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Academic Entrepreneurship and *Muamalat*: Risk and Money in Commercial Transactions from an Islamic Perspective

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ABSTRACT

Academic entrepreneurship involves the entrance of academic scientists into commercial ventures and activities. The basis of any relationship founded upon commerce is rooted in the desire of both parties involved in the exchange to benefit from the transaction. *Shariah* law establishes guidelines and principles to be applied to commercial transactions in order to ensure that transactions are compliant with Islamic morals and teachings. Focusing upon the role of contemporary money in commercial transactions, the present article distinguishes between the Islamic economy depicted by *Shariah* and the contemporary economy, with particular emphasis upon the function and nature of contemporary fiat money-based currencies. The use of contemporary moneys in contemporary domestic and international commercial transactions is considered in light of Islamic prohibitions on *gharar*, or risk and uncertainty, with particular emphasis on the effects of inflation and international currency exchange ratio fluctuation on the value function of contemporary moneys. In conclusion, policy implications and recommendations concerning commercial exchanges arising from academic entrepreneurship are considered in light of seeking to minimize, if not eliminate, risks arising due to the nature of the moneys utilized in contemporary commercial exchanges.

Keywords: Academic entrepreneurship, commercial exchanges, fiat money, gharar, muamalat

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ACADEMIC ENTREPRENEURSHIP AND *MUAMALAT*

Academic entrepreneurship has received increasing attention over the last three decades. This specific type of entrepreneurship involves academic scientists and organizations engaging in a

variety of different commercial activities and ventures. It has led to a closer relationship between academic research and practical application, a relationship that was argued to have been lacking in previous decades (Lacetera, 2005). Successful examples of academic entrepreneurship have included Gatorade, a drink originally designed by the staff of the University of Florida to more effectively rehydrate athletes, and Google, founded by collaborative research between two doctoral students from the computer science department of Stanford University. The commercialization of academic research, development and technology lie at the heart of academic entrepreneurship.

The commercialization of academic endeavors requires commercial exchanges, or transfers, between the academician, institution or organization to the public. It involves the sale of goods and services produced as a result of the entrepreneurial activities. The production of goods in academic entrepreneurship is a central theme of entrepreneurship (Feller, 2005). The introduction of new goods is generally perceived to be a function of large and existing firms, while entrepreneurs tend to be involved with the innovation and improvements of the quality in existing goods (Audretsch, Keilbach & Tamvada, n.d.) or the production of goods that serve as substitutions for imported goods (Bae & Park, 2011). However, academic entrepreneurship is often service oriented with services relating to research and development; consultancy; and the transferring of technology and knowledge, a result of the licensed use of patented or copyrighted processes. The decision to engage in academic entrepreneurship is risky as it could yield benefits or loss.

The potential benefits of academic entrepreneurship include increasing the revenue and wealth of the academic institution involved in or represented by such undertakings (Shane, 2004). The pros of academic entrepreneurship are also accompanied by risks, whether academic, reputational; or financial (Shattock, 2005). Academic or reputational risks are inherent in the potential effects of the academic institution or organization failing to live up to promises made during the pursuit of entrepreneurial activities. Academic entrepreneurship involves a significant amount of financial risks, particularly in relation to profits and losses, a facet shared amongst all entrepreneurial activities (Kaplan & Warren, 2010). As a result, the success or failure of the commercial activity or venture largely, if not completely, depends upon the successes or failures resulting from the transactions in which the entrepreneurial entity engages. Academic entrepreneurial activities, however, tend to be more risk averse than other entrepreneurs (Fini & Laceterra, 2010). The willingness to undertake risks is linked to the perceived strength of the academic research activities of the institution or organization (Shattock, 2005). One of the principal difficulties associated with academic entrepreneurship lies in a lack of understanding of professional practices and ideas associated with contemporary entrepreneurial and business

activities on the part of the academician, institution or organization engaging in academic entrepreneurship (Chell, Karatas-Özkan & Read, 2010). An understanding of the principal elements of risk in commercial exchanges is essential in minimizing it.

Within Islamic societies, the issue of risk in commercial exchanges is governed by *Shariah* law, which is established in accordance with principles and rules derived from the Qur'an; *sunnah*, or traditions of the Prophet Muhammad (SAW) contained within the text of *ahadith* compiled by Islamic scholars; *qiyas*, or analogies premised upon guiding principles contained within the Qur'an and *sunnah*; and *ijma*, or consensus amongst scholars (Kamali, 2009). *Fiqhmuamalat* is one of the principal branches of *Shariah* law and governs commercial transactions. Among the subject matter considered within the framework of *fiqhmuamalat* is the issue of *gharar*, or risk and uncertainty, and whether transactions can be considered permissible on the basis of superfluous risk and uncertainty on the part of one or both parties to a commercial transaction (Hassan & Mahlknecht, 2011). While individuals and organizations within Islamic societies are the more obvious beneficiaries of the consideration of transactions arising from academic entrepreneurial activities, from a *Shariah* perspective, it is actually a matter of concern to all who engage in such activities. Since the issues raised and approaches recommended are beneficial to any individual or organization engaging in academic entrepreneurship, the focus is upon the specific nature of contemporary moneys and the use of such financial instruments in contemporary transactions .

The present article focuses upon the reduction, if not complete avoidance, of risks associated with transactions involving money as a counter-value for goods and services arising from academic entrepreneurial activities in accordance with Islamic guidelines established by *Shariah*. Firstly, the differences between the Islamic economy depicted in *Shariah* sources and the contemporary economy are surveyed. Secondly, the distinctions between the two economies are then considered in light of the *Shariah* prohibition upon *gharar*, with a particular focus upon issues concerning the continuing relevance and applicability of the Islamic prohibition in contemporary economic activities. Thirdly, issues concerning inflation, currency exchange ratios and the value of contemporary moneys are examined. The valuation of contemporary moneys is then considered in light of *Shariah* prohibitions against *gharar* in economic transactions. Finally, recommendations are made regarding the management of risks associated with contemporary moneys when engaging in academic entrepreneurship from a pragmatic and *Shariah* compliant perspective.

