وَأَحَلَّ اللّهُ الْبَيْعَ وَحَرَّمَ الرِّبَوٰاْ

Allah has permitted trading and forbidden Riba (usury)

Socioeconomic Development: Econophysics, Econosharia as Secular & Divine Resources

A.K.M.A. Islam

Outlines of Talk

- Socioeconomic Development
- Intellectual Resources in Secular Economics
- Is Economics a Dismal Science ?
- Global Crisis of 2007-2008 : Failures of Economic Theory
- Emergence of Econophysics : Secular Resource
- Divine Knowledge – Sharia Principles to Economics
- Proposal for "Econosharia" – Evolution of a new Discipline & its Curriculum
- Concluding Remarks

Socioeconomic Development

- Process of social & economic development in a society.
  - -- It is measured with indicators, such as GDP, life expectancy, literacy , levels of employment etc.
  - -- Changes in less-tangible factors are also considered, such as personal dignity etc.

- It can also refer to as the quantitative & qualitative changes in the economy. Such acts can involve multiple areas including development of human capital, critical infrastructure, regional competitiveness, social inclusion, health, safety, literacy, & other initiatives.

Socioeconomic Development

- **Islamic Perspective**

  Defined as a process leading to a substantial & sustainable enhancement of the material & spiritual welfare of the population of the world.

  - Equitable distribution of the income & wealth derived from an equitable ownership of the wealth of Allah by the nations of the world.

Intellectual Resources in Secular Economics

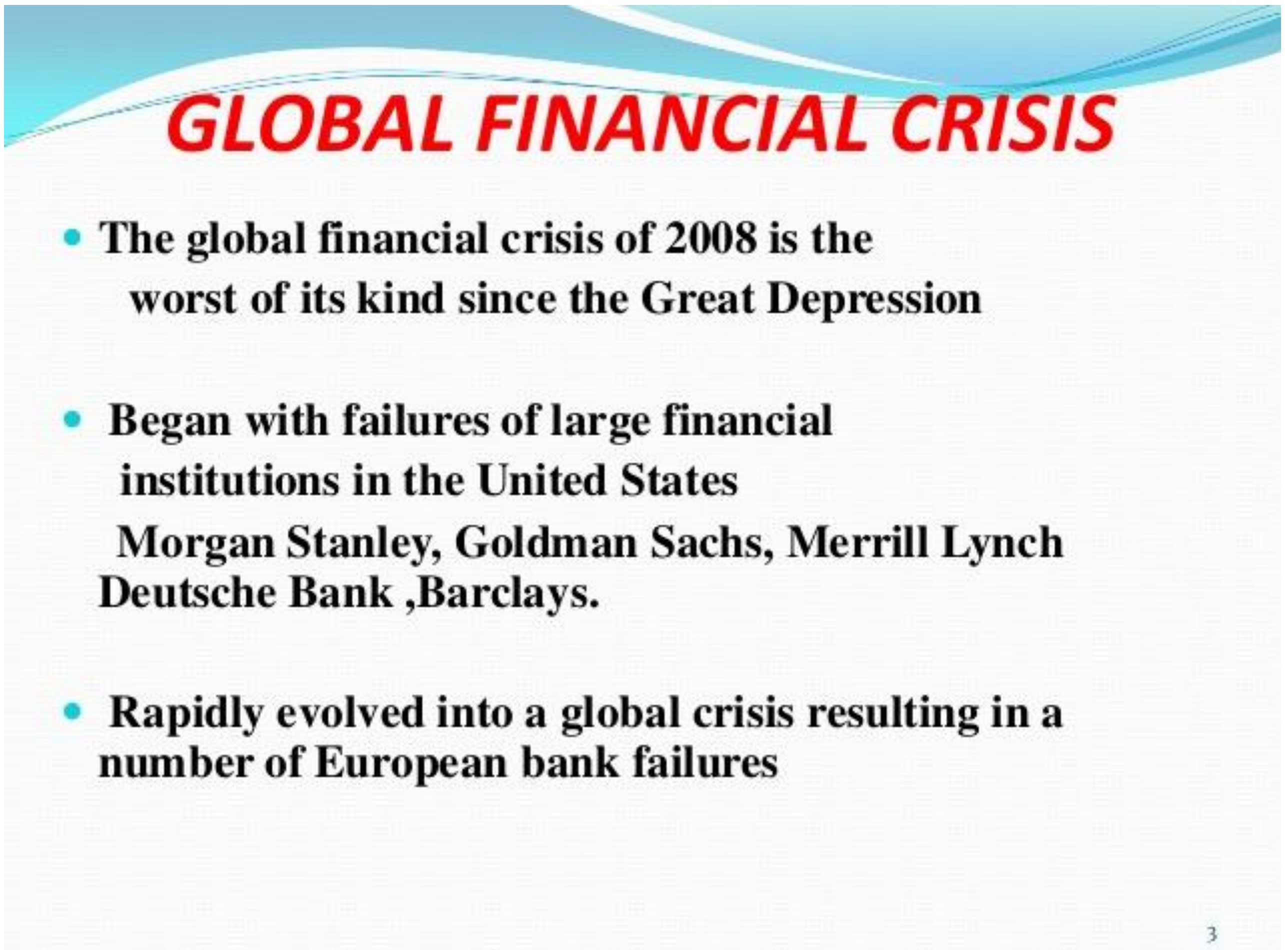
- **Consist of ideas, values, knowledge, invention, tech. & technological progress.**
- **Technology is frequently identified with technical knowledge & products made with devices that embody scientific engineering & technical knowledge.**
- **According to Frances Stewart *(Technology and Underdevelopment, 2nd ed. 1977)* consists of a series of production techniques. It includes the methods used in the marketed & nonmarketable activities, the nature and specification of the products and methods used. It includes the techniques used in production and marketing management, information systems, and covers the organization of production units and the scales of their operation. Technologies extend to all activities in agriculture, industries, infrastructure and services.**

