize.

4. The Gravity Model of OIC Member Countries' Various Groupings

4.1. Methodology and Data

Gravity model offers a systematic framework for measuring the normal pattern of trade. International trade flows are determined by

comparative advantage, possibility of intra industry trade, transport cost etc. Trade policy may revise the normal trade flows. A gravity model of international trade estimates the trade flow as a function of variables that directly or indirectly affects the determinants of normal trade flow. We can use the gravity model to examine whether a lower magnitude of intra-OIC trade is a normal outcome or not.

The gravity model has long been used for empirical studies of the pattern of trade. Specifically, the volume of trade between two countries should increase with their real GDPs (the so-called gravity variable), since large countries should trade more than small ones, and with per capita incomes, since rich countries should trade more than poor ones. It should diminish with geographical distance because proximity reduces transportation and information costs. Since the dependent variable in the gravity model is bilateral trade between pairs of countries, each variable (other than distance) is entered in product form. Researchers then add dummy variables for participation in various preferential arrangements. If one finds a positive coefficient on the dummy variable indicating that two countries, both of which participate in the same preferential arrangement, trade more with one another than predicted by their incomes and distance, then the conclusion drawn is that the arrangement is trade creating for its members. If there is a negative coefficient on the dummy variable indicating that only one member of the pair participates in a particular preferential arrangement, this is taken as evidence of trade diversion vis-a-vis the rest of the world. (Bayomi and Eichengreen, 1995; Eigengreen and Irwin, 1996).

The typical gravity model specification relates bilateral trade to income, population (or per capita income), distance and congruity between the trading partners:⁶

$$TRADE_{i,j} = (GDP_i * GDP_j)^{\beta_1} (PCI_i * PCI_j)^{\beta_2} DISTANCE^{\beta_3} e^{(\sum \beta_h DUMMY_h)} v_{ij} \quad (1)$$

where $TRADE_{i,j}$ is the bilateral trade between country i and partner j at time t (measured in U.S. dollars), GDP is real gross domestic product (the so-called gravity variable), PCI is per capita income, $DISTANCE$ is distance between the two countries, and $DUMMIES$ are dummy variables that take into account other factors representing factors that

⁶ We will use a time varying version of the gravitational model. However, time subscript is not displayed for better clarity

affect trades (e.g. treaties, preferences, etc.), finally ν is an error (stochastic) term.

The traditional approach is to take natural log on both sides and use OLS to estimate the parameter:

$$\log(\text{TRADE}_{i,j}) = \beta_1 \log(\text{GDP}_i * \text{GDP}_j) + \beta_2 \log(\text{PCI}_i * \text{PCI}_j) + \beta_3 \log \text{DISTANCE} + \sum_h \beta_h \text{DUMMY}_h + \nu_{ij}$$

However, OLS has a few drawbacks. First, when there is no trade between two countries (trade=0), the observation cannot be used in the OLS estimation the model (e.g. that information is lost). Second, it suffers from heteroskedasticity. And more importantly, Santos, Silva and Tenreyro (2006) show that estimating the log-linearized equation by least squares (OLS) can lead to significant biases. They suggest that the model should be estimated in its multiplicative form:

$$\text{TRADE}_{i,j} = \exp \left(\beta_1 \log(\text{GDP}_i * \text{GDP}_j) + \beta_2 \log(\text{PCI}_i * \text{PCI}_j) + \beta_3 \log \text{DISTANCE} + \sum_h \beta_h \text{DUMMY}_h \right) \nu_{ij}$$

We estimate the model above using Poisson pseudo maximum likelihood. The main advantage is that zero observation can be used and Santos, Silva and Tenreyro (2006) shows that the model is well-behaved. We include the following set of dummies variables: *BORDER*: countries have common border, *SEA*: one of the partner has sea shore. As trade is expected to increase with size of domestic economy (*GDP*), per capita income (*PCI*), common border (*BORDER*) and sea shore (*SEA*) and to decline with distance (*DISTANCE*), $\beta_1, \beta_2, \beta_3$, and β_5 should be positive, whereas β_3 should be negative. We study the period 1980-2007 and the sub-period 1980-89, 1990-99, and 2000-07 and include time-year dummy variable to capture time-year fixed effect.

Annual data on bilateral trade flows among OIC countries has been collected from IMF's Direction of Trade Statistics. The rest of the data comes from the WDI database. Also, a substantial amount of data has also been collected by hand from different various documents.

Gravity model, however, has a number of weaknesses. One is that the coefficients on dummy variables for subgroups of countries will pick up all respects in which those countries differ in their trade performance that are not controlled for in the gravity equation. Dummy variables for preferential arrangements serve as a catch basin for omitted factors; and thus, we include a series of dummies to capture these arrangements. Another difficulty is the measurement of distance. The underlying theory appeals to transaction costs to trade, and in empirical implementation it is posited that such costs should rise with distance. But economic and geographic distances are not the same. Insofar as economic distance is mismeasured, its effects may be loaded into the dummy variables intended to capture the effects of regionalism. The third problem is the omission of third country effects. It is generally assumed that bilateral trade depends only on economic conditions in the two countries considered. In practice, however, bilateral trade will also depend upon competitiveness relative to other countries and markets. More generally, insofar as economic variables in third countries affect trade flows between other country pairs, gravity equations suffer from omitted-variables bias. Finally, the practice of pooling data for industrial and developing countries creates heterogeneity problem. While this maximizes degrees of freedom, the relationship between trade and economic characteristics may vary between the two groups of countries. The income elasticity of trade may be different at high and low levels of income or for different types of goods, for example. Transaction costs may have very different structures in countries with more and less articulated markets. Results based on heterogeneous cross sections may therefore suffer from subsample instability and heteroskedasticity (Bayomi and Eichengreen, 1995), which is partially alleviated using Eickert-White robust estimation.

4.2. Analysis of Empirical Results

A more systematic way of adjusting for the natural determinants of trade is by means of the gravity model. The assumptions of the model are that trade between two countries is proportionate to the product of their GNPs and the product of their per capita GNPs, an increasing function of adjacency (when two countries share a common land border), and inversely related to the distance between them. Dummy variables are added when both countries in a given pair belong to the same regional grouping. This provides a means of determining how much trade within

each region is due to factors common to trade throughout the world and how much remains to be explained by regional effects.

We have run gravity model estimations for the period 1980-2007 and the sub-periods 1980-89, 1990-99, and 2000-07. The results are reported in Tables 9 through 13. Table 9 presents descriptive statistics and correlation matrix of various explanatory variables used in the gravity model. We use regional block variables in our analysis in three ways. First, we use five regional blocks of countries, GCC, SAARC, AMU, ECO and D8, for these blocks represent a significant amount of trade among themselves. SAARC block consists of Bangladesh, India, Nepal and Bhutan, Pakistan, Sri Lanka and Maldives. GCC consists of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE. AMU block consists of Algeria, Mauritania, Morocco, Tunisia, whereas ECO consists of Iran, Pakistan and Turkey. D8 block consists of Bangladesh, Pakistan, Malaysia, Indonesia, Egypt, Iran, Turkey and Nigeria. Second, we form hypothetical trading block GCCAMUECO among the member countries of GCC, AMU and ECO blocks to examine the likely effects of such grouping if they were to materialize. Third, we add a term for each grouping in order to capture trade-diversion effects. These terms are indicated by a suffix "N", standing for trade with non-members of the grouping in question.

The regression results for the period 1980-2007 are presented in Table 14. To check the robustness of our results, we perform three regression runs: first, with the existing and hypothesized trading block countries; second, with existing trading block countries; finally, with the hypothesized trading block countries. We have 56 countries in our data set, so that there are 1540 data points ($=56*55/2$) for a given year times 28 years, we should theoretically have 43,120 data points. However, due to unavailability of data the final sample size is 26,904.⁷ The dependent variable in all regressions is the value of trade (imports plus exports), in log form, between pairs of countries.

We find all three standard gravity variables (GDP, GDP per capita, distance and contiguity) to be highly significant statistically at the 1% level of significance. All variables have their expected signs. The positive sign for GDP per capita variable suggests that, as the GDP per capita of a country improves, it trades more with its block member.