THE ISLAMIC ECONOMY DEPICTED BY *SHARIAH* AND THE CONTEMPORARY ECONOMY: ECONOMIC EXCHANGES AND TRANSFERS OF VALUE

In activities related to academic entrepreneurship, the transactions will

consist of economic exchanges, or transactions whereby goods and services are acquired and/or distributed. When analyzing contemporary practices in light of *Shariah* law, an individual or scholar must bear in mind that activities and practices have evolved since the compilation of the texts of the Qur'an and *sunnah*. As a result, the principles and guidelines contained within the two aforementioned bodies of text should be interpreted in a manner that reflects contemporary practices (Siegfried, 2001). Contemporary economies differ from the Islamic economy depicted in *Shariah* sources in regards to the nature of economic exchanges, the types of moneys utilized in economic exchanges, and the valuation of the moneys utilized in economic exchanges.

The first principal distinction that can be drawn between the economy depicted by *Shariah* sources and contemporary economies relates to the nature of the exchanges that take place. In *ahadith* referring to economic practices, two distinct practices are considered: barter exchanges and economic exchanges using money as a counter-value. Barter economies are premised upon the direct exchange of a set of goods, services or commodities for another set of goods, services or commodities whose respective values are perceived as equivalent by the parties of the transaction (Fine, 2002). The fact that no society has ever relied primarily upon a barter economy (Humphrey, 1985), as such economies have always existed alongside either gift or market economies (Humphrey & Hugh-Jones, 1992), is reflected in *Shariah* sources by the consideration of economic exchanges involving money, albeit in the form of gold and silver which is explored further below.

The fact that contemporary transactions primarily, if not almost exclusively, involve the use of moneys as counter-values for goods, services and commodities is not a novel observation. However, no essential distinction exists between barter exchanges and contemporary exchanges, whereby the economic exchange is completed utilizing money as a counter-value (Schumpeter, 1994), since the transaction is concluded between two parties who view the value of the goods, services or commodities as equivalent to the money exchanged. Irrespective of the items and counter-values exchanged during a transaction, the issue of paramount importance is the perceived *value* of the items involved in the exchange, rather than the *characteristics* of the items and counter-values themselves.

The second principal distinction between the economy depicted in *Shariah* sources and contemporary economic exchanges concerns the type of money utilized in such exchanges. Two types of money were utilized in economic exchanges depicted by *Shariah* sources: commodity money; and *fulus* and *maghshush*. Commodity money simply consists of a specific good or commodity that is utilized as a unit of exchange (von Mises, 2009), representing a value against which all other goods, services and commodities are measured (Menger, 2009). *Shariah* sources indicate that gold and silver were utilized as commodity money, referred to as *dinar* and *dirham* respectively,

a practice which was common during those times. Precious metals had become a virtually universal monetary standard due to their durability, portability, divisibility, quality, opportunity cost and stability of value (Eachern, 2008), as well as factors relating to their utility, ornamental beauty, relative scarcity, geographic distribution, and high market demand (Menger, 2009). *Fulus* and *maghshush*, on the other hand, were typically coins minted from a less valuable metal, such as copper or brass, and accepted for the purposes of economic exchanges (Siegfried, 2001). The significant distinction between commodity money; and *fulus* and *maghshush* was that the latter were a form of token money that could represent a value greater than the actual value of the material utilised in the coin (Mukherjee, 2002), of which value was established by the government or issuing authority (Siegfried, 2001). The distinction between the two types of money was that gold and silver had a specific market value and were utilised for large purchases and international economic exchanges, while *fulus* and *maghshush* were intended for small local economic exchanges, such as buying small quantities of foodstuffs. The *fulus* and *maghshush* possessed a par value that was often regulated by the issuing authority; and were often utilized to provide smaller denominations of money for the purposes of providing change for payments received in silver and gold. The practice of Islamic societies is supported by archaeological research and findings concerning trade and commerce between Islamic societies and surrounding regions (Noonan, 1974).

Contemporary moneys are further distinguished from the moneys depicted in *Shariah* sources on the basis that they are fiat money. Although money was predominantly commodity based throughout history, such monetary systems began to disappear in the nineteenth century. The introduction of commodity-backed money began with the introduction of notes as a form of money, issued by warehouses in ancient Egypt (Green, 2009). Later it was introduced by merchants and banks in Europe (Furnham & Argyle, 1998), and this eventually led to the minting of coinage, which marked the beginning of government regulation and control of the money supply (Cesarano, 2008). Banks and governments, however, began to recognize advantages in monetary systems which were not backed by an underlying good or commodity (Moore, 2003). The virtual universal withdrawal from commodity backed money to fiat money began in the twentieth century, with many monetary systems consisting of fiat money by the signing of the Bretton Woods Agreement. This was following the Second World War that established par values for fiat moneys in relation to the US dollar, which was still commodity-backed money. Following the withdrawal of the US from the gold standard in 1971, fiat money had become the universal standard of currency (Bagus, 2010). Having completely separated currency from objective values associated with commodities, banks and governments could produce a virtually limitless supply of currency and credit money, with the banks making significant gains through loans and investment (Moore, 2003), while

the government reaped extensive gains from inflation, taxation and other revenues associated with its monopoly over the printing of currency (Hülsmann, 2008).