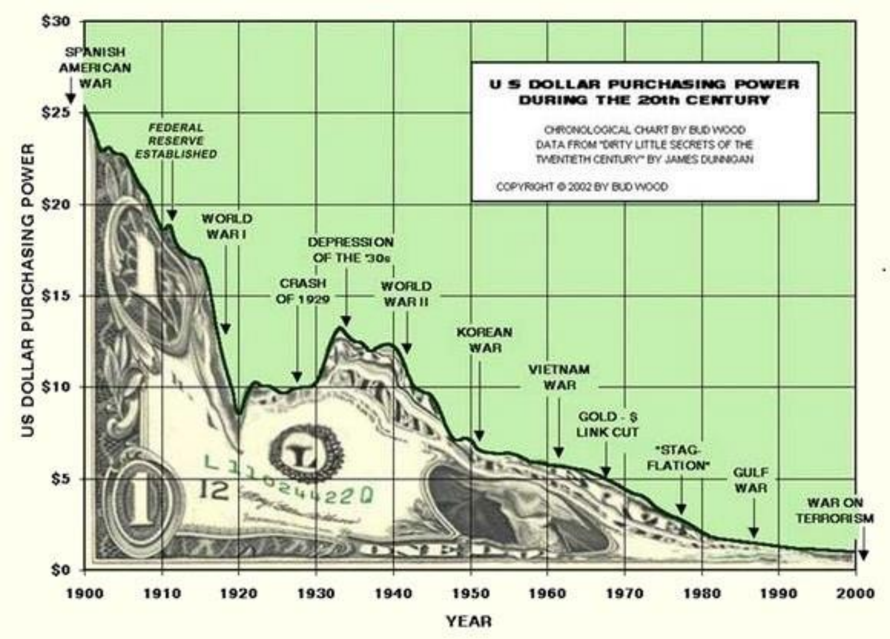
Global Financial Crisis in 2008 – Failures of Economic Theory

- **The Global Financial Crisis of 2007–08 is the worst financial crisis since the Great Depression of the 1930s.**
- **It threatened the collapse of large financial institutions, which was prevented by the bailout of banks by national govts, but stock markets still dropped worldwide.**
- **In many areas, the housing market also suffered, resulting in evictions, foreclosures & prolonged unemployment.**
- **The crisis played a significant role in the failure of key businesses, decline in consumer wealth estimated in trillions of U.S. dollars, & a downturn in economic activity leading to the 2008-2012 global recession & contributing to the European sovereign- debt crisis.**
- **The active phase of the crisis, which manifested as a liquidity crisis, can be dated from August 9, 2007, when BNP Paribas terminated withdrawals from three hedge funds citing "a complete evaporation of**

