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THREE ESSAYS ON PRACTICAL IMPLEMENTATIONS OF REAL MONEY CONCEPTS

BY

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A dissertation submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in Economics (Economics)

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FEBRUARY 2013

ABSTRACT

August 2007 financial crisis, the worst after the great depression, has prompted the world leaders at to call for overhauling of the world monetary system as was done at the Bretton wood. This has led economists to suggest different monetary concept. Even the head of largest development institution in the world, World Bank, Robert Zoellick, once called for the backing of fiat currency by gold. This study has identified three of such monetary concepts proposed by people to solve or prevent future financial crisis and studied the practical implications of their implementation. The three studied concepts are: gold standard, gold currency and business to business barter trade. The first essay looked efficient trade matrix and gold reserve requirement for intra- commodity trade in selected countries of the organization of Islamic cooperation countries. The second essay investigated the determinants of gold dinar (gold currency) in Kelantan, Malaysia and the last essay studied the operationalization and acceptance of barter transaction in Malaysia. This thesis is the first of its kind to have brought these three issues together in a study. It has employed distinct technique in each of the essays. The first essay employed non-linear mathematical programming to determine trade optimization and the quantity of gold needed to settle the net payment in bilateral and multilateral trade arrangements among these countries. The second essay used structural equation modeling techniques to uncover the determinants of adoption of gold dinar in Kelantan Malaysia based on the concepts of adoption of innovation from the theories of acceptance of innovation in the literature. The last essay on operationalization and acceptance of barter used mixed methodology to answer its objectives. These are qualitative and quantitative methods of data analysis. The qualitative aspect employed interview and content analysis for in-depth understanding of the operation of barter, while in quantitative part, partial least square technique was used for the structural path analysis of the proposed model of acceptability of barter. This allowed for the use of small sample and highly skewed data. Based on year 2008 commodity data for the five selected countries and five products taken from the United Nation Commodity Trade Statistics, efficient trade matrix for these countries for the products and the net gold requirement for settlement were computed. It was discovered that the amount of gold needed for commodity trade decrease from gross through bilateral to multilateral arrangement. The second essay applied structural equation modeling to a cross-sectional data collected from gold users in Kelantan to obtain the measurement and structural model from the sample. Thus two outcomes were achieved from the study. First is the determination of the components of gold dinar adoption from the measurement model and the second outcome is the uncovering of factors that have significant impacts on the adoption of gold dinar from the structural model. The data for the third essays came from both in-depth interview of the representative of business to business barter trade in Malaysia and content analysis of the company on one hand, and survey questionnaire administered to the client (participants) of business to business transaction in Malaysia. The essay employed mixed methodology to explore the operationalization and user's acceptance of business to business barter transaction in Malaysia. The qualitative methods used to explore the operation of barter trade in Malaysia are in-depth interview, observation and document analysis. Descriptive statistics was used to profile the socio-economic characteristics of barter trade members, while PLS technique was employed to analyze the hypotheses of user's acceptance of barter exchange in Malaysia. The data was found to fit the hypothesized model, with most of the structural link path coefficient statistically significant.