The third principal distinction between the moneys depicted in *Shariah* sources and the money utilized in contemporary transactions lies in the manner in which the moneys attain their value. Commodity money in practice was essentially a form of barter (Cencini, 2001), whereby specific commodities fulfilled the functions of a medium of exchange; a unit of account; and a store of value, (Greco, 2009). In simple terms, the value of commodity money was representative of the value of the underlying commodity, whose value was in turn determined by the market forces of supply and demand. Fiat money, on the other hand, has no intrinsic value. Fiat money initially gained its value from the trust and confidence of the public that the money would be accepted (Mihm, 2009), only to be reinforced later by legal tender laws that mandated such money must be accepted within the territorial jurisdiction of the issuing authority. Contemporarily, fiat money acquires its worth from a 'value convention', which is based upon local and national practices relating to exchanges and premised upon the cultures, customs and traditions of the collective. The 'value convention' remains intact as long as the banks and government institutions are able to maintain credibility, credence, reputation, confidence, social recognition and 'brand-name value' of the currency in the eyes of the public (Bonus, 2001). In the end, fiat money is simply currency, where the store of value function has been dominated by its function as a medium of exchange. It is without an objective value premised upon an underlying commodity; the actual 'value' of the money today consists of a hope or expectation that the money will retain some type of purchasing power tomorrow (Shubik, 1999).

Despite the fact that *fiqhmuamalat* is readily applied to contemporary transactions, significant distinctions exist between the Islamic economies depicted in *Shariah* sources and contemporary economies. Firstly , the Islamic economies depicted in *Shariah* sources consisted of both barter exchanges and exchanges utilizing money as a counter-value, whereas contemporary economic exchanges are almost exclusively exchanges involving the use of money as a counter-value. Secondly, while the type of currencies utilized in the economies depicted by *Shariah* sources consisted of a combination of commodity moneys and token moneys, contemporary economies involve transactions that exclusively utilize money as a counter-value that differs little from *fulus* and *maghshush* in practice. Thirdly, the two monetary systems differ in regards to the manner in which the money utilized attains value. While commodity moneys retain a value consistent with the market value of their underlying commodity and token moneys possess intrinsic value, albeit inflated, fiat money attains its value from the trust, confidence and hope of the persons which utilize such moneys for the purposes of contemporary economic

exchanges. Finally, the distinction between contemporary moneys and commodity-based monies lies in the fact that the former attains a value which is purely abstract and financial in nature; whereas the latter attains a value linked to the market value of the underlying commodity, and therefore possess actual economic value. The question that needs to be addressed now concerns the manner in which *Shariah* principles and guidelines can be applied in light of such nuances.

GHARAR: PRINCIPAL THEMES AND APPLICATION

Fiqhmuamalat contains rules and guidelines concerning economic exchanges that are premised upon *Shariah* sources with the ambit of promoting or establishing an Islamic moral economy (Karim, 2010). Although *Shariah* sources recognize that engaging in commercial transactions will always involve elements of risk due to the nature of markets and business ventures generally, the prohibitions against *gharar* focus upon the elimination of unnecessary or avoidable risks in economic exchanges. Prohibitions against *gharar*, or significant risk and uncertainty in economic exchanges, exist alongside *maysir*, or gambling (Vogel & Hayes, 1998), and *riba*. This applies to a broad category of potential offenses resulting in the unjustified increase, addition or growth of benefits arising from a transaction (Chapra, 2008), as the fundamental elements of prescriptions concerning economic exchanges under *Shariah* law (Hitti, 2007). *Gharar* is closely linked to the prohibitions upon *riba*, specifically *riba al-fadl*, as both seek to ensure just and fair transactions free from uncertainty resulting in unjustifiable benefits of one party to an exchange at the expense of the other (Chapra, 2011). Most contemporary definitions and explanations generally focus upon undue risk and uncertainty arising in relation to transactions (Abdul-Rahman, 2010; Zahraa & Mahmor, 2002; Vogel & Hayes 1998; and Farook & Shikoh 2011), irrespective of whether the uncertainty or deception was intentional or unintentional by either or both parties to a transaction (El-Gamal, 2006). However, unlike the prohibitions against *riba* and maysir, the prohibitions against *gharar* do not appear in the Qur'an, but stem from prohibitions contained within *ahadith* (Al-Saati, 2003). Therefore, the prohibition against *gharar* needs to be considered in light of the manner in which references to the prohibition are described within *ahadith*, in light of consensus reached amongst scholars concerning the interpretation of the prohibition, and the manner in which the prohibition should be applied to contemporary economic exchanges.

The prohibitions against *gharar* contained within *ahadith* are not precisely defined or explained within *ahadith* (Vogel & Hayes, 1998), although the examples contained within the texts provide a considerable basis for the use of *qiyas* to determine the parameters of the prohibition. *Ahadith* compiled by Imam Muslim indicate that the Prophet Muhammad (SAW) forbade transactions involving *gharar* (Siddiqi, 1987, 3615),

citing examples including the conclusion of a transaction involving garments without inspection or mutual agreement (3608-3613), exchanges involving unknown quantities of dates (3654-3655), transactions where the defects of an object of sale are not known or concealed from a party to a transaction (3661-3664), and the sale of fruits before they are ripe or their quality can be established (3665-2713). *Ahadith* compiled by Imam Bukhari address the issue of *gharar* in a similar fashion, establishing the prohibition of sales involving *gharar* by the Prophet Muhammad (SAW), such as the sale of fish in the sea and birds in the sky (Khan, 1984). Further examples cited include transactions involving items which are not in the possession of the seller (342-346), the sale of what was in the womb of an animal (353), transactions involving the sale of items without first being touched or examined (354-357), selling unmilked livestock at a higher price due to the presence of an unknown quantity of milk (358-361, 373), transactions involving dates which have not been dried and may be susceptible to blight or spoiling (389), and the sale of fruits before being ripe, when their benefits are evident (396-403).