Global Financial Crisis 2008

Great Crisis of 2007-2008: Failures of Economic Theory

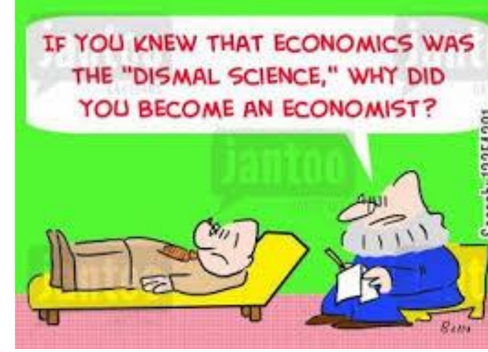




U S DOLLAR PURCHASING POWER DURING THE 20th CENTURY
CHRONOLOGICAL CHART BY BUD WOOD
DATA FROM "DIRTY LITTLE SECRETS OF THE TWENTIETH CENTURY" BY JAMES DUNNIGAN
COPYRIGHT © 2002 BY BUD WOOD
US DOLLAR PURCHASING POWER
YEAR
$30
$25
$20
$15
$10
$5
$0
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
SPANISH AMERICAN WAR
FEDERAL RESERVE ESTABLISHED
WORLD WAR I
CRASH OF 1929
DEPRESSION OF THE '30s
WORLD WAR II
KOREAN WAR
VIETNAM WAR
GOLD - $ LINK CUT
"STAG-FLATION"
GULF WAR
WAR ON TERRORISM

FOUR OUT OF FIVE ECONOMISTS AGREE THAT ECONOMICS IS INDEED "THE DISMAL SCIENCE."
NEWS
CARTOONSTOCK .com
Search ID: hscn1238
SCHWADRON

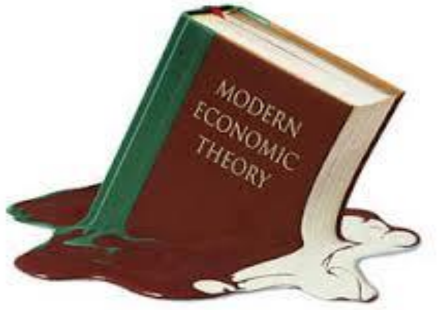
Is Economics a Dismal Science ?



- Economics has sometimes been called "The Dismal Science."
- But it's also called "the science of how people get a living."
- <u>Our daily lives are beset with economic questions</u>!
- Why is it so hard to buy a home?
- Why does the cost of college rise so fast?
- Why are willing- able workers unable to find jobs?
- What about us, the voting citizens — is basic economic literacy out of our reach?

- We are told, we need to ask the experts. But the experts tell us, "It's more complicated than that!"
- Referring to obscure formulas & charts, they pitch their arguments at each other.

Global Crisis of 2007-2008: Failures of Economic Theory



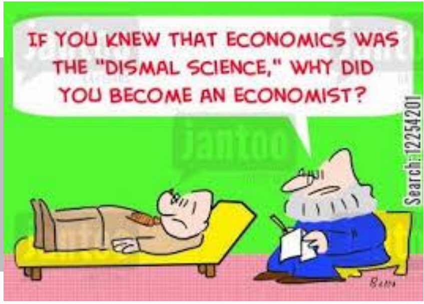
- The crisis that had shaken the world economy should push economists to wonder about the approach used to analyse economic phenomena.

- The crisis of 2008 was largely unpredicted. If economic theory has a role to play in predicting future catastrophes then the methods we rely on need to change. Some propose a new theory of economics based on more detailed understanding of how and why people behave as they do within their environment.

- Some authors show the weakness of traditional economic theory. The reasons for this are partly due to fundamental problems with the underlying General Equilibrium theory and partly to the unrealistic assumptions on which most financial models are based.

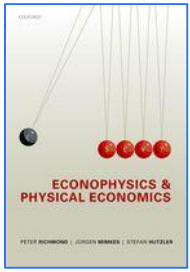
- What is happening to economic science if it is not able to recognize an economic crisis before it "steps on it"? How is it possible that the economic science was caught off guard yet again? Besides, what is the implication for the status of economics as a science if it is not able to successfully deal with real economic problems?

Global Crisis of 2007-2008: Failures of Economic Theory



- A few years back the dismal science was being acclaimed as a way of explaining even more forms of human behavior, from drug-dealing to sumo-wrestling.
- In the public mind an arrogant profession has been humbled. And on the public stage, economics were seen as far more trustworthy than politicians.
- In a recent lecture, Paul Krugman, winner of 2008 Nobel prize in economics, argued that much of the past 30 years of macroeconomics was "spectacularly useless at best, and positively harmful at worst."

Intellectual Resources: Econophysics



Emergence of Econophysics

- Physics is the most basic of sciences - its concepts & techniques underpin the progress of all other branches of science including Engg. & Now Economics.

Econophysics is an interdisciplinary research field, applying theories & methods originally developed by physicists to solve problems in Economics, usually those including uncertainty or Stochastic processes & Nonlinear dynamics.

Some of its application to the study of financial markets has also been termed statistical finance referring to its roots in Statistical Physics.