⁷ If we had used OLS the total number of observations would be 16,598

The estimated coefficient on the log of the product of the two countries' GDPs at about 0.642 indicates that trade increases with size but less than proportionately. This reflects the fact that small countries tend to be more dependent on trade than larger, more diversified ones. The estimated coefficient on the product of per capita GDPs is about 0.06, indicating that poorer countries trade less with each other. The coefficient on the log of distance is -0.7 indicating that when distance between two nonadjacent countries is higher by 1%, trade between them falls by 0.7%. The coefficient on adjacency, at .93, indicates that two countries sharing a common border trade roughly 2.5 [$\exp(.93)$] times as much as two otherwise similar countries.

If there were nothing to the notion of trade blocs, these basic variables would soak up most of the variation in bilateral trade flows, leaving little to attribute to a dummy variable indicating whether two countries are members of the same regional grouping. Variations in intra-regional trade would be due solely to the proximity of countries and their rates of economic growth. The dummy variables for all set of preference variables are statistically significant. However, only SAARC, SAARCN and ECON, ECON are robust to model specification while GCC, AMU, GCCAMUECO are not robust to model specification (e.g. their coefficients change signs when considering model 2, 3, 4 and 5).

In model 1, SAARC, GCC, and D8 are positive whereas ECON and GCCAMUECO are statistically significant and negative. These results indicate that SAARC, GCC, and D8 are trade creating, but ECO and the hypothetical GCCAMUECO blocks would not create trade among themselves. In addition, SAARCN, GCCN, AMUN, and D8N have a positive and significant coefficient indicating that it does not divert trade from its low cost outside producers. However, the coefficient of ECON is negative and significant indicating that it reduces trade from low-cost outside producers.

Only the ECO block within the OIC member countries would not be trade creating for all model specifications. Also, D8 dummy variable is statistically significant in model 1, indicating the preferential trading agreements among these countries would yield trade creation benefits. Two countries in D8 block would trade 4.276 [$\exp(1.436)$] times more among themselves than two otherwise-similar country outside the block would. Also, the D8 is likely to trade with non-members.

To check whether the results hold for the sup-periods, we estimate the parameters of the model for 3 different decades: 1980s, 1990s and 2000s. Table 11 presents the results for the 2000s. Although, the hypothesized signs are the same, the magnitudes of the coefficients are higher, suggesting a stronger relationship between trade, country and partner size and per capita levels; also, countries are more inclined to trade with neighbor countries. Moreover, AMUN, GCCAMUECO still are not robust to model specification.

Table 12 shows that the model coefficients are statistical significant and with the expected signs. Moreover, the GCC coefficient for each model has statistical positive sign, suggesting that in the 1990s, GCC countries were more likely to trade among them. AMU's coefficients are negative in two of the models, meaning that member countries would not be trade creating. Also, the fictitious agreement GCCAMUECO would have been trade creating in the 1990.

Finally, Table 13 presents the results for the 1980s. Contrary to the 1990s and the 2000s, the per-capita income variables have negative signs. Richer countries were unlikely to trade among them. Also, similar to the results for the 1990s, GCC countries as well as the hypothetical GCCAMUECO were more likely to trade among themselves, whereas AMU members were not likely to trade among themselves.

From the regressions, it is not clear whether GCCAMUECO would benefit trade since we find conflicting signs when considering different models.⁸ However, the signs are consistent positive in models 5 and 6 in all period samples. If two countries are members of GCCAMUECO, they would trade more than 1.4 [$\exp(0.329)$] times as much as would two otherwise-similar countries, and trade more less with non-GCCAMUECO countries.

⁸ GCCAMUECO by construction tend to be collinear with GCC, AMU and ECO, which could explain the negative sign in model specification 1.

5. Recommendation and Policy Options for Establishing an Islamic Common Market (ICM)

5.1. Economic Cooperation and Regionalism

A regional economic integration will progress economic and social welfare if: (1) there is a broad scope for production specialization among countries within a bloc; (2) tariffs and non-tariff barriers to intra-trade are substantially reduced; (3) tariffs and non-tariff barriers with third countries are lower after the formation of trade agreements; (4) trading agreements should allow accession by any interested country, regardless of geographical location, in order to expand the scope of net welfare gains ; (5) trading agreements should support member countries to introduce and expand unilateral liberalization measures; and finally (6) trading agreements should not only restrict the use of unfair trade policies but should also minimize the protectionist effects of rules of origin, and archaic policies which undermine trade competition (Viner, 1950). Trade creation (TC) and trade diversion (TD) is a common feature of Preferential Trade Agreements (PTAs). TC occurs when preferential tariff cuts persuades a member nation to import goods from other member states instead of producing the goods itself. This is because decline in relative price of the imported goods through tariff removal. TD occurs when a partner country starts importing goods from member states rather than from non-partner countries, due to the fall in the price of the partner-sourced import good relative to the non- member-sourced import good. This is triggered by the preferential nature of the tariff cut. Since the PTA involves some trade liberalization, there is a potential welfare gain to the member country in the standard economic model of TC. However, the new distortion in the market arising from preferential or discriminatory nature of the tariff cut leads to a potential welfare loss resulting from TD. The potential net welfare effect is hazy and must be decided empirically, rather than theoretically.

Regional economic groupings may be classified into six major chronological groups:

1. Preferential trade areas in which member countries apply a preferential treatment by reducing customs tariffs for designated product categories from the member countries relative to all non-member countries. Higher tariffs would remain in place for all other non-designated product categories.

2. Free trade areas aim mainly to expand trade activities among themselves by eliminating customs tariffs on the products they produce themselves. They also design and develop complex rules of origin to prevent import products from third countries from penetrating into the grouping through the customs of the Member State with the lowest tariff and after which such goods may be re-exported to the other member states.

3. Customs unions seek to eliminate the deficiency of free trade area by not only abolishing/reducing tariffs among member states but by also setting a common external tariff policy against third parties. This guarantees the member countries free or privileged flow of tradable goods amongst themselves by forming a discriminatory trade bloc against the non-member countries. The main concern centers on co-ordination of the trade policies among the member countries and not development of elaborate rules of origin.

4. Common markets allow free flow of goods, services and factors of production among member states. It also establishes a common external tariff policy against third parties which militates the co-ordination of commercial and industrial policies. Citizens of a common market can work and invest in any member country without any restriction.

5. Monetary unions establish a central monetary authority to design, develop and coordinate the monetary policy for all member states and issue a common currency which circulates among the member countries.

6. Economic unions are characterized by free trade in goods and services, common external tariffs among members, free mobility of capital and labor harmonization of national economic policies to form a single economic unit. The European Union (EU) the best example whose integration efforts have been extended to harmonization of social policies.

5.2. The Economic Rationale for the ICM

The pitiable development and economic performance of most of the Islamic 57 national economies over prolonged period of time can be attributed to a number of factors including but not limited to incompatible economic policies of the Islamic countries' governments; overdependence on few primary products exports such as agricultural products, raw materials and fuel to generate foreign exchange to finance their development projects; low income elasticity of demand of primary products; incessant decline in world prices of primary products

relative to prices of manufactured goods; imposition of discriminatory policies of high tariffs, quotas and other non-tariff barriers by western countries on Islamic exports making Islamic countries disadvantaged in international trade and slowing their industrialization process; negative balance of trade where imports exceed exports; inelastic exports; exponential increase in foreign debts among Islamic countries; overvalued exchange rates; too small domestic markets coupled with few external outlets for the output of the Islamic countries' to realize the economies of scale and lastly, small volume of intra-Islamic trade.

Granted that international trade is overwhelmingly dominated inherently hostile western countries, ICM afford Muslim nations a unique and all-inclusive solution to aforementioned problems to vouchsafe realization of substantial gains from international trade and honorable survival in the global stage. The ICM can generate innumerable benefits to member countries. It has the potential to become the largest diversified economic bloc in contemporary world. Member nations would have the opportunity to exploit their Islamic cultural links to achieve socio-economic solidarity, generate massive aggregate demand and thereby economies of scale in production and self-sufficiency, reduced economic dependence on the non-Islamic countries for imports and exports, high positive flow of capital and improved foreign currency reserves, and enhanced bargaining power in international trade and financial markets. Islamic doctrines of honesty and economic justice should be the fulcrum around which sustainable economic growth and development and intra-Islamic trade revolve.

Like its predecessors (EU, NAFTA and APEC), ICM should not only focus on trade facilitation and liberalization but also on comparatively new and pressing topics of the multilateral negotiations within the framework of the WTO. Such topics hinges on trade in services, strengthening investment opportunities though active involvement of private sector, intellectual property rights, labor standards, protection of environment, technological standards, co-ordination of monetary, financial, fiscal and economic policies among others. This should put competition in areas of trade of goods and services a notch higher. The creation of ICM implies that members receive preferential access to each other's markets. Non-members must suffer relative erosion in market access. How such erosion would impinge on specific non-members depends upon a number of intricate factors. One important

modality in this direction has been the establishment of regional integration schemes.