The interpretations by Islamic scholars of the prohibitions against *gharar* utilized in the present work stem from the points of relative consensus, or *ijma*, concerning *gharar* amongst scholars from the four principle Sunni *madhab*, or schools of thought. Although considerable disagreement exists between scholars of the four Sunni *madhab* concerning what level of uncertainty may exist in a transaction before the transaction is rendered invalid under *Shari'ah* (Vogel & Hayes 1998; Al-Saati, 2003; and El-Gamal, 2001), consensus between the four Sunni *madhab* has been obtained regarding the general features and prohibitions associated with *gharar* in transactions. Essentially, *Shari'ah* principles concerning *gharar* mandate that the terms must be certain, defined and unambiguous, effectively prohibiting two specific types of transactions: the sale of items not yet in existence; and exchanges or contracts with significant uncertainty concerning duration or costs (Hamoudi, 2008). In the analysis of the prohibition of *gharar*, Al-Dhareer (1997) establishes four universal conditions for a transaction to be invalidated: the *gharar* must be major, although the determination of what constitutes 'major' differs between the *madhab*; the contract effected must be a commutative financial contract; *gharar* must affect the principal components of the contract, such as price and object of sale; and there is no need met by *gharar* that cannot be met otherwise.

The prohibition of *gharar* is understood by contemporary Islamic jurists and scholars to be based upon a cost-benefit analysis (El-Gamal, 2001). The relationship is of significant importance as it outlines two facets of an economic transaction that are inherently premised upon the value of the finished product, in the case of the buyer, and the value of the materials, labor and other expenses incurred when producing the good or service, in the case of the seller. Ibn Juzay compiled a list of ten instances

consisting of *gharar* which are expressly forbidden (Zahraa & Mahmor, 2002), three of which are of particular interest for the present discussion:

1. "Lack of sufficient knowledge regarding the type of the price or the subject matter."
2. "Lack of sufficient knowledge regarding the characteristics of the price or the subject matter."
3. "Lack of sufficient knowledge with regard to the quantum of the price or the quantity of the subject matter."

The terms 'cost', 'benefit' and 'price' all share a common foundation rooted in the assessment of the value of a good, service or commodity, particularly in regards to a sum of money, in contemporary economic exchanges.

The application of the principles associated with *gharar*, particularly in regards to assessments of value, need to be considered in light of the actual nature of any economic exchange, supported by both *Shariah* sources and their analysis, and secular scholars in the field of economics. The position of the buyer and seller are not absolute, as may be assumed in contemporary economic exchanges whereby a buyer is typically denoted as the person with money and a seller is typically the person with a supply of goods, services or commodities. The absolute position of the buyer and seller in an economic exchange contradicts the conclusion reached by Schumpeter concerning the lack of theoretical distinction between barter exchanges and contemporary economic exchanges involving money; and the synonymous application of *Shariah* principles to both barter exchanges and exchanges involving money, as noted above. This provides a basis, if not an imperative, for the careful examination of the type, characteristics, and quantum of the moneys utilized in economic exchanges.

While Siegfried (2001) notes that the nature of moneys can give rise to issues concerning *gharar*, the premise of the relationship between *gharar* and money is not explained. The premise behind the application of prohibitions against *gharar* to contemporary moneys lies in the existence of a relative position of the buyer and seller in any given economic exchange, irrespective of whether money is utilized. In effect, any economic exchange involving money involves a transaction of x units of money for y units of a good, service or commodity, and *vice versa*. Therefore, a transaction can be described as one party selling/exchanging y units of goods, service or commodity for x units of money; or described as one party selling/exchanging x units of money for y units of goods, service or commodity, as both descriptions validly represent the nature of the economic exchange. Accordingly, both the money and the goods, services and commodities involved in the transaction can interchangeably be said to be items of value and counter-values; and objects of sale and price, thus subject to examination of their respective value, characteristics and quantum, as emphasized by Ibn Juzay.

Despite the lack of precise definition of *gharar* within *ahadith*, the use of *qiyas* by scholars within the four Sunni *madhab* has resulted in a considerable degree of *ijma* concerning the permissibility of risk or uncertainty in transactions. While contemporary economic exchanges typically involve the use of money to acquire goods, services or commodities, this facet of contemporary transactions does not prevent similar examinations or scrutiny of the type, characteristics and quantum of the moneys utilized in economic transaction. Quite conversely, *Shariah* prohibitions against *gharar* inherently encourage, if not establish an imperative for, such examinations of the moneys utilized in transactions to determine whether both parties to an economic exchange are giving and receiving items perceived to be of equivocal value.

CONTEMPORARY MONEY AND RISK: INFLATION, CURRENCY EXCHANGE RATIOS AND VALUE

In contemporary economic exchanges involving moneys as counter-values, the question that is raised in relation to *gharar* is the manner in which the money(s) utilized in economic exchanges attain their value. As noted previously, contemporary moneys are purely fiat moneys that attain their value in a purely abstract and financial form. When engaging in academic entrepreneurial activities, commercial activities involving economic exchanges are necessary in order for the venture to be deemed successful. Since the costs and benefits associated with economic exchanges are inherently value-based assessments, the application of principles associated with *gharar* must take into account the manner in which moneys attain their respective empirical values in two distinct types of exchanges: domestic economic exchanges and international economic exchanges.

In domestic economic exchanges, local money is utilized as a counter-value to acquire goods, services or commodities. Meanwhile, in international economic exchanges, a minimum of two different local moneys are inevitably involved. In situations where goods, services and commodities are exchanged between parties in different countries, currency exchange ratios are utilized to determine the equivocal and desired value of the item(s) involved in the exchange. Irrespective of which of the local moneys is utilized in the transaction, the value of the goods, services or commodities involved in the transaction are gauged in reference to the value of such items in relation to the value of the local money, or currency, of the parties to the transaction. The distinction between the use of local monies in the two types of exchanges is that domestic exchange inherently require one ratio, the value of the good, service or commodity in relation to the value of the local money, whereas an international economic exchange requires multiple ratios, relating to the value of the good, service or commodity in relation to the value of the local money of each of the parties

to the exchange and the value of the local money in relation to the value of the foreign money utilized to complete the transaction. Given the fact that assessments of value in contemporary economic exchanges resulting from academic entrepreneurship may involve either local or international parties, it is necessary to explore the means by which contemporary moneys attain their value for the purposes of the two aforementioned economic exchanges.