History of Econophysics

- Physicists' interest in the social science is not new; D. Bernoulli, as an example, was the originator of utility-based preferences. One of the founders of neoclassical economic theory, former Yale University Professor of Economics I. Fisher, was originally trained under the renowned Yale physicist, J.W. Gibbs. Likewise, J. Tinbergen, who won the first Nobel Prize in Economics in 1969 for having developed and applied dynamic models for the analysis of economic processes, studied physics with P. Ehrenfest at Leiden University.
- Econophysics was started in the mid-1990s by several physicists working in the subfield of statistical mechanics. Unsatisfied with the traditional explanations and approaches of economists - which usually prioritized simplified approaches for the sake of soluble theoretical models over agreement with empirical data - they applied tools and methods from physics, first to try to match financial data sets, and then to explain more general economic phenomena.
- One driving force behind econophysics arising at this time was the sudden availability of large amounts of financial data, starting in the 1980s. It became apparent that traditional methods of analysis were insufficient - standard economic methods dealt with homogeneous agents and equilibrium, while many of the more interesting phenomena in financial markets fundamentally depended on heterogeneous agents and far-from-equilibrium situations.
- **The term "econophysics" was coined by H. E. Stanley, to describe the large number of papers written by physicists in the problems of (stock and other) markets, in a conference on statistical physics in Kolkata in 1995 and first appeared in its proceedings publication in Physica A 1996.[The inaugural meeting on Econophysics was organised 1998 in Budapest by Janos Kertesz and I. Kondor.**

Indian School of Econophysics

- Kolkata can be considered as the epicentre of econophysics studies in India.
- Incidentally the term ‘Econophysics’ was coined by H. Eugene Stanley in second statistical physics conference at Calcutta University in 1995.
- The term ‘econophysics’ has been included in ‘The New Palgrave Dictionary of Economics’ (written by economist J. Barkley Rosser Jr). The entry starts with “According to Bikas Chakrabarti, the term econophysics was neologized in 1995 at the second Statphys-Kolkata conference in Kolkata (formerly Calcutta), India”.
- Another note “The physics of our finances” published in New Scientist in July 2012 highlighted the contributions from India. Recently an entry on econophysics has also been included in “Encyclopedia of Philosophy and the Social Sciences” published by SAGE Publications (2013) and the entry on it has been written by Bikas K. Chakrabarti.
- Several other books have been published by Indian econophysicists.

Econophysics

- Now, there are regular meeting series on the topic: e.g. **APFA, ECONOPHYS-KOLKATA, Econophysics Colloquium, ESHIA/ WEHIA.**
- In recent years network science, heavily reliant on analogies from statistical mechanics, has been applied to the study of productive systems.
- **Conf/Workshop at Kokata/New Delhi**

Econophysics – I, 2005

… …

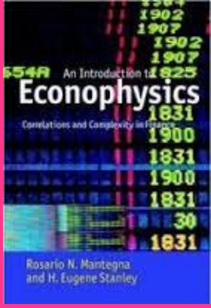
… …

Econophysics- VIII, 2014

Econophysics – IX, 2015 (New Delhi, Nov 27 – Dec 1, 2015)

Environmental, Social and Health Impact Assessment (**ESHIA**)' Heterogeneous Interacting Agents (**WEHIA**), **Association of Professional Financial Advisers** (**APFA**)

Econophysics



- The new science of 'econophysics' utilizes physics models to explain economic & financial behaviour.

- First neologized in 1995, this innovative research methodology combines non-linear models, scaling laws, statistical mechanics & the Cauchy-Levy distributions to explain economic & financial behaviour more robustly than traditional economic & financial tools, which predominantly utilize linear models & Gaussian distributions.

- Economics & finance will eventually absorb the powerful tools of econophysics as they continue to evolve as dominant social sciences.

Econophysics

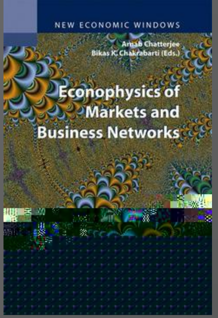
- **Statistical physicists studying fluctuations have uncovered two new empirical “laws".**

- **The first empirical law concerns the histogram giving the relative occurrence probability that a stock experiences a given price change; this histogram decreases as the given price change increases, with an apparent power law tail that describes fluctuations differing by as much as 8 orders of magnitude in this relative occurrence probability.**

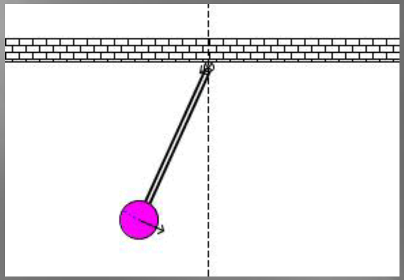
- **The second empirical law concerns a histogram of size changes of business firms, which has a width that decreases as a power law of the firm size for firms that range over roughly 8 orders of magnitude.**