5.3. Policy Suggestions

Insightful policies suggested have been hotly discussed as means of forming a successful and formidable OIC economic bloc. First, the volume of Intra-regional trade among OIC member states is fearfully low while dependence on the industrialized countries considerably high. Removal of tariff and non-tariff barriers under the OIC block countries can open up some profitable intra-regional trade channels. In the long run, structural change through regional planning can create new vertical and horizontal linkages and integration benefits.

Second, Ariff (1998) argues that to mitigate conflict between globalization and regionalism, a less powerful, outward looking, cost-effective, low-profile, informal arrangement such as Dveloping-8 (D-8) formation should be the starting point for OIC member countries. It is instructive that the member states of D-8 play only facilitation role by minimizing or removing existing disincentives such as bureaucratic controls while simultaneously offering additional fiscal and other incentives for intra-D8 investments. Intra-OIC trade can be created through intra-OIC private sector investment activities. Investments should open up new frontiers for two-way trade; importation of raw materials and intermediate inputs and exportation of final products. The major trading partners should also be the main sources of foreign direct investment.

Third, in addition to strengthening ECO arrangements, the OIC members should reinforce the backward and forward linkages in production and investment to spawn the economies of scale and increase the size of the domestic and regional markets to effectively stave off the competition and challenges posed by EC, NAFTA, and APEC. There is urgent need to diversify trade away from the big six OIC members (Saudi Arabia, Malaysia, Indonesia, UAE, Iran and Turkey) to economically strong (Brunei, Gabon, Libya, Kuwait and Qatar) and economically weak members to promote intra-OIC trade, coordinated development strategies, production and investment relationships and bigger flow of goods, capital to equalize rental on capital, labor to equalize the wage rate and technology to boost economically weak OIC

members. This is achievable if regional public-good type projects (transport and communication networks), mainly financed by the richer OIC countries are aggressively undertaken to strengthen the weak infrastructure linkages. Regional industrialization will become a reality when free movements of factors of production promote location and relocation of industries to take advantage of the availability of cheaper capital, labor and technology within the region (Naqvi, 1998).

Fourth, an elaborate regional development scheme is required for economically poor OIC member states, notably sub-Saharan countries. Resources from economically endowed OIC members in the form of grants, equity capital, and low-interest loans should flow to Sub-Saharan Africa to boost and insulate their economies and increase the size of the regional market though improved per capital income. This is consistent with the globalization of world trade based on non-discriminatory principles while entrenching geographically discriminatory trading arrangements in the name of an open world trading system. The oil-exporting countries should diversify their exports and manufacturing sector to produce high value added goods, such as biotechnology and computer software which have strong global demand (Naqvi, 1998, Hassan 1999).

Fifth, OIC countries should more fully adopt of the WTO framework to explore areas where greater export expansion is conceivable. E.g. The BRIC countries command a huge market and will surely drive future global trade and economies. Legal trade battles associated with anti-dumping actions, countervailing duties, an arbitrary use of safeguard clauses among by the developing countries can be settled through WTO. OIC can only excel if it works through and around the major trading blocs notably EU, NAFTA and APEC, (Together, they command 87% of the world trade). This can be achieved by utilizing already existing links between OIC and the three blocks. For example, Turkey, Egypt, Morocco have essential associations with EU, while Indonesia and Malaysia are linked to ASEAN and APEC. These OIC countries could then apply the MFN clause in dealing with their OIC members to facilitate the flow of the FDI and the transfer of technology to those OIC members EU, NAFTA and APEC members (Naqvi, 1998 and Hassan, 1999).

Sixth, increased development financial assistance and export credits among OIC countries is necessary to finance imports. If OIC countries were capable of internally generating foreign exchange, there would be no need to rely on developed countries to trade regionally using Dollars and other strong currencies. This problem can be solved through international convertibility of the currencies of the member countries and design of financial arrangements that facilitate greater trade and investment linkages which in due process will circumvent the need for convertible currencies. Three such financial arrangements are: (i) clearing union. An OIC Clearing House can be formed with the help of Islamic Development Bank (IDB). (ii) Export credit arrangement operate in such a way that the foreign exchange surplus of OIC member countries can be provided as short-term export credits only allowing the exporters to obtain local currency payments while waiting for payment in convertible currency (IDB has begun this credit facility). This type of arrangement is efficient if export proceeds are used to purchase goods from the importing country. Otherwise, the importer country will be in a vicious cycle of trying to obtain a convertible currency. (iii) Payments unions envisage establishment of fund to provide medium-term balance of payments credit to OIC member states. The final alternative is for the trade surplus countries to accept non-convertible currencies for payment by OIC member country.

Globalization has yielded significant benefits of astronomical development and growth especially from 1990s. However, tumult and volatility in global financial market, which has become increasingly integrated, bear the accompanying risks of destabilization effects and increased inequality between developed and developing countries. Developing countries face the double trouble of global economic meltdown and deepening socio-economic crisis due to gulf in international economic system. There is a need to monitor, regulate and manage globalization to attain the objective of growth coupled with equality. The Asian financial crisis of 1997 and the current global financial crisis of 2008 have markedly highlighted the inherent ineffective functioning of the global economic and financial system. There is a compelling and exigent need for concerted global effort to reform international financial institutions, systems and infrastructure to ensure greater transparency and disclosure and guard against possible systemic reappearance of such crisis and accompanying threats of instability and protectionism. At least historical and current experience

evince market instability and volatile financial flows are the hallmarks of a fragile global economy and dangers of unchecked globalization

Seven, to improve the liquidity, reduce transaction costs and improve pricing efficiency in OIC capital markets, regulatory agencies should focus on (a) the new issues market and related disclosure, accounting and listing standards; (b) secondary market trading activities, market surveillance and enforcement; (c) supervision of market practitioners through registration and prudential standards. Rules should be put in place to deal with insider trading, accounting and reporting standards, and simplified procedures for listing new firms. In an increasingly integrated global economy, an equitable global trading regime such as institutionalized WTO should design concrete measures to help and protect economically disadvantaged countries in the global marketplace. To better cope with challenges of globalized economy and open trading system, developing countries will need removal of tariff and non-tariff barriers imposed by developed countries, and sufficient financial resources to finance long-term investment and fund institutional capacity building.

Investment policies and incentives of the OIC countries should be country specific while FDI should rhyme with environmental, industrial and sector needs of each country and not geographical competitiveness. The quality rather than quantity should be encouraged. Investment incentives should be evolved within the overall industrial and development policy of the country. A vibrant and dynamic private sector inflow of FDI and reduction of foreign debt are all indispensable for sustained growth. To reap synergistic benefits from interdependence of government and private sector the governments ought to improve and expand social opportunities instituting appropriate measures in key economic sectors. The active involvement of private enterprise in trade and investment among the member countries of the D-8 should be strengthened. To accelerate regional private investment through interaction and cooperation within business community within D-8, there should be free movement of private investors, investment promotion agencies investment information network and synchronized meetings of proposed Business Forum among OIC member states to welcome and guide potential investors. The active involvement of private enterprise in trade and investment among the member countries of the D-8 should be strengthened. Moreover, initiatives of international

cooperation between developed and developing countries to forge a common front of trade facilitation and diversification to alleviate social and economic conditions of the people.

D-8 is a club with common platform of harnessing indigenous resources of the member states to improve the welfare of its people. Muslim countries can have a news agency to counter the heavily biased and distorted western media in dissemination of information. The D-8 member states have unifying front and bond of Islamic culture and heritage which could be utilized to promote long term economic liberation of their peoples. D-8 would foster economic co-operation, institutional and financial reforms, higher degree of transparency and prudence in the markets to moderate the painful effects of future global financial crisis.

An iterative and concrete policy implementation is a prerequisite for strong emergence of the nascent ICM. First, it is imperative to establish subgroups of OIC premised on geographical proximity, historical, cultural, and political experiences. Second, community-based organizations, NGOs and private sector forums should participate in OIC at grass root level to expand the scope of OIC and intensify its effectiveness. Third, it is imperative to increase the number of government-private sector interaction forums and conferences covering all bulwarks of economy. Fourth, economic cooperation, interdependence and policy co-ordination are necessary tools for better interaction and pivotal for consensus building on what is a relevant Islamic economic system in the face of present times and challenges. Fifth, establish a multi-faceted research body at OIC headquarters to steer coordinated and deliberate planning and policy making at governmental and non-governmental organizations level in OIC member countries. Research work could be shared and debated for implementation. Sixth, immediate steps be undertaken to establish a centralized OIC electronic media house to project OIC views on contemporary ideological, political, and economic issues in promoting global peace, progress, and prosperity for the humanity.