The principle issues associated with the value of local moneys relate to inflation, or the decrease in value of the local money, and deflation, which is an increase in the value of the local money. The manner in which local moneys attain their value for the purposes of domestic economic exchanges, however, is considered from an inflationary perspective, rather than a deflationary perspective. The reason is that while deflationary episodes were prevalent prior to 1945, most contemporary governments and central banks endeavor to ensure that inflation continues, albeit at a managed and stable rate (Burdekin & Siklos, 2004). Inflation results in greater amounts of money being required to conclude an exchange. Inflation can be caused by cost-push inflation, whereby increases in wages and raw materials result in an increase in prices; demand-pull inflation, whereby an economy grows too quickly and demand begins to outstrip supply causing an increase in prices; monetary supply fluctuation, whereby the government or central bank expand the existing pool of money in circulation; tax rates, such as sales tax and other indirect taxes; and expectations, whereby the fear of an economic downturn and the attempt of the general public to protect their individual living standards results in inflation (Tribe, 2011). Inflation, ever present within contemporary monetary systems, can be relatively low and stable. In certain instances, however, inflation can increase dramatically and unpredictably over a short period of time, leading to a dramatic decrease in the value of the local money. Such instances of hyperinflation is ,argued to occur solely following revolution, civil war and collapse of a government (Lipsey & Chrystal, 2007). The simple fact is that the existence of inflation causes varying degrees of uncertainty regarding the value of the currency utilised in economic transactions (Wannacott & Wannacott, 1990).

Contemporarily, the values of local currencies, for the purposes of international economic exchanges, are primarily defined in relation to the supply and demand for specific currencies in international markets, which is affected by numerous economic, political and psychological factors (Macesich, 1996). Economic factors are argued to include interest rates and foreign investment in the country in question; balance of payments, which applies to trade flows between two countries; domestic stock

exchange activity; and the demand for the exports of the country in question. Political factors include government policy and central bank intervention affecting currency value; and political stability (Whittington & Delaney, 2012). Finally, psychological factors affecting currency exchange rates include the perceived credibility of statements concerning intervention and inflation rates of the government and central bank (Gonçalves, 2008), as well as expectations concerning the future value of the currency or future trade performance. This can result in the strengthening or weakening of the currency exchange rate of a given country, referred to as a 'shadow exchange rate' (Becker, Gelos & Richards, 2000). As a result of the numerous factors that influence currency exchange rates, the rate of exchange between two currencies changes minute to minute and hour to hour (Burton & Brown, 2009).

The manner in which contemporary moneys attain their values for the purposes of economic exchanges highlights two common elements of significant importance relating to the valuation of moneys at the local and international levels. Firstly, various factors affect the valuation of moneys at the local and international levels. Market factors continue to play a role in the valuation of money, as demonstrated in regards to demand-push and cost-pull inflation in domestic valuation; and issues, such as the balance of payments and demands for exports in the international valuation of currency. However, the non-market factors, or political and psychological factors, have a significant impact on the valuation of the money supply. The relationship between the two categories of factors effectively involves the ability of the government and central bank to regulate the money supply and maintain the economy; and whether people generally have faith and confidence in the credibility of the government and central banks to perform those functions. Secondly, as a result of the combinations of factors that can potentially affect the value of money, only one thing is certain: the value of money, at present and in the future, is uncertain.

DOMESTIC EXCHANGES AND INTERNATIONAL EXCHANGES: EFFECTS OF FLUCTUATION OF MONETARY VALUE ON COMMERCIAL TRANSACTIONS

As demonstrated in the previous section, theoretical issues exist in relation to the manner in which contemporary moneys attain their value. This is specifically related to the uncertainty surrounding the effects of the various factors upon the local and international value of the money(s) utilized in contemporary economic exchanges. The practical effects of the resulting uncertainties surrounding the value of contemporary moneys, however, are easily demonstrated. The following examples provide insight into the resulting issues, in practice, concerning both domestic and international economic exchanges. Utilizing relevant data and

statistics concerning monetary values and currency exchange ratios from 2011, the effects of the fluctuation in value are demonstrated in relation to spot exchanges and deferred payments. This is in the case of domestic exchanges; and international economic exchanges involving spot exchanges and forward contracts, as well as international economic exchanges generally.

Domestic Exchanges

In domestic spot exchanges, the two parties agree to an immediate transfer of goods, services or commodities based upon the perceived equivocal value of the counter-value offered in exchange. As demonstrated in Table 1 below, relating to the calculated monthly inflation rate during 2011 for US and Malaysia, inflation occurs throughout the year with few exceptions. However, the actual effect upon the value of the money utilized is minimal over a short period of time in both cases, as demonstrated in table 2, and unlikely to amount to a significant devaluation while a spot exchange is being completed. Therefore, spot exchanges involving the use of local moneys are relatively free from the risks outlined in the prohibition upon *gharar* in *Shariah* law.

TABLE 1
Inflation Rates (Percentages), Calculated Monthly, for the US and Malaysia, 2011*

	US	Malaysia		US	Malaysia
January	0.48	0.59	July	0.09	0.19
February	0.49	0.49	August	0.28	0.19
March	0.98	0.09	September	0.15	0.19
April	0.64	0.29	October	-0.21	0.19
May	0.47	0.29	November	-0.08	0.09
June	-0.11	0.29	December	-0.25	0.09

TABLE 2
Monthly Calculations of the Effects of Inflation in 2011 on the Purchasing Power of the US Dollar and the Malaysian Ringgit, Demonstrating the Value of the US Dollar and Malaysian Ringgit Against the Same Money, Respectively, in December 2010

	US	Malaysia		US	Malaysia
January	0.995223	0.994134	July	0.970158	0.977990
February	0.990370	0.989287	August	0.967445	0.976135
March	0.980759	0.988398	September	0.966000	0.974284
April	0.974521	0.985539	October	0.968033	0.972437
May	0.969963	0.982690	November	0.968808	0.971562
June	0.971031	0.979848	December	0.971236	0.970688

*Information concerning inflation figures, based upon the consumer price index (CPI) for the United States of America, was obtained from the United States Department of Labour, Bureau of Labor Statistics, available online at http//:www.bls.gov/pub/special.requests/cpi/cpiai.txt. Information concerning inflation figures, based upon the CPI for Malaysia, was obtained from Bank Negara Malaysia, Central Bank of Malaysia, available at http://www.bnm.gov.my/files/publication/msb/2012/5/xls/3.5.8.xls.