- **In addition to such scaling laws, there appears also the analog of “universality" e.g., the analogous histogram of country size appears to obey the same scaling law, with the same exponent, as the histogram of firm size**

Econophysics - Application of ideas & concepts from physics to problems in finance & economics

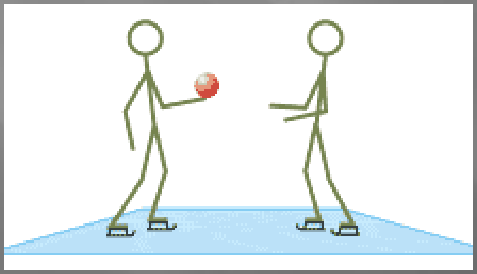


Econophysicists have recently been quite successful in modelling & analyzing various financial systems like trading, banking, stock & other markets. The statistical behavior of the underlying networks in these systems have also been identified & characterized recently.



Want to attract customers ? Marketing Analogy of Physics Principle

Entrepreneur Customer

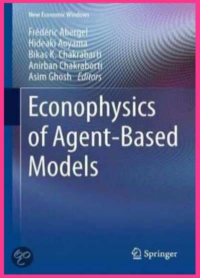


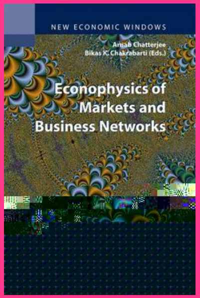
To explain how exchanging particles can attract two objects (it has to do with the Heisenberg Uncertainty principle), look at the picture.

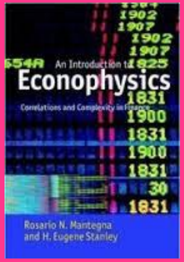
This suggests an obvious marketing analogy.

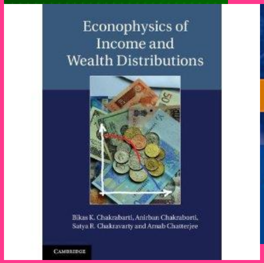
Want to attract customers? Stay in close contact by exchanging valuable content. Every time you share useful, enjoyable content – & they engage with it – you are nurturing the relationship & bringing them closer.

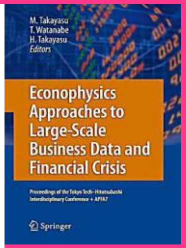
Econophysics - Books

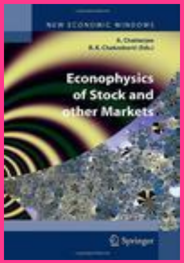


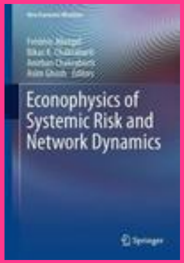












Econophysics: An Introduction, Sitavra Sinhe, an up-to-date Text book, Wiley

Essentials of Econophysics, Modelling – Oxford University Press. This book is a course in methods and models rooted in physics .

- **Econophysics and Physical Economics Oxford University Press**
  This book looks at these complex systems from the perspective of the physicist.
- **Econophysics, Elsevier, 978-0-12-404626-9**
  The remarkable evolution of econophysics research has brought the deep synthesis of ideas derived from economics and physics
- **Introduction to Econophysics, Correlations and Complexity in Finance**. Mantegna & Stanley
- Dr. Christophe Schinckus. Univ Leicester, He is currently working on **book on Econophysics (Oxford University Press)** and he regularly publishes papers in journals.

Econophysics - Conclusion

Econophysics can contribute to economics and finance. Topics of interest include, but are not limited to:

- **Agent-based modelling and econophysics**
- **Financial markets as complex systems**
- **Statistical and probabilistic approach of econophysics**
- **Simulations of dynamics of financial systems**
- **Computational models of stylized facts**
- **Alternative perspective in econophysics**
- **Experimental physics applied to finance.**
- **Creation of tools for financial systems monitoring, coordination failures or control systemic nstabilities.**
- **Development of a theoretical methodological bridge between econophysics and financial mainstream**

Post-crisis Economics: A European Response

- The global economic crisis has driven many economists around the world to seek alternative solutions to the western capitalist model which has proven to have some shortcomings. One prominent area of that research has been Islamic Economics and Finance. Based on the Muslim teachings of shari'a, this system differs significantly from conventional economics & finance, notably in the prohibition of interest & strong emphasis on moral ethics.