ملخص البحث

الازمة الاقتصادية العالمية التي عرفت شراراتها الاولى في اغسطس ٢٠٠٧ و التي تعتبر الاسوأ بعد الكساد الكبير، دفعت قادة العالم الى اصلاح النظام المالي العالمي كما كان الحال خلال اتفاق بريتون وودز، و جعل الاقتصاديين يقترحون عددا من المفاهيم النقدية البديلة. حتى رئيس أكبر مؤسسة للتنمية في العالم، البنك الدولي، روبرت زوليك، دعا لدعم العملة الورقية بالذهب. حددت هذه الدراسة ثلاثة من النماذج النقدية التي اقترحها من الاخصائيين الاقتصاديين لحل الأزمة المالية أو منع حدوث مثيلاتها في المستقبل، ودرس الآثار العملية لها. النماذج الثلاثة هي: معيار الذهب، الذهب كعملة، و نظام المقايضة بين الشركات. المقال الاول درس شبكة التجارة الفعالة و احتياطي الذهب المطلوب للتجارة بين السلع في عدد من دول منظمة المؤتمر الإسلامي. المقال الثاني حقق في العوامل المؤدية الى استخدام الدينار الذهبي (العملة الذهبية) في الولاية الماليزية كلانتان، و المقال الثالث درس تفعيل وقبول المقايضة في ماليزيا. هذه الأطروحة هي الأولى من نوعها حيث جمعت بين هذه القضايا الثلاث معا في دراسة واحدة، واستخدمت تقنيات علمية حديثة في كل من المقالات. في المقالة الاولى تم استخدام البرمجة الرياضية الغير خطية لتحديد مستوى التجارة الأمثل وكمية الذهب اللازمة لتسوية المدفوعات الصافية في الترتيبات التجارية الثنائية والمتعددة الأطراف بين هذه الدول. في المقالة الثانية تم استخدام تقنية نمذجة المعادلة البنائية للكشف عن العوامل المحددة لاعتماد الدينار الذهبي في ولاية كلانتان الماليزية استنادا إلى مفهوم الابتكار. اما في المقالة الاخيرة فتم استخدام منهجية مختلطة لتحقيق أهدافها. يرتكز الجانب النوعي على المقابلات المباشرة وتحليل المحتوى لفهم معمق لعملية المقايضة، بينما في الجزء الكمي، تم استخدام تقنية المربع الادنى الجزئي لتحليل المسار الهيكلي للنموذج المقترح لداسة قبول المقايضة. ساعدت هذه التقنية في استخدام بيانات ذات عينة صغيرة و شديدة الانحراف. تم احصاء شبكة التجارة الفعالة واحتياطي الذهب الخالص المطلوب لتسوية المدفوعات استنادا إلى بيانات السلع لعام ٢٠٠٨ لخمسة بلدان مختارة و خمسة منتجات مأخوذة من إحصاءات تجارة السلع للأمم المتحدة. في هذا السياق، الدراسة خلصت الى ان كمية الذهب اللازمة لتجارة السلع انخفضت عند استخدامها في التجارة المتعددة الأطراف. حاولت المقالة الثانية الحصول على نموذج قياسي و هيكلي من العينة التي شملتها الدراسة، وبالتالي تم تحقيق نتيجتين من الدراسة. الأول هو تحديد مكونات اعتماد الدينار الذهبي انطلاقاً من النموذج القياسي والنتيجة الثانية هي الكشف عن العوامل التي لها تأثيرات كبيرة على اعتماد الدينار الذهبي انطلاق من النموذج الهيكلي. وجاءت البيانات المستخدمة في المقالة الثالثة من مقابلة معمقة مع ممثلي الأعمال التجارية،خاصة قطاع تجارة المقايضة في ماليزيا وتحليل المحتوى للشركات من جهة، وتوزيع الاستبيان على العملاء (المشاركين) في المعاملات التجارية الماليزية. المقالة استخدمت منهجية مختلطة لاستكشاف تفعيل وقبول المستخدم لإدارة الأعمال التجارية عن طريق المقايضة في ماليزيا. الأساليب النوعية المستخدمة لاستكشاف عملية المقايضة التجارية في ماليزيا هي المقابلات المعمقة، الملاحظة وتحليل الوثائق. كما تم استخدام الإحصاء الوصفي لتحليل الخصائص الاجتماعية والاقتصادية لأفراد تجارة المقايضة، بينما استخدمت تقنية المربع الجزئي الادنى لتحليل فرضيات قبول المستخدم للمقايضة في ماليزيا. النتائج اظهرت ان البيانات تتناسب مع النموذج المفترض، و معظم معاملات ارتباط المسارات الهيكلية لها دلالة إحصائية قوية.

APPROVAL PAGE

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DECLARATION

I hereby declare that this dissertation is the result of my own investigation, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degree at IIUM or other institutions.

Yusuf Muhammad-Bashir Owolabi

Signature…… Date……..

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THREE ESSAYS ON PRACTICAL IMPLEMENTATIONS OF REAL MONEY CONCEPTS

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This work is dedicated to Allah, Who makes things possible.

ACKNOWLEDGEMENTS

"Alhamdulillah ladhi bi ni'matihi ta'timi salihaat. Wa salatu wa salaamu 'ala nabiyinna Muhammadi, wa 'ala ahlihi wa sahabihi wa mani taba'hum fil khairi, ilaa yaomil bath". All praise is due to Allah, The One Who makes it easy to complete good works. May His ceaseless blessing perpetually shower on the noble soul of our Prophet, Muhammad, his households, his companions and the generality of those who take to their path until the day of reckoning. My appreciation goes to everybody who as crossed my path in life whose experience has shaped my personality whether my encounter with them is positive from which I learn how to be good or the experience is negative from which I have learned how not to behave. These personalities are so numerous that it will be difficult to mention them in these few pages. However, whether I mention you or not, know that I appreciate you and Allah knows each and every one of you. My solace to you is to pray that Allah thank you, appreciate you on my behalf and to reward you with abundant of good (amin).

The preparation of the thesis involved many individuals to whom am highly indebted to. I would like to acknowledge the invaluable contributions of my supervisory committee. I owe special gratitude to Professor Ahamed Kameel Mydin Meera, my principal supervisor, for sharing his knowledge and for his inestimable guidance. I learnt a lot from him both inside and outside the class. I specifically thank Associate Professor Dr Gairuzazmi Mat Ghani for his contribution in terms of his knowledge, time and money. I appreciate Associate Professor Dr Turkhan Ali Abd Manap for his useful advice. My great appreciation also goes to Professor Moussa Larbani whom within a very short time of joining my advisory committee had a great impact. To all of you, I say "jazakumullahu khairan".