However, in the event of deferred payments, whereby money is received for goods, services or commodities after a prolonged period of time, the potential risks increase with the amount of time between the agreement and the completion of the exchange; and with the increase in the amount of money involved in the economic exchange. Over the course of one month, the value of each unit of US Dollar (USD) and Malaysian Ringgit (MYR) could have decreased by 1 cent or 1 *sen* respectively. While this amount seems relatively minor, one must remember that the greater the amount of money involved, the greater the amount of value is lost as a result of inflation. An agreement, concluded in December of 2010, to pay USD 50,000 or MYR 50,000 in March of 2011 would have a value equivalent to USD 49,037.95 and MYR 49,419.90, respectively, at the time that the agreement was concluded. To summarize, while economic exchanges involving deferred payments can be conducted, the more significant the amount of time and money involved in the agreement, the greater the risks faced by the parties to the exchange.

While the two previous findings hold true in the case of monetary stability, the same cannot be said of times involving financial crisis or hyper inflation. In Indonesia in 1998, for example, following the Asian Financial Crisis of 1997, the average monthly inflation rate was 4.96 percent, reaching as high as 12.67 percent in February of 1998 and resulting in an annual inflation rate of 78% for 1998 (Ramakrishnan & Vamvakidis, 2002). In certain circumstances, hyperinflation has occurred and resulted in the value of the currency plummeting to almost nothing. The effects of hyperinflation have been felt in Germany following World War I, with the monthly inflation rate reaching as high as 332 percent; in Serbia in 1993, where the annual inflation rate reached 302 million percent (Lipsey & Chrystal, 2007); and in Zimbabwe in 2008, where the inflation rate in July of 2008 was estimated at over 231 million percent and 516 quintillion percent in November of 2008 (Wiggin & Buker, 2012). Although hyperinflation is argued to occur only following revolution, civil war and collapse of a government (Lipsey & Chrystal, 2007), the simple fact is that the existence of inflation causes varying degrees of uncertainty regarding the value of the currency utilised in economic transactions (Wannacott & Wannacott, 1990). The rapid increases in inflation and comparative decrease in value of money has been demonstrated to be the result of contemporary moneys being based upon a fat standard, rather than a commodity standard (Rolnick & Weber, 1997).

Following the Asian Financial Crisis of 1997, the inflation rate in Indonesia between January and February was 12.67 percent, indicating that IDR 200.00 in January of 1998 was the equivalent of IDR 225.34 by February of 1998. Again, if inflation occurred consistently over a 31 day period, the price would have to increase by IDR 0.82 per day to account for the decrease in value of the currency. In the case of hyperinflation,

the daily increases were significantly more drastic. In Germany, DM 200.00 in July of 1923 was the equivalent of DM 5,063.56 by August of 1923, indicating that prices would have to increase by an average of DM 156.89 per day to adjust for inflation. In the case of Serbia in 1993, the inflation rate for the month of December alone was over 1 million percent (Bethlehem & Weller, 1997), meaning that 200 Serbian Dinars (RSD) at the end of November of 1993 were (optimistically) the equivalent of RSD 20,000,000 in December of the same year, indicating that prices would have to increase by RSD 645,154.84 per day to adjust for inflation. The situation in Zimbabwe in 2008 is more difficult to measure, due to the lack of accurate reported information, but the price changes due to inflation represented an increase of almost 98 percent per day in November of 2008 (Groh, 2009), indicating that 200 Zimbabwean Dollars (ZWD) on day 1 would be the equivalent of roughly ZWD 396.00 on day 2 and ZWD 784.08 on day 3. During periods involving inflationary spikes or hyperinflation, neither spot exchanges nor deferred payments, involving local currency as a counter-value, could be deemed to possess minimal risk, as required in accordance with prohibitions upon *gharar*, due to the rapid devaluation of the local money. Therefore, the use of local money to conclude economic transactions during such periods should be restricted, if not avoided altogether.

International Exchanges

While spot exchanges are desirable during times of monetary stability in the case of domestic economic exchanges, the same cannot necessarily be said in the case of spot exchanges in the context of international exchanges. In international transactions involving a spot exchange, a spot exchange rate, or the rate of exchange applicable to immediate transactions involving currency, is applied to the economic transaction (Moosa, 2000). For the purposes of contemporary international transactions, however, a spot exchange does not necessarily need to be completed immediately as spot exchanges are allowed to be completed over a period of two days from the conclusion of the contract (Quirk *et al*., 1988).

Table 3 demonstrates the resulting fluctuations in value between the USD and the MYR during September of 2011. While the fluctuations were relatively minor until 9 September, the value of the MYR against the USD fluctuated significantly from that point forward. While the fluctuations do not appear to be significant at first glance, it is important to highlight that most international exchanges involve considerably larger sums of money as a counter-value and, as stated above, payments can be made up to two days after a sales agreement is concluded. If agreement was reached between two parties regarding a spot exchange on 12 September 2011, involving a counter-value of USD 50,000.00, and payment was made on 14 September 2011, the two day period would result in the Malaysian seller receiving the equivalent of MYR 154,125.00, rather

than MYR 151,225 on the date of the agreement. Conversely, if the agreement had been reached on 26 September 2011 for the same amount and payment made on 27 September 2011, the one day period would have resulted in the Malaysian seller receiving MYR 157,690.00, rather than MYR 159,425.00 if payment had been made on the date of the agreement. To summarize, unless the spot exchange can be completed in one day, the risks associated with currency exchange fluctuations are indicative of potentially significant risks and are, therefore, impermissible in light of the prohibitions upon *gharar*.