- In June 2010, IE Business School, with King Abdulaziz University, gathered in Madrid some of the world's foremost scholars, academics & practitioners of Islamic Economics & Finance to discuss how this alternative philosophy can be applied in western financial markets.

- ➔ specifically addressed the post-crisis application, as well as the Legal & Tax Implications, of this growing & relevant economic philosophy in Europe, including in Project Financing.

Divine Knowledge – Sharia Principles to Economics

- Sharia law differentiates Islamic finance from conventional finance. The Islamic financial system is constructed on economic concepts specified by *sharia* — a code of conduct that guides Muslims (the followers of Islam) in social, economic, and political matters. Sharia promotes balance and justice and discourages behaviors of excess. Some of the core ideas promoted by sharia include the following:

- **Allah (God) is the owner of all wealth**
- **An individual's needs must be balanced with society's needs**
- **Material pursuits must be balanced with an individual's spiritual needs**
- **Economic transactions should take place within a just, responsible, free-market economy**
- **In support of these principles, sharia prohibits business transactions based on the following: Interest, Uncertainty, Gambling, Prohibited products and industries**

Interest : Shariah Compliant Banking

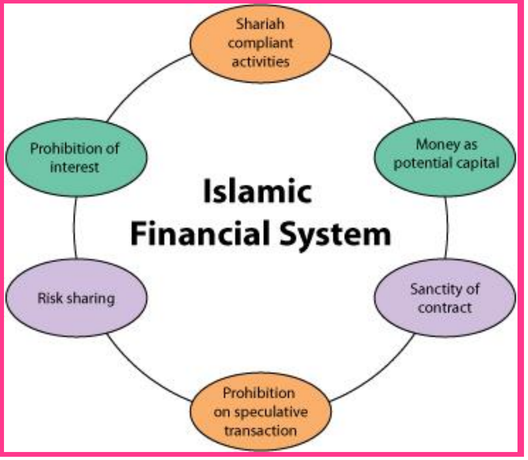
- **Sharia on Interest**

  يَا أَيُّهَا الَّذِينَ آمَنُواْ لاَ تَأْكُلُواْ الرِّبَا أَضْعَافاً مُّضَاعَفَةً وَاتَّقُواْ اللّهَ لَعَلَّكُمْ تُفْلِحُونَ

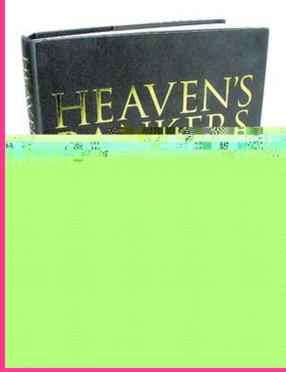
- The Quran (3: 130) clearly condemns *riba* (which is usually translated as "interest"): "O, you who believe! Devour not *riba*, doubled and redoubled, and be careful of Allah; but fear Allah that you may be successful."

  وَأَحَلَّ اللّهُ الْبَيْعَ وَحَرَّمَ الرِّبَواْ

  Allah has permitted trading and forbidden Riba (usury/Interest)



Unique Banking - Heaven's Bankers

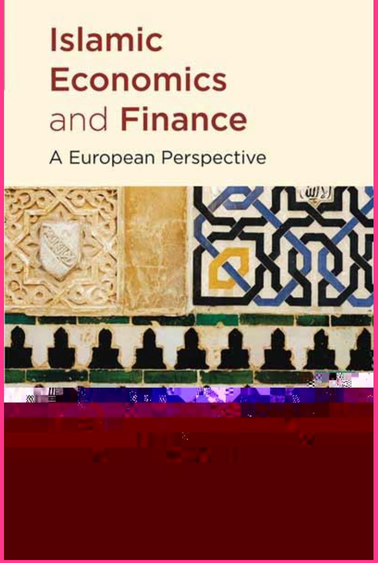


- Islamic banking is unique in the world of finance, mostly because of what is prohibited. There are some straightforward bans:

- No investing in businesses that deal with products considered *haram*, or forbidden, most commonly pork, alcohol etc.
- Speculative bets are barred, & transactions must be based on real assets, not cash flows.

- By far the most significant rule is the prohibition on charging interest. The ban is meant to reflect the particular ethical responsibilities bestowed upon financiers: Profits and losses should be shared between debtors & creditors.

- Sharia banking is a $2 trillion industry thanks to trade in emerging markets.



Contrast of Financial Systems

Divine Resource – Zakah

The institution of Zakah (purity) is instrument instituted by Islam to combat poverty & enhance welfare in the society. Zakah serves as a unique mechanism of compulsory transfers of income and wealth from the haves to the have-nots in the community.