At this budding stage OIC should project its efforts in project-oriented arrangements instead of structured, multi-faceted and resource consuming integration schemes of free trade areas, customs unions, and common markets. Second, member states participating in these new arrangements should have latitude in implementing liberalization

measures. Third, the arrangements should be aligned to bilateral and mutual opportunities available to member states. Fourth, these co-operation agreements may allocate resources to value-adding and high priority projects such as transport and communications networks, training, research, and technology. Fifth, all the barriers to trade may be eliminated to promote cross-boarder private investment and trade within OIC economic bloc.

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Table 1A : PTA and Regional Economic Groupings of the OIC Countries

[illegible]

Table 1A : PTA and Regional Economic Groupings of the OIC Countries (cont.)

	A	U	C	C	E	E	I	M	W	A	C	G	A	B	C	E	E	S
	E	D	O	B	C	C	O	R	A	M	A	C	S	S	I	A	C	A
	C	E	M	I	C	O	C	U	E	U	E	C	E	E	S	E	O	A
		A	E		A	W			M		U		A	C		C		R
		C	S		S	A			U				N					C
			A			S												
Panel B: Middle East,																		
North Africa																		
Algeria	*									*								
Bahrain												*						
Egypt	*										*							
Iraq											*							
Jordan											*							
Kuwait											*	*						
Lebanon																		
Libyan A.	*									*	*							
Jamahiriya																		
Morocco										*								
Oman												*						
Palestine											*							
Qatar												*						
Saudi Arabia												*						
Syria											*							
Tunisia	*									*								
United Arab											*	*						
Emirates																		
Yemen											*							

Table 1A : PTA and Regional Economic Groupings of the OIC Countries (cont.)

	A	U	C	C	E	E	I	M	W	A	C	G	A	B	C	E	E	S
	E	D	O	B	C	C	O	R	A	M	A	C	S	S	I	A	C	A
	C	E	M	I	C	O	C	U	E	U	E	C	E	E	S	E	O	A
	A	E		A	W				M		U		A	C		C		R
	C	S		S	A				U				N					C
		A			S													
Panel C: Asia and Europe																		
Albania														*				
Afghanistan																	*	
Azerbaijan														*	*		*	
Bangladesh																		*
Brunei													*			*		
Indonesia													*			*		
Iran																	*	
Kazakhstan															*		*	
Kyrgyz Rep.															*		*	
Malaysia													*			*		
Maldives																		*
Pakistan																	*	*
Tajikistan															*		*	
Turkey													*				*	
Turkmenistan															*		*	
Uzbekistan															*		*	

Source: "Regional Economic Groupings of the OIC Countries" Journal of Economic Cooperation, 21, 2 (2000), 67-114.

Notes:

AEC: African Economic Community.
 UDEAC: Central African Customs and Economic Union.
 COMESA: Common Market for Eastern and Southern Africa.
 CBI: Cross-Border Initiative.
 ECCAS: Economic Community of Central African States.
 ECOWAS: Economic Community of West African States.
 IOC: Indian Ocean Commission.
 MRU: Mano River Union.

WAEMU: West African Economic and Monetary Union.
 AMU: Arab Maghreb Union.
 CAEU: Council of Arab Economic Unity.
 GCC: Gulf Co-operation Council.
 ASEAN: Association of South East Asian Nations.
 BSEC: Black Sea Economic Co-operation.
 CIS: Commonwealth of Independent States.
 EAEC: East Asian Economic Caucus.
 ECO: Economic Co-operation Organisation.
 SAARC: South Asian Association for Regional Co-operation.

Table 1B: Major Regional Integration Schemes Comprising Only the OIC Countries

Name of the organisation	Number of members	Form of regional integration
Arab Maghreb Union (AMU)	5	Stage 1: Customs union. Stage 2: Common market.
Council of Arab Economic Unity (CAEU)	12	Stage 1: Customs union Stage 2: Common market.
Gulf Co-operation Council (GCC)	6	Stage 1: Customs union. Stage 2: Common market.
Economic Co-operation Organisation (ECO)	10	Preferential trade area.

Source: SESRTCIC, 2000

Table 1C: Major Regional Integration Schemes of OIC Member Countries with Other Countries

In Africa			
Name of the organisation	Number of members	Number of OIC members	Form of regional integration
African Economic Community (AEC)	52	25	Stage 1: Free trade area. Stage 2: Customs union. Stage 3: Common market. Stage 4: Economic and monetary union.
Central African Customs and Economic Union (UDEAC)	6	3	Stage 1: Customs union. Stage 2: Common market. Stage 3: Economic and monetary union.
Common Market for Eastern and Southern Africa (COMESA)	21	5	Stage 1: Customs union. Stage 2: Common market. Stage 3: Monetary union.
Cross-Border Initiative (CBI)	14	2	Free trade area.
Economic Community of Central African States (ECCAS)	11	3	Stage 1: Customs union. Stage 2: Common market.
Economic Community of West African States (ECOWAS)	15	12	Stage 1: Common market. Stage 2: Monetary union.
Indian Ocean Commission (IOC)	5	1	Preferential trade area.
Mano River Union (MRU)	3	2	Customs union.
West African Economic and Monetary Union (WAEMU)	7	6	Stage 1: Common market. Stage 2: Economic and monetary union.

Source: SESRTCIC, 2000

Table2. Gross Domestic Product

This Table presents average real gross domestic product in constant 2000 US dollars in different sub-periods. In Panel A, the real GDP for OIC countries is calculated as the sum of OIC members' real GDP with available data in the Word Development Indicators (WDI) database. Moreover, the real GDP per capita for OIC members is calculated as the total real GDP for OIC members showed in panel A divided by total OIC population. Finally, panel C shows average GDP growth from the WDI database. OIC-LDC: OIC Least developed countries. OIC-MDC: OIC Middle Income Countries. OIC-FEC: OIC oil exporting members.

	1980-89	1990-99	2000-07	1980-2007
Panel A: Real GDP (2000 U.S \$ Billions)				
OIC-LDC	49.3	79.2	125.5	82
OIC-MDC	418.7	716.0	1,005.5	693
OIC-FEC	357.1	471.4	687.0	492
<i>OIC countries</i>	825.0	1,266.7	1,817.9	1,266
Low Income Countries	221.9	306.8	442.4	315
Middle Income Countries	3,292.6	4,564.8	6,825.5	4,756
High Income Countries	16,588.8	22,176.5	27,839.8	21,799
<i>World</i>	20,100.6	27,048.5	35,101.6	26,868
Panel B: Real GDP per capita (2000 U.S. \$)				
OIC-LDC	275	355	460	357
OIC-MDC	1,251	1,399	1,720	1,438
OIC-FEC	10,073	7,448	9,680	9,023
<i>OIC countries</i>	906	1,116	1,362	1,139
Low Income Countries	295	314	367	322
Middle Income Countries	1,045	1,234	1,656	1,287
High Income Countries	18,435	22,908	26,992	22,477
<i>World</i>	4,184	4,796	5,528	4,786
Panel C: GDP Growth (%)				
OIC-LDC	2.5	3.1	5.2	3.5
OIC-MDC	3.1	2.4	4.9	3.4
OIC-FEC	1.4	2.7	5.8	3.1
<i>OIC countries</i>	2.3	2.7	5.3	3.3
Low Income Countries	2.9	3.3	5.3	3.7
Middle Income Countries	3.4	3.5	6.0	4.2
High Income Countries	3.0	2.6	2.5	2.7
<i>World</i>	3.0	2.7	3.2	3.0

Table 3. Population

This Table shows population and its growth for OIC countries as well as word countries classified by income according World Bank classification. The data comes from WDI database. The figures are average during eighties, nineties and this decade. OIC-LDC: OIC Least developed countries. OIC-MDC: OIC Middle Income Countries. OIC-FEC: OIC oil exporting members.