While spot exchanges occur in international transactions, deferred payments are also frequently employed, involving the use of forward contracts. Rather than rendering payment within two days of the agreement or contract concerning a transaction, forward contracts specify payment to be made upon the date of the maturity, or completion of the terms, of the contract (Ajami *et al*., 2006). Forward contracts are typically drafted for the contract to mature at 30 days, 60 days or 90 days from the drafting of the contract, but can also extend to 6, 9 or 12 month periods in some instances (Quirk *et al*., 1988). Even during relatively short-term forward contracts, such as 30 days and 60 days, the currency exchange fluctuations can have a significant effect upon the value of the remuneration received, as demonstrated in Table 4. If a forward contract was signed on 3 August 2011 and set to mature on 3 October 2011, again involving a counter-value of USD 50,000.00, the two month period would result in the Malaysian seller receiving MYR 160,475.00, instead of MYR 148,715.00 if the transaction had been a spot exchange and payment rendered on the day of the agreement. Conversely, if the agreement had been signed on 3 October 2011 and set to mature on 3 November 2011, the Malaysian seller would receive MYR 157,350.00, instead of MYR

TABLE 3
Daily Currency Exchange Rates from September 2011, Malaysian Ringgit to the US Dollar**

	MYR : 1 USD		MYR : 1 USD
2	2.970000	20	3.139000
6	2.987500	21	3.109500
7	2.985000	22	3.149500
8	2.988000	23	3.179500
9	2.996500	26	3.188500
12	3.024500	27	3.153800
13	3.046000	28	3.164500
14	3.082500	29	3.184800
15	3.090500	30	3.191000
19	3.106500		

**Information concerning currency exchange rates was obtained from the International Monetary Fund, available at http://www.imf.org.

160,475.00 if the transaction had been a spot exchange and payment made on the same day. Due to the amount of time that passes during forward contracts, between one month and one year typically, and the more substantial sums of money involved in such international exchanges, the risks and uncertainty regarding the value of the money, as a counter-value in the exchange, represents a major element of risk and provides a clear violation of *gharar* in light of the uncertainty inherent in the exchange.

While the previous examples were based upon relatively stable monetary systems and demonstrated the effect of minor fluctuations in exchange rates during spot exchanges, the fluctuations become exacerbated during financial crises. Prior to the Asian Financial Crisis, the exchange value of the Indonesian Rupiyah (IDR) to USD fluctuated between IDR 2,300.00 and IDR 2,500.00 between January 1997 and July 1997, decreasing in value to almost IDR 6,000.00 to USD 1.00 by December 1997. Following the Asian Financial Crisis, the IDR exchange value decreased from IDR 10,000 to USD 1.00, on 20 January, to IDR 12,800 to USD 1.00, on 22 January 1998, decreasing further to IDR 14,800 to USD 1.00 by 23 January 1998. In the case of the Zimbabwean Dollar, the exchange rate dropped from ZWD 30,000.90 to USD 1.00 on 9 May 2008 to ZWD 160,000,000 to USD 1.00 on 11 May 2008. Although such extreme instances are rare, they are similar to common inflationary and deflationary exchange spikes in the sense that they are often unforeseen and unpredictable, arising from the fact that a multitude of economic and non-economic factors affect the exchange ratios for currency (Ajami *et al*., 2006).

The reality of the effects of economic and non-economic factors on the value of

TABLE 4
2011 Bi-Monthly Currency Exchange Rates: Malaysian Ringgit to the US Dollar[***]

	MYR : 1 USD		MYR : 1 USD
3 January	3.064000	5 July	3.008500
18 January	3.059500	20 July	3.001500
2 February	3.043500	3 August	2.974300
18 February	3.038500	18 August	2.976500
3 March	3.033000	6 September	2.987500
18 March	3.044000	21 September	3.109500
4 April	3.025900	3 October	3.209500
19 April	3.029000	18 October	3.116500
3 May	2.970000	3 November	3.147000
18 May	3.031400	18 November	3.161200
2 June	3.027500	1 December	3.145500
17 June	3.047000	16 December	3.177000

[***]Information concerning currency exchange rates was obtained from the International Monetary Fund, available at http://www.imf.org.

money is demonstrated in Table 5. Utilizing a cross analysis of the inflation rates of the USD and the MYR, a theoretical exchange rate is proposed over the course of 2011 using the average currency exchange rate between the MYR and the USD as a reference point. The percentage based monthly inflation rate figures are utilized to determine the changes in the relative value of the USD and the MYR, in relation to domestic economic and non-economic factors leading to inflation (and deflation in the case of the USD), which are then applied to the currency exchange rate of the previous month. The table demonstrates the theoretical effects of the relative increase and decrease of the value of the MYR against the USD on the currency exchange rate, all other things equal. The table, however, demonstrates that the fluctuations in the currencies arising from inflation, the result of local factors, and the fluctuation arising from currency exchange values, the result of international factors, result in completely different figures and contradictory increases and decreases in value in some instances. The disparity between the resulting figures is further indicative of the overwhelming uncertainty arising from the use of contemporary moneys in international exchanges, demonstrating that the systems utilized to value contemporary moneys will inevitably provide incongruent, if not contradictory, valuations of contemporary moneys in practice.