Sharia Banking Is Growing Fast

- Sharia Banking is growing fast & the Mainstream Banks are offering Islamic Accounts. Its system of Shared Risks & Profits could offer a Model for the Financial Services of the Future.
- It is a system of finance that happily avoids the extremes of right & left, preferring to marry the freedom & innovation of the market economy to the fairness & balance of social democracy. It is called-take a deep breath-"sharia-compliant" finance, but has nothing to do with the beheading, amputations & stonings that some in the west automatically associate with Islamic sharia law.

Sharia Banking Is Growing Fast

- The reality is that Islamic finance is growing faster than any other subset of world banking, at an average annual rate of between 15 & 20%. IMF says the Nos. & reach of sharia-compliant financial institutions worldwide has risen from one institution in one country in 1975 to more than 300 institutions operating in more than 75 countries today.

- In 2008 alone, sharia-compliant assets across the globe have grown to > $639 bn. With this trend, Islamic finance will be more than $2.2 trillion mark in six years.

- In Britain, the Financial Services Authority has licensed five stand-alone Islamic banks-including the Islamic Bank of Britain, which has been reporting as significant increase in the number of non-Muslim customers applying for accounts since the start of the financial crisis. Bank officials say the numbers are growing because Islamic finance offers a "safer option" for savers & investors, regardless of faith.

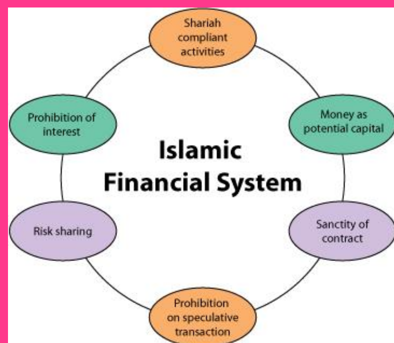
Islamic Finance *vs* Traditional Banking

- "When Islamic finance is growing 50% faster than traditional banking, and when global Islamic investments are set to grow to £1.3 trillion ($2.2 trillion) by 2014, we want to make sure a big proportion of that new investment is made here in Britain," Cameron told the World Islamic Economic Forum in London (Oct 2013) .
- This is the first time the conference on a meeting of 1,800 people from 115 countries, has been held in a non-Islamic nation. A number of world leaders attended, including King Abdullah of Jordan and the sultan of Brunei.
- **Britain wants to be a Mecca for Islamic investmentCountry to become first western nation to issue Islamic bonds, Prime Minister David Cameron tells World Islamic Economic Forum in London (Oct 2013).**

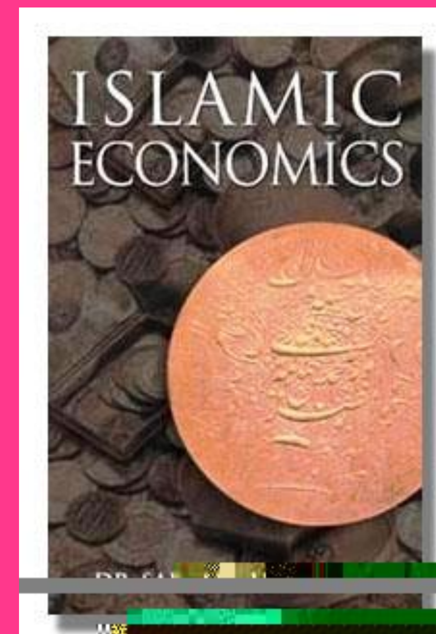
One of the 3 largest Islamic Banks in UAE

An Emirates Islamic branch. The institution is one of the three largest Islamic banks in the UAE, and has been recognised internationally for its dynamic approach

Books


Shariah compliant activities
Money as potential capital
Sanctity of contract
Prohibition on speculative transaction
Risk sharing
Prohibition of interest
Islamic Financial System


HEAVEN'S


ISLAMIC ECONOMICS

Is the growth of sharia finance opening the door to sharia law? – Critics say

- Sharia Compliant Finance ('SCF') is a growing area of finance in many UK banks & financial institutions.
- The UK Govt has also announced that the UK will be the first non-Muslim country to issue lunch a sharia bond.
- In 2013 (29 oct) London was the first city outside the Islamic world to host the 9th World Islamic Economic Forum and the govt released a document in which David Cameron says: "The future of Islamic Finance in the global economy looks bright. With 10 of the world's 25 fastest growing markets in Muslim majority countries, industry forecasts estimate that Islamic investments might grow to $ 2 trillion by 2014.
- This brochure profiles several legal, financial & education institutions that are offering SCF services of different kinds.