	1980-89	1990-99	2000-07	1980-2007
Panel A. Growth rate (%)				
OIC-LDC	2.35	2.10	2.43	2.28
OIC-MDC	2.32	1.90	1.65	1.97
OIC-FEC	3.23	2.42	2.06	2.60
<i>OIC countries</i>	2.52	2.07	1.94	2.19
Low Income Countries	2.65	2.54	2.25	2.49
Middle Income Countries	1.79	1.42	1.06	1.44
High Income Countries	0.71	0.75	0.70	0.72
<i>World</i>	1.72	1.49	1.23	1.49
Panel B. Persons (millions)				
OIC-LDC	233	284	354	286
OIC-MDC	481	593	692	581
OIC-FEC	197	258	289	245
<i>OIC countries</i>	911	1,135	1,335	1,112
Low Income Countries	752	975	1,201	960
Middle Income Countries	3,144	3,690	4,111	3,615
High Income Countries	899	967	1,031	961
<i>World</i>	4,794	5,631	6,343	5,535

Table 4. Output Structure

This Table summarizes output structure: Agriculture and Industry, which is further divided by manufacturing and services. The figures are average of value added as percentage of GDP during different sub-periods for OIC as well as the world classified by income level according to the World Bank classification. The data comes from WDI database. OIC-LDC: OIC Least developed countries. OIC-MDC: OIC Middle Income Countries. OIC-FEC: OIC oil exporting members.

	1980-89	1990-99	2000-07	1980-07
Panel A: Agriculture				
OIC-LDC	38.1	34.5	31.1	35.1
OIC-MDC	21.6	22.8	17.4	21.0
OIC-FEC	6.1	9.3	9.4	8.1
<i>OIC average</i>	<i>25.1</i>	<i>24.4</i>	<i>21.0</i>	<i>19.0</i>
Low Income Countries	34.8	32.7	28.3	31.8
Middle Income Countries	19.0	13.8	10.2	14.8
High Income Countries	3.5	2.4	1.7	2.6
<i>World</i>	<i>6.0</i>	<i>4.5</i>	<i>3.4</i>	<i>4.8</i>
Panel B: Industry				
OIC-LDC	17.6	19.5	23.5	19.7
OIC-MDC	31.4	29.9	30.8	30.7
OIC-FEC	53.1	47.2	54.6	51.1
<i>OIC average</i>	<i>30.5</i>	<i>29.7</i>	<i>32.9</i>	<i>34.8</i>
Low Income Countries	22.2	23.1	26.6	24.0
Middle Income Countries	38.0	35.8	36.1	36.7
High Income Countries	34.9	29.9	26.5	30.9
<i>World</i>	<i>35.2</i>	<i>30.8</i>	<i>28.1</i>	<i>31.7</i>
Panel C: Manufacturing				
OIC-LDC	8.4	8.6	8.4	8.5
OIC-MDC	15.8	17.8	17.5	17.0
OIC-FEC	8.7	10.5	8.5	9.4
<i>OIC average</i>	<i>10.9</i>	<i>12.3</i>	<i>12.1</i>	<i>12.2</i>
Low Income Countries	14.5	13.3	13.1	13.5
Middle Income Countries	26.0	22.9	21.6	23.7
High Income Countries	NA	19.8	17.4	18.7
<i>World</i>	<i>NA</i>	<i>20.2</i>	<i>18.1</i>	<i>19.3</i>
Panel D. Services				
OIC-LDC	44.8	46.1	45.5	45.4
OIC-MDC	47.2	47.3	51.9	48.4
OIC-FEC	40.8	43.5	36.0	40.7
<i>OIC average</i>	<i>44.7</i>	<i>46.0</i>	<i>46.1</i>	<i>46.5</i>
Low Income Countries	43.0	44.3	45.0	44.2
Middle Income Countries	43.0	50.4	53.7	48.5
High Income Countries	61.7	67.8	71.8	66.6
<i>World</i>	<i>58.7</i>	<i>64.7</i>	<i>68.5</i>	<i>63.5</i>

Table 5. Inflation

This Table shows average inflation for different sub-periods. Panel A includes all country-years during the sub-periods whereas Panel B excludes country-year with inflation higher than 200 percent. Panel C shows world inflation classified by income according to the World Bank. The data comes from WDI database. OIC-LDC: OIC Least developed countries. OIC-MDC: OIC Middle Income Countries. OIC-FEC: OIC oil exporting members.

	1980-89	1990-99	2000-08	1980-07
<i>Panel A: Average</i>				
<i>Inflation</i>				
OIC-LDC	24.8	15.2	6.2	16.0
OIC-MDC	20.8	105.4	7.9	47.3
OIC-FEC	8.1	62.4	5.8	26.7
<i>OIC countries</i>	<i>19.7</i>	<i>61.9</i>	<i>6.8</i>	<i>31.0</i>
<i>Panel B: Average Inflation excluding periods of hyper-inflation</i>				
OIC-LDC	23.3	15.2	5.8	15.4
OIC-MDC	14.2	20.1	7.6	14.4
OIC-FEC	8.1	10.6	5.3	8.2
<i>OIC countries</i>	<i>16.7</i>	<i>16.0</i>	<i>6.4</i>	<i>13.5</i>
<i>Panel C: world inflation</i>				
Low Income				
Countries	9.7	11.5	7.1	9.60
Middle Income				
Countries	8.9	10.8	5.4	8.58
High Income				
Countries	6.2	2.9	2.6	4.00
<i>World</i>	<i>7.7</i>	<i>7.0</i>	<i>4.6</i>	<i>6.55</i>

Table 6. Current Account and Reserves

This Table shows current account and reserves from BOP for OIC countries world countries classified by income according to the World Bank. Data comes from the WDI database. OIC-LDC: OIC Least developed countries. OIC-MDC: OIC Middle Income Countries. OIC-FEC: OIC oil exporting members.

	1980-89	1990-99	2000-07	1980-07
Panel A: Current account balance (constant 2000 US \$ billions)				
OIC-LDC	-4.6	-3.4	-3.8	-3.9
OIC-MDC	-16.2	-10.8	3.4	-8.7
OIC-FEC	13.4	-10.1	90.6	27.1
<i>OIC countries</i>	<i>-7.4</i>	<i>-24.2</i>	<i>90.2</i>	<i>14.5</i>
Low Income Countries	-13.8	-10.2	1.6	-8.1
Middle Income Countries	-62.1	-59.8	149.2	-0.9
High Income Countries	-61.2	-23.4	-199.3	-87.1
<i>World</i>	<i>-137.1</i>	<i>-93.4</i>	<i>-48.5</i>	<i>-96.2</i>
Panel B: Total reserves minus gold (constant 2000 US \$ billions)				
OIC-LDC	2.7	6.2	14.5	7.3
OIC-MDC	27.3	85.0	183.8	92.6
OIC-FEC	92.4	54.4	161.1	98.4
<i>OIC countries</i>	<i>122.4</i>	<i>145.6</i>	<i>359.3</i>	<i>198.4</i>
Low Income Countries	12.4	18.5	59.9	28.1
Middle Income Countries	132.3	420.4	1438.4	608.4
High Income Countries	335.5	1105.2	1761.2	1017.7
<i>World</i>	<i>731.7</i>	<i>1544.1</i>	<i>3259.5</i>	<i>1744.1</i>

Table 7. Total External Debt and Net Foreign Direct Investment

This Table shows total external debt for OIC countries and world countries classified by income according to the World Bank. Data comes from the WDI database. OIC-LDC: OIC Least developed countries. OIC-MDC: OIC Middle Income Countries. OIC-FEC: OIC oil exporting members.

	1980-89	1990-99	2000-07	1980-07
Panel A: Total external debt (constant 2000 US \$ billions)				
OIC-LDC	59.4	81.7	69.4	70.2
OIC-MDC	277.1	405.1	495.4	385.2
OIC-FEC	78.0	94.6	61.3	79.2
<i>OIC countries</i>	<i>414.6</i>	<i>581.4</i>	<i>626.1</i>	<i>534.6</i>
Low Income Countries	190.8	272.2	214.7	226.7
Middle Income Countries	1,215.2	1,738.0	2,140.9	1,666.4
High Income Countries				
<i>World</i>				
Panel B: Foreign Direct Investment (constant 2000 US \$ millions)				
OIC-LDC	76	665	2,928	1,101
OIC-MDC	4,509	11,040	20,708	11,470
OIC-FEC	4,077	3,104	94	2,591
<i>OIC countries</i>	<i>8,663</i>	<i>14,809</i>	<i>23,730</i>	<i>15,163</i>
Low Income Countries	1,082	2,758	4,936	2,782
Middle Income Countries	na	86,887	162,460	77,448
High Income Countries	na	na	-	-45,361
<i>World</i>	<i>na</i>	<i>-3,437</i>	<i>9,492</i>	<i>1,485</i>

Table 8. OIC Trade

This Table shows real merchandise import and export, trade in good and services and trade as percentage of GDP for OIC countries and world countries classified by income according to the World Bank. Data comes from the WDI database. OIC-LDC: OIC Least developed countries. OIC-MDC: OIC Middle Income Countries. OIC-FEC: OIC oil exporting members.