TABLE 5
Comparison of Theoretical Effects of Monthly Inflation on Exchange Ratios and Actual Exchange Ratios: Malaysian Ringgit to US Dollar[****]

	Inflation Rate US	Inflation Rate Malaysia	Resulting Change in Value (%) of MYR Against USD	Theoretical Average Rate of Exchange	Actual Average Rate of Exchange
December(2010)	N/A	N/A	N/A	N/A	3.124990
January	0.48	0.59	-0.001194	3.125027	3.065500
February	0.49	0.49	0.000000	3.125027	3.046020
March	0.98	0.09	0.008892	3.124749	3.034720
April	0.64	0.29	0.348988	3.113844	3.011500
May	0.47	0.29	0.179480	3.108256	3.016190
June	-0.11	0.29	-0.398843	3.120653	3.029320
July	0.09	0.19	-0.099810	3.151800	2.994760
August	0.28	0.19	0.089829	3.148969	2.985610
September	0.15	0.19	-0.039924	3.158398	3.084580
October	-0.21	0.19	-0.299431	3.167855	3.135170
November	-0.08	0.09	-0.169847	3.173235	3.154380
December	-0.25	0.09	-0.339694	3.184015	3.159760

[****]Information concerning the average monthly currency exchange rates between the Malaysian Ringgit and the US Dollar in 2011 was obtained from X-Rates, available at http://www.x-rates.com

Practical Effects of Value Fluctuation Considered

The practical realities associated with the use of contemporary moneys in economic exchanges demonstrate the nature of the risks associated with the value of such moneys. This is especially so in regards to inherent value-based assessments involved in any economic exchange including costs, benefits and price. The examples amply demonstrate the spectrum of risk associated with contemporary transactions. On one end of the spectrum lie spot exchanges conducted within a domestic market, which are relatively free from risks and uncertainties associated with *gharar*. Issues associated with the nature of contemporary moneys, including the effects of time on economic transactions in light of fluctuating inflation and currency exchange rates; contrasts between the valuation of moneys at the local and international levels. The risks associated with monetary system instability that has led to hyperinflation in some instances, gradually place other types of exchanges toward the other end of the spectrum, where *gharar* becomes an apparent and abhorrent element of the economic exchange due to the pervasive risks and uncertainties incurred. While deferred payments in domestic spot exchanges can potentially involve minimal risk, the amount of risk and uncertainty is directly correlated to the amount of money utilized as a counter-value in the economic exchange and the amount of time between the agreement and payment. Although international spot exchanges can also potentially contain minimal risk, this can be accomplished only by minimizing the amount of time between the agreement and the payment. As demonstrated, even a two day period between the agreement and the payment in regards to a spot exchange can have considerable consequences. However, with regards to forward contracts and exchanges during periods of monetary system instability, such as sharp inflationary spikes and hyperinflation, the risks and uncertainties become paramount and should therefore be avoided.

PRACTICAL IMPLICATIONS AND RECOMMENDATIONS CONCERNING RISK MANAGEMENT ARISING FROM ECONOMIC EXCHANGES: A *SHARIAH* PERSPECTIVE

Academic entrepreneurship, like any commercial activity, will inevitably contain elements of risk and uncertainty. The characteristics and nature of contemporary moneys, however, add a significant amount of risk to such ventures. *Fiqhmuamalat* is the body of *Shariah* law dealing with economic transactions and effectively utilizes the prohibition against *gharar* as a means by which to manage and reduce the risks associated with any commercial venture. As a result of the problematic features of the use of contemporary moneys – such as inflation, constantly fluctuating currency exchange rates and problems concerning the valuation of contemporary moneys generally – the most basic activity of any business venture, that of the economic exchange, has inherently become the source of a significant amount of risk. However, the nature of risk

and uncertainty in relation to specific types of economic exchanges has been sufficiently delineated to provide guidance for academic entrepreneurs in relation to the manner in which to minimize the risk arising from commercial transactions.

As demonstrated, the spectrum of risk flows from minimal to pervasive; local exchanges to international exchanges; and spot exchanges to deferred payments or forward contracts, respectively. In a fashion similar to the function of *fulus* in early Islamic economies, contemporary moneys are most suited for small local transactions. Unfortunately, the reality is that for a venture to be successful, economic exchanges must be concluded and such exchanges utilize contemporary moneys, almost exclusively, as a counter-value. The analysis, however, has emphasized several important points about the reduction of risk in commercial transaction. Firstly, the shorter the period of time between an agreement relating to an economic exchange and payment, the less risk and uncertainty are incurred in the transaction. Secondly, while deferred payments in local exchanges inherently involve greater risk and uncertainty than spot exchanges, the risks can be minimized by establishing shorter terms between agreement and payment. Endeavoring to minimize potential losses of benefit from the transaction by reducing the amount of goods, services or commodities exchanged in individual agreements, possibly spreading the items exchanged over several individual transactions rather than attempting to merge them into one substantial transaction agreement also helps. Thirdly, inflation and currency exchange rates must be monitored closely and regularly, with prices, costs and desired benefits being evaluated on a regular basis in light of the fluctuations. Fourthly, while the future value of contemporary money is inherently uncertain and its value can be reduced to almost nothing in a matter of days during periods of monetary system instability, the academic entrepreneur must be consciously aware of the financial stability of the monetary systems which may be encountered when conducting commercial transactions and avoid economic exchanges involving contemporary moneys issued in a territory experiencing a financial crisis. Finally, if opting to engage in international economic exchanges, endeavor to minimize risks by minimizing, to the greatest extent possible, the period of time between the agreement and the payment for the transaction.

The discussion of the concept of *gharar* in relation to economic transactions arising as a result of academic entrepreneurial ventures has contributed to discourse concerning academic entrepreneurship in three principal fashions. Firstly, the analysis has demonstrated the inherent risks associated with contemporary commercial transactions involving contemporary money as a counter-value. Secondly, the discussion of the nature and characteristics of contemporary money raises awareness about the issues associated with the valuation of contemporary moneys, particularly the potential effects upon cost, benefits and price over a period of time. Finally, the

present article can serve as a guide for ventures in academic entrepreneurship, whereby risks arising from commercial transactions can be minimized in a practical manner and economic exchanges can be conducted in a *Shariah* compliant manner. Future research could include determining whether other potential conflicts arise with *Shariah* principles, such as *riba* and *maysir*, in academic entrepreneurial activities purely due to the nature of contemporary moneys and whether Islamic guidelines contained within *fiqhmuamalat* may serve as a practical means by which to avoid the potential consequences associated with such issues.

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