Islamic Finance Is Powering Britain's Economy

- **The London Stock Exchange is launching a new Islamic bond index in an effort to establish the City of London as one of the world's leading centers of Islamic finance.**

- **Britain also plans to become the first non-Muslim country to issue sovereign Islamic bonds, known as *Sukuk* (2014-2015).**

- **The plans are all part of the British government's strategy to acquire as big a slice as possible of the fast-growing global market of Islamic finance, which operates according to Islamic Sharia law and is growing 50% faster than the conventional banking sector.**

- **Although it is still a fraction of the global investment market -- Sharia-compliant assets are estimated to make up only around 1% of the world's financial assets -- Islamic finance is worth £1.3 trillion (€1.5 trillion; $2 trillion) by 2014, a 150% increase from its value in 2006, according to the World Islamic Banking Competitiveness Report 2012-2013.**

Britain: "A World Capital for Islamic Finance"

- http://www.gatestoneinstitute.org/4042/britain-islamic-finance

- "I want London to stand alongside Dubai and Kuala Lumpur as one of the great capitals of Islamic finance anywhere in the world." — David Cameron, Prime Minister, Great Britain. (**Soeren KernOctober 31, 2013)**

- But critics say that British ambitions to attract investments from Muslim countries, companies and individuals are spurring the gradual establishment of a parallel financial system based on Islamic Sharia law. The Treasury also said some *sukuk* Islamic bond issues may require the government to restrict its dealings with Israeli-owned companies in order to attract Muslim money.

International Centres & Forthcoming Conferences

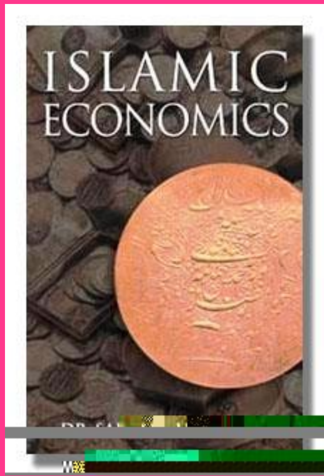
- **Durham Centre for Islamic Economics & Finance**

Pioneer in research and education in Islamic finance, economics & management for over 25 years.
The centre organises & sponsors intern. conferences on Islamic economics and finance in collaboration with other leading global academic institutions such as Islamic Research & Training Institute of IDB; Intern. Shari'ah Research Academy (Malaysia); Kyoto University (Japan) & others.

Saudi-Spanish Centre for Islamic Economics and Finance (Madrid, Spain).

Launched in 2009, it is a leading centre with a mission to be a hub for research, teaching promoting Islamic economics & finance amongst Spanish , Intern. Businesses, govt & future leaders.

Conference:
ICISEF (Intern. Congress on Islamic Economics & Finance)
21 – 23 Oct 2015 (Sakarya – Turkey)



Conference in Qatar (Centre for Islamic Econ. & Finance):

8th Intl Conf On Islamic Economics & Finance, 21-22 December 2011 Doha
10th Intl Conf. On Islamic Economics & Finance, 23 – 24 March 2015 Doha

Proposal for a new "Department of Econoshariah"

The Dept should be a full-fledged multidisciplinary study and research Department of a University with the mandate to offer undergraduate/graduate study and promote research and development activities in the field of Shari'ah based Economics.

The Department of Econoshariah should have branches including but not limited to:

Islamic Economics (Theory & Practice) ***11***

Real sector; Business Ethics; Consumer Ethics; Zakat, Waqf & Islamic Microfinance; Income distribution, poverty; Labor disputes; Waging practices; Behavioral economics; Government; Pricing; Developmental issues

Islamic Capital Markets 6

Sukuk; Islamic indices and mutual; funds; Asset management; Islamic financial literacy ; Takaful; Islamic ratings

Fiqh 5

Fatwa procedures; Shariah boards; Differences in FiqhJurisdictions; Halal food; Dispute settlements

Islamic Banking ***6***

Financing modes; Risk management & Stability; Islamic Banking practice; Liquidity Management; Corporate social responsibility; Accounting in Islamic Banking

Islamic Business 6

Marketing ethics; Leadership; Corporate governance and social responsibility; Taxation; Hiring practices; Halal industry

Holy Quran - "*Laisa lil insana illa ma sa'a*" --
There is nothing for man except what he strives for (53:39)

Thank You All

Allah Hafez

กรุณา. kòrp-kOOn

Contrast of Financial Systems

- Illiquid = not readily convertible into cash; not liquid.
- The state of a security or other asset that cannot easily be sold or exchanged for cash without a substantial loss in value. Illiquid assets also cannot be sold quickly because of a lack of ready and willing investors or speculators to purchase the asset.