	1980-89	1990-99	2000-07	1980-07
Panel A: Merchandise Export (constant 2000 US \$ billions)				
OIC-LDC	9.8	11.5	24.9	14.7
OIC-MDC	104.5	182.7	318.0	193.4
OIC-FEC	272.8	189.8	431.8	288.6
OIC countries	387.1	383.9	774.7	496.7
Low Income Countries	64.8	66.6	124.5	82.5
Middle Income Countries	643.6	901.5	1,994.0	1,121.5
High Income Countries	2,879.3	4,313.2	6,055.1	4,298.8
World	3,581.3	5,284.6	8,172.9	5,501.5
Panel B: Merchandise Import (constant 2000 US \$ billions)				
OIC-LDC	22.0	20.0	34.9	25.0
OIC-MDC	127.4	210.2	334.9	216.2
OIC-FEC	175.4	134.2	225.0	174.9
OIC countries	324.8	364.4	594.8	416.1
Low Income Countries	84.1	79.0	133.3	96.3
Middle Income Countries	630.9	949.3	1,880.2	1,101.6
High Income Countries	3,003.4	4,356.2	6,360.3	4,445.7
World	3,720.2	5,388.6	8,371.4	5,645.0
Panel C: Net trade in goods and services (constant 2000 US \$ billions)				
OIC-LDC	-9.3	-8.5	-8.4	-8.7
OIC-MDC	-22.6	-10.0	9.7	-8.9
OIC-FEC	16.9	14.6	122.3	46.2
OIC countries	-15.0	-3.9	123.6	28.5
Panel D: Trade as GDP percent (%)				
OIC-LDC	40.9	43.4	52.2	45.0
OIC-MDC	56.9	70.9	73.6	66.7
OIC-FEC	76.7	76.8	82.5	78.4
Low Income Countries	36.4	43.0	54.1	43.8
Middle Income Countries	29.7	35.9	50.9	38.0
High Income Countries	32.8	33.8	42.6	35.9
World	32.3	34.2	44.4	36.4

Figure 1. Merchandise Export and Import change

This figure shows the percentage change in real merchandise export and import since 1980. OIC real export (import) is calculated by adding real export (import) of the OIC members. All countries' merchandise export (import) and import level as well as world merchandise export (import) level are from WDI database.

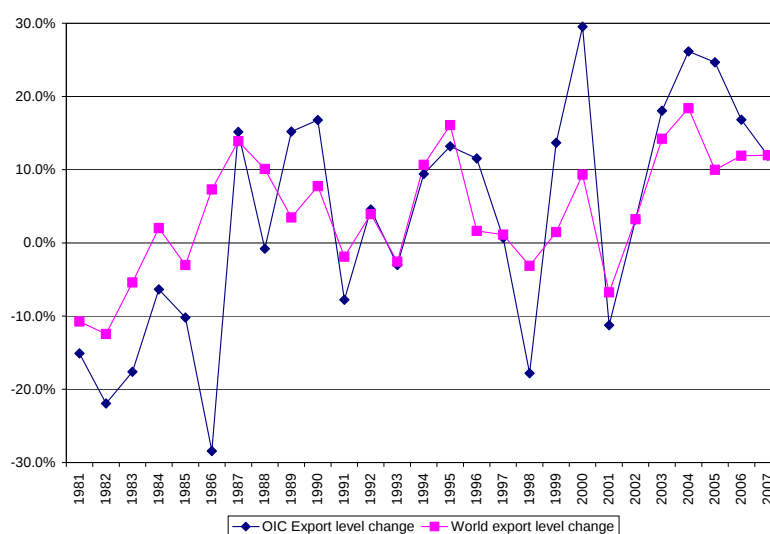
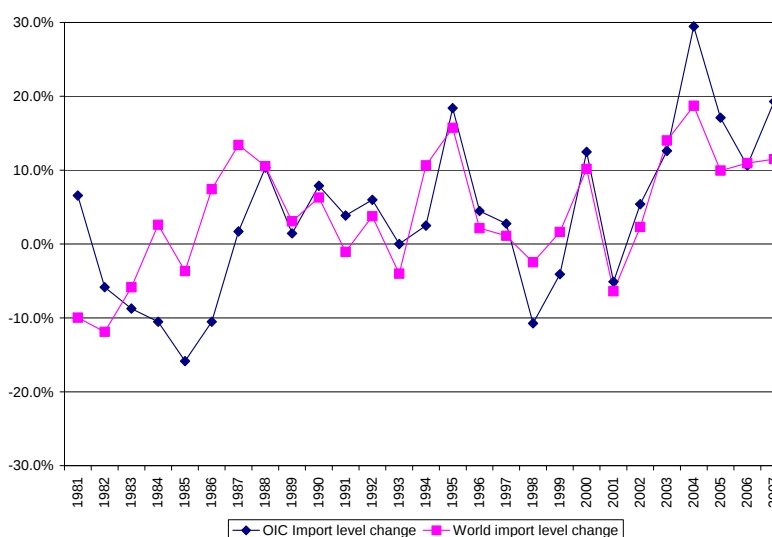
Panel A: real export change**Panel B: real import change**

Table 9. Descriptive statistics of variables used in gravitational model

The independent variable is trade between country i and partner j . GDP_{ij} : multiplication between country i 's real GDP with partner j 's real GDP. PCI_{ij} : multiplication between country i 's real GDP per capita with partner j 's real GDP per capital. Distance: distance between country i and partner j . BORDER: contiguous countries. SEA: country has sea shore. GCC: both country i and partner j belong to Gulf Cooperation Council. SAARC: both country i and partner j belong to South Asian Association for Regional Cooperation. AMU: both country i and partner j belong to Arab Maghreb Union. ECO: both country i and partner j belong to Economic Cooperation Organisation. D8: trade among eight bigger OIC members. GCCAMUECO: hypothetical trading block GCCAMUECO among the member countries of GCC, AMU and ECO blocks. Finally, variables with the suffix "N" stand for trade with non-members of the grouping in question.

Panel A: Descriptive Statistics (Number of observations: 26,094)

Variable	Mean	Standard deviation	Min	Max
Trade	0.046	0.247	0.00	10.27
Log(GDP_{ij})	4.164	2.481	-3.71	11.41
Log(PCI_{ij})	-0.004	1.950	-3.88	7.24
Log(Distance)	7.770	0.793	4.06	9.42
BORDER	0.060	0.237	0	1
SEA	0.799	0.401	0	1
SAARC	0.002	0.045	0	1
SAARCN	0.066	0.249	0	1
GCC	0.011	0.102	0	1
GCCN	0.078	0.269	0	1
AMU	0.006	0.080	0	1
AMUN	0.083	0.275	0	1
ECO	0.003	0.057	0	1
ECON	0.043	0.203	0	1
D8	0.030	0.171	0	1
D8N	0.165	0.371	0	1
GCCAMUECO	0.152	0.359	0	1
GCCAMUECON	0.231	0.421	0	1

Panel B: Correlation matrix

	Trade	Log(GDPij)	Log(PCij)	Log(Distance)	BORDER	SEA	SAARC	SAARC	SAARC	GCC	GCCN	AMU	AMUN	ECO	ECON	D8	D8N	GCCAMUECO	GCCAMUECON
Trade	1.00																		
Log(GDPij)	0.30	1.00																	
Log(PCij)	0.21	0.50	1.00																
Log(Distance)	-0.16	0.07	0.07	1.00															
BORDER	0.16	-0.02	-0.09	-0.49	1.00														
SEA	0.07	0.18	0.37	0.04	-0.08	1.00													
SAARC	0.01	0.03	-0.02	-0.02	-0.01	-0.06	1.00												
SAARC	0.01	0.10	-0.12	0.15	-0.07	-0.30	-0.01	1.00											
GCC	0.24	0.11	0.27	-0.23	0.10	0.05	0.00	-0.03	1.00										
GCCN	0.02	0.06	0.30	-0.02	-0.05	0.15	-0.01	-0.08	-0.03	1.00									
AMU	0.01	0.03	0.01	-0.10	0.15	0.04	0.00	-0.02	-0.01	-0.02	1.00								
AMUN	-0.02	0.12	0.03	0.01	-0.02	0.15	-0.01	-0.08	-0.03	-0.09	-0.02	1.00							
ECO	0.15	0.12	0.02	-0.04	0.15	0.03	0.00	0.06	-0.01	-0.02	0.00	-0.02	1.00						
ECON	0.09	0.19	0.02	-0.03	-0.04	0.11	-0.01	0.20	-0.02	-0.06	-0.02	-0.06	-0.01	1.00					
D8	0.17	0.31	-0.01	0.05	0.04	-0.02	0.13	0.13	-0.02	-0.05	-0.01	-0.05	0.32	0.02	1.00				
D8N	0.06	0.31	-0.05	0.16	-0.09	-0.02	0.01	0.42	-0.05	-0.13	-0.04	-0.13	-0.03	0.45	-0.08	1.00			
GCCAMUECO	0.28	0.48	0.33	-0.02	0.01	0.11	0.11	0.14	0.24	0.12	0.19	0.17	0.13	0.11	0.42	0.17	1.00		
GCCAMUECON	-0.06	0.11	-0.04	0.12	-0.07	0.10	-0.02	0.27	-0.06	0.33	-0.04	0.29	-0.03	0.22	-0.10	0.51	-0.23	1.00	

Table 10. Regression results (period: 1980-2007)

This Table shows year-fixed effect regressions for different gravitational models⁹. The model is estimated using Poisson Pseudo maximum likelihood. The independent variable is trade between country *i* and partner *j*. GDP_{ij}: multiplication between country *i*'s real GDP with partner *j*'s real GDP. PCI_{ij}: multiplication between country *i*'s real GDP per capita with partner *j*'s real GDP per capita. Distance: distance between country *i* and partner *j*. BORDER: contiguous countries. SEA: country has sea shore. GCC: both country *i* and partner *j* belong to Gulf Cooperation Council. SAARC: both country *i* and partner *j* belong to South Asian Association for Regional Cooperation. AMU: both country *i* and partner *j* belong to Arab Maghreb Union. ECO: both country *i* and partner *j* belong to Economic Cooperation Organisation. D8: trade among eight bigger OIC members. GCCAMUECO: hypothetical trading block GCCAMUECO among the member countries of GCC, AMU and ECO blocks. Finally, variables with the suffix "N" stand for trade with non-members of the grouping in question.

Variables	1	2	3	4	5	6
Log(GDP _{ij})	0.642*** (35.86)	0.696*** (40.43)	0.742*** (51.62)	0.639*** (40.04)	0.649*** (36.94)	0.668*** (44.41)
Log(PCI _{ij})	0.058*** (3.07)	0.103*** (5.43)	0.080*** (4.63)	0.072*** (3.97)	0.087*** (5.37)	0.069*** (4.50)
		-	-	-	-	
Log(Distance)	-0.723*** (-21.36)	0.709*** (-20.50)	0.669*** (-17.89)	0.727*** (-21.24)	0.719*** (-19.68)	-0.730*** (-19.60)
BORDER	0.930*** (9.68)	0.866*** (9.16)	0.843*** (8.55)	0.909*** (9.69)	0.783*** (9.69)	0.693*** (8.50)
SEA	0.986*** (9.70)	0.878*** (8.21)	0.818*** (8.19)	0.945*** (9.59)	0.395*** (6.54)	0.372*** (6.11)
SAARC	0.810*** (5.17)	0.882*** (5.68)	0.916*** (6.30)	0.648*** (4.54)		
SAARCN	0.652*** (6.41)	0.666*** (6.15)	0.665*** (6.42)	0.630*** (6.35)		
GCC	1.320*** (3.84)	0.194 (1.64)	0.112 (0.95)	-0.265** (-1.97)		

⁹ To save space the year intercepts are not shown

Table 10. Regression results (period: 1980-2007) (cont.)

Variables	1	2	3	4	5	6
CCN	1.398*** (4.11)	0.110 (1.43)	-0.087 (-1.25)	-0.181** (-2.29)		
AMU	0.270 (0.79)	0.595*** (-6.38)	0.730*** (-7.59)	1.251*** (-11.00)		
AMUN	1.052*** (3.03)	-0.108 (-1.06)	0.338*** (-3.56)	0.500*** (-4.93)		
ECO	-0.615*** (-4.06)	-0.596 (-3.92)	0.496*** (-3.68)	0.689*** (-5.22)		
ECON	-0.232*** (-2.91)	-0.194 (-2.46)	-0.020 (-0.27)	-0.150* (-1.93)		
D8	1.436*** (4.02)	0.385 (3.10)			0.129 (1.44)	
D8N	1.647*** (4.81)	0.394 (5.41)			0.366*** (5.42)	
GCCAMUECO	-0.900*** (-2.70)			0.640*** (7.42)	0.278*** (4.05)	0.392*** (5.89)
GCCAMUECON	-1.588*** (-4.61)			0.024 (0.28)	0.300*** (-3.37)	-0.103 (-1.45)
# Observations	26,094	26,094	26,094	26,094	26,094	26,094
LOGL	-2,646.8	-2,663.9	-2,670.9	-2,649.7	-2,672.2	-2,682.3

Table 11. Regression results (period: 2000-2007)

This Table shows year-fixed effect regressions for different gravitational models. The model is estimated using Poisson Pseudo maximum likelihood. The independent variable is trade between country *i* and partner *j*. GDP_{ij}: multiplication between country *i*'s real GDP with partner *j*'s real GDP. PCI_{ij}: multiplication between country *i*'s real GDP per capita with partner *j*'s real GDP per capital. Distance: distance between country *i* and partner *j*. BORDER: contiguous countries. SEA: country has sea shore. GCC: both country *i* and partner *j* belong to Gulf Cooperation Council. SAARC: both country *i* and partner *j* belong to South Asian Association for Regional Cooperation. AMU: both country *i* and partner *j* belong to Arab Maghreb Union. ECO: both country *i* and partner *j* belong to Economic Cooperation Organisation. D8: trade among eight bigger OIC members. GCCAMUECO: hypothetical trading block GCCAMUECO among the member countries of GCC, AMU and ECO blocks. Finally, variables with the suffix "N" stand for trade with non-members of the grouping in question.

Variables	1	2	3	4	5	6
Log(GDP _{ij})	0.702*** (25.58)	0.754*** (29.27)	0.787*** (38.44)	0.698*** (28.51)	0.729*** (28.55)	0.746*** (34.39)
Log(PCI _{ij})	0.106*** (4.40)	0.140*** (5.73)	0.127*** (5.46)	0.122*** (5.14)	0.086*** (3.86)	0.072*** (3.22)
	-	-	-	-	-	-
Log(Distance)	0.636*** (-13.00)	0.627*** (-12.48)	0.594*** (-11.17)	0.642*** (-12.97)	0.613*** (-12.05)	0.628*** (-11.76)
BORDER	1.150*** (8.87)	1.076*** (8.41)	1.072*** (8.10)	1.120*** (9.00)	0.930*** (7.97)	0.788*** (6.61)
SEA	0.942*** (6.27)	0.853*** (5.44)	0.804*** (5.41)	0.898*** (6.18)	0.387*** (4.26)	0.360*** (3.89)
SAARC	0.631*** (3.05)	0.678*** (3.33)	0.682*** (3.59)	0.451** (2.36)		
SAARCN	0.711*** (4.88)	0.726*** (4.75)	0.733*** (4.98)	0.689*** (4.84)		
				-		
GCC	0.741 (1.64)	-0.337* (-1.82)	-0.414** (-2.25)	0.730*** (-3.59)		

Table 11. Regression results (period: 2000-2007) (cont.)

Variables	1	2	3	4	5	6
GCCN	1.161*** (2.61)	-0.077 (-0.62)	-0.230** (-2.02)	-0.307** (-2.53)		
		-	-	-		
AMU	0.135 (0.31)	0.724*** (-5.75)	0.827*** (-6.50)	1.260*** (-8.40)		
				-		
AMUN	1.036** (2.31)	-0.100 (-0.69)	-0.269** (-1.99)	0.402*** (-2.78)		
	-	-	-	-		
ECO	0.844*** (-4.13)	0.818*** (-3.93)	0.784*** (-4.19)	0.926*** (-5.14)		
ECON	-0.184 (-1.63)	-0.146 (-1.30)	0.012 (0.12)	-0.093 (-0.85)		
D8	1.301*** (2.80)	0.250 (1.49)			0.089 (0.67)	
D8N	1.544*** (3.48)	0.326*** (3.12)			0.509*** (4.87)	
GCCAMUECO	-0.914** (-2.13)			0.509*** (4.25)	0.013 (0.12)	0.167* (1.75)
	-				-	
GCCAMUECON	1.477*** (-3.29)			0.032 (0.26)	0.449*** (-3.22)	-0.138 (-1.36)
# Observations	9,233	9,233	9,233	9,233	9,233	9,233
LOGL	-1,279.7	-1,286.8	-1,289.5	-1,281.8	-1,295.5	-1,307.4

Table 12. Regression results (period: 1990-1999)

This Table shows year-fixed effect regressions for different gravitational models. The model is estimated using Poisson Pseudo maximum likelihood. The independent variable is trade between country i and partner j . GDP_{ij} : multiplication between country i 's real GDP with partner j 's real GDP. PCI_{ij} : multiplication between country i 's real GDP per capita with partner j 's real GDP per capital. Distance: distance between country i and partner j . BORDER: contiguous countries. SEA: country has sea shore. GCC: both country i and partner j belong to Gulf Cooperation Council. SAARC: both country i and partner j belong to South Asian Association for Regional Cooperation. AMU: both country i and partner j belong to Arab Maghreb Union. ECO: both country i and partner j belong to Economic Cooperation Organisation. D8: trade among eight bigger OIC members. GCCAMUECO: hypothetical trading block GCCAMUECO among the member countries of GCC, AMU and ECO blocks. Finally, variables with the suffix "N" stand for trade with non-members of the grouping in question.

Variables	1	2	3	4	5	6
Log(GDP_{ij})	0.577*** (22.36)	0.645*** (24.85)	0.717*** (36.03)	0.578*** (25.44)	0.567*** (21.92)	0.588*** (28.57)
Log(PCI_{ij})	0.063** (1.99)	0.140*** (4.53)	0.096*** (3.50)	0.070** (2.35)	0.125*** (4.90)	0.105*** (4.52)
	-	-	-	-	-	-
Log(Distance)	0.822*** (-16.20)	0.789*** (-15.41)	0.723*** (-13.06)	0.824*** (-16.17)	0.832*** (-14.77)	0.839*** (-14.88)
BORDER	0.833*** (6.36)	0.774*** (6.01)	0.738*** (5.41)	0.819*** (6.36)	0.686*** (5.97)	0.630*** (5.60)
SEA	0.986*** (6.91)	0.832*** (5.39)	0.748*** (5.24)	0.945*** (6.87)	0.389*** (4.35)	0.368*** (4.17)
SAARC	0.906*** (5.21)	1.070*** (5.89)	1.188*** (7.36)	0.775*** (4.85)		
SAARCN	0.533*** (4.00)	0.573*** (3.96)	0.556*** (4.04)	0.505*** (3.95)		
GCC	1.493*** (3.43)	0.565*** (3.59)	0.479*** (2.94)	-0.042 (-0.21)		

Table 12. Regression results (period: 1990-1999) (cont.)

Variables	1	2	3	4	5	6
GCCN	1.402*** (3.28)	0.269*** (2.81)	-0.008 (-0.09)	-0.132 (-1.12)		
			-	-		
AMU	0.342 (0.77)	-0.190 (-1.34)	0.395*** (-2.75)	1.157*** (-7.43)		
				-		
AMUN	0.946** (2.13)	0.023 (0.15)	-0.334** (-2.39)	0.572*** (-3.86)		
	-	-	-	-		
ECO	0.831*** (-5.11)	0.815*** (-5.06)	0.575*** (-3.81)	0.869*** (-6.03)		
ECON	-0.221* (-1.81)	-0.188 (-1.57)	0.015 (0.13)	-0.164 (-1.38)		
D8	1.457*** (3.19)	0.678*** (4.02)			0.148 (1.14)	
D8N	1.581*** (3.65)	0.517*** (5.08)			0.273*** (2.72)	
GCCAMUECO	-0.571 (-1.37)			0.938*** (8.24)	0.620*** (7.47)	0.707*** (8.66)
					-	
GCCAMUECON	-1.596 (-3.75)			-0.043 (-0.38)	0.277*** (-2.72)	-0.146* (-1.74)
# Observations	9,884	9,884	9,884	9,884	9,884	9,884
LOGL	-800.1	-809.5	-813.5	-800.6	-809.0	-810.4

Table 13. Regression results (period: 1980-1989)

This Table shows year-fixed effect regressions for different gravitational models. The model is estimated using Poisson Pseudo maximum likelihood. The independent variable is trade between country *i* and partner *j*. GDP_{ij}: multiplication between country *i*'s real GDP with partner *j*'s real GDP. PCI_{ij}: multiplication between country *i*'s real GDP per capita with partner *j*'s real GDP per capital. Distance: distance between country *i* and partner *j*. BORDER: contiguous countries. SEA: country has sea shore. GCC: both country *i* and partner *j* belong to Gulf Cooperation Council. SAARC: both country *i* and partner *j* belong to South Asian Association for Regional Cooperation. AMU: both country *i* and partner *j* belong to Arab Maghreb Union. ECO: both country *i* and partner *j* belong to Economic Cooperation Organisation. D8: trade among eight bigger OIC members. GCCAMUECO: hypothetical trading block GCCAMUECO among the member countries of GCC, AMU and ECO blocks. Finally, variables with the suffix "N" stand for trade with non-members of the grouping in question.

Variables	1	2	3	4	5	6
Log(GDP _{ij})	0.606*** (14.49)	0.641*** (15.36)	0.642*** (24.21)	0.582*** (15.37)	0.539*** (13.70)	0.554*** (14.65)
	-					
Log(PCI _{ij})	0.176*** (-3.04)	-0.130** (-2.35)	-0.122** (-2.56)	-0.131** (-2.42)	0.023 (0.60)	0.003 (0.08)
	-	-	-	-	-	-
Log(Distance)	0.940*** (-11.23)	0.928*** (-10.84)	0.918*** (-10.06)	0.940*** (-11.15)	0.978*** (-10.70)	0.971*** (-11.01)
BORDER	0.218 (1.03)	0.204 (0.96)	0.181 (0.90)	0.224 (1.08)	0.369** (2.02)	0.402** (2.27)
SEA	1.042*** (5.85)	0.938*** (5.35)	0.937*** (5.29)	1.045*** (5.70)	0.404*** (3.40)	0.392*** (3.27)
SAARC	0.942*** (4.11)	1.004*** (4.24)	0.930*** (4.12)	0.798*** (3.68)		
SAARCN	0.590*** (2.83)	0.593*** (2.79)	0.616*** (2.91)	0.627*** (2.99)		
GCC	0.942*** (3.52)	1.338*** (5.59)	1.235*** (5.12)	1.040*** (3.65)		

Table 13. Regression results (period: 1980-1989) (cont.)

Variables	1	2	3	4	5	6
GCCN	0.144 (0.72)	0.474*** (2.94)	0.369*** (2.88)	0.332** (2.15)		
	-	-	-	-		
AMU	1.461*** (-4.58)	0.824*** (-3.07)	0.885*** (-3.52)	1.190*** (-4.42)		
	-		-	-		
AMUN	0.827*** (-3.30)	-0.409* (-1.96)	0.502*** (-3.04)	0.570*** (-3.25)		
ECO	0.605** (2.15)	0.592** (2.12)	0.503* (1.90)	0.361 (1.35)		
ECON	-0.242 (-1.32)	-0.192 (-1.10)	-0.025 (-0.15)	-0.100 (-0.59)		
D8	-0.574* (-1.94)	-0.008 (-0.03)			0.211 (1.24)	
D8N	-0.061 (-0.31)	0.283 (1.63)			0.013 (0.10)	
GCCAMUECO	0.675*** (3.76)			0.416** (2.11)	0.564*** (3.56)	0.614*** (3.72)
GCCAMUECON				-0.122 (-0.58)	0.081 (0.44)	0.079 (0.42)
# Observations	6,977	6,977	6,977	6,977	6,977	6,977
LOGL	-531.7	-534.0	-534.6	-532.8	-546.0	-546.3