I am grateful to my families, those from the blood and those from covenants. Special thanks to the Yusufs, from first of them to the last of them. My appreciations to the Olawumis, and all others that I may not be able to mention. I special thanks to my parents and siblings, starting from Dr Yusuf to the last of them. I am highly indebted to my wife, my kids and all others whose my absent at home has affected one way or the other. May Allah always keep your companies. This appreciation will not complete without acknowledging the groups and individuals I also benefited from. These include Muslim Students' Society of Nigeria, SAN Yusuf Olaolu Ali, Committee of friends and well wishers, my lab members and every NISCOM members. May Allah always make your affairs easy for you.

In completing this work, I made reference to several published articles, books, thesis and conference papers. I wish to thank these authors and publishers for the material. I am indebted to many professors, lecturers, fellow graduate students and administrative staffs of Kulliyyah of Economics and Management Sciences and Kulliyyah of Educations for having contributed to my graduate studies in many ways. Thank you all.

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LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structures
SEM	Structural Equation Modeling

GENERAL INTRODUCTION

THREE ESSAYS ON PRACTICAL IMPLEMENTATION OF REAL MONEY CONCEPTS

Since the breaking out of the World War I in 1914, which led to the suspension of the hitherto gold standard, the world economies have witnessed series of inflation, depression, devaluation, unstable exchange rate and other 'money diseases' (Chown, 1929 pg 3). The attendant hyper-inflation in different countries of the world- Germany, Hungary, Poland and Russia (1923-4), Greece and Hungary (again) in 1946 and the great depression of the 1930s made the academic economic history of the first half of twentieth century to be dominated by discussion on money. One may wonder why it took a longtime before monetary system becomes an issue. The simple answer is that the earlier system that that had work perfectly well need little or no attention (Mundel, 1999 in Zak 1999 eds). The monetary system affects deeply broader economic, political and social affairs. President John F. Kennedy was reported to have told his adviser that two things which scared him most were nuclear weapon and payment deficit (Garvin, 2002).

By 1920s, countries started using foreign reserves instead of Gold. This brought about freedom in the international monetary system and price level was striped from the gold supply. The devaluation of dollar in 1934 made it to be seen as a better alternative to gold or at least equally good. Dollar became common denominator and reserve currency for countries that are no more on gold standard. This was ratified at the Breton Woods agreement in 1944. Dollar was anchored to gold and all other major currencies anchored to dollar. There was the attendant post World War II gold cold war. German, Britain and France returned to Gold and the

stock pile of gold by these countries put pressure on the slender gold base of US. Countries started redeem their dollar in gold, which led to convertibility crisis. Eventually, on 15 of August, 1971, America President, Nixon, end all convertibility into gold which marks the demise of Bretton Woods System (Frum, 2000). The last 40 years has witnessed more than 300 financial crises and bank panic, the latest of which is the August 2007 financial crisis. Many world leaders have called for review of the world monetary system. French President Nicholas Sarkozy, on 26 September, 2008 has called for rethink of financial system from scratch, as done in Bretton Woods[1]. British Prime Minister Gordon Brown on October 13, 2008 said world leaders need to meet to take new economic system[2]. Russian Prime Minister Vladimir Putin on February 9, 2009 said the present world monetary system has allowed the wealth of the world to concentrate in a country and as such there is need to be a relook at it[3]**.** The responses to financial crisis and the calls have been instant and diverse based on the level and capacity of the respondent. The World Bank president, Robert Zoellick[4] called for a revisit of gold standard. The state of Utah in US had also proposed a bill to back her currency to gold. Some states and communities in developing countries have reacted by issuing gold currency[5] or means of investment. Other reaction has been intense call to return to barter transaction that uses community currency (barter trade credit). All these proposition/solutions are concepts that have implications when implemented. This thesis therefore studied the practical implication involve in implementing these real money concepts.

[1] George Parker, Tony Barber and Daniel Dombey, October 9, 2008
[2] Agence France-Presse (AFP), October 13, 2008
[3] Democratic Underground.Com. Jun 16, 2009
[4] http://articles.marketwatch.com/2010-11-07/economy/30806200_1_new-gold-world-bank-robert-zoellick
[5] Kelantan and Perak in Malaysia and Ache in Indonesia.

The first essay studied efficient trade matrix and gold reserve requirement for commodity trade among Organization of Islamic Cooperation Countries. Five countries and five products were selected for this purpose. The intra commodity trade data for the year 2008 for the selected countries and products were obtained from UNICOTRADE. A non linear mathematical programming was used to analyze the efficient trade matrix among OIC countries and the gold reserve requirements for each and every country that participate in that trade. It was discovered that trade among these countries could be maximized based on the output of the analysis. The quantities of gold required by each of the country to participate in the multi-bilateral and multilateral trade were also found out. It was also discovered that the quantity of gold needed for such trade was least in multilateral trade arrangement.

The second essay studied the determinants of gold dinar adoption in Kelantan. A number of hypotheses were developed based on literature and these hypotheses were tested using structural equation technique. The data for the study came from a survey of user's perception of gold dinar. It was discovered that all the indicators have good loading on their factors suggesting that they measured what they are supposed to measure. Six out of the seven constructs specified to influence the adoption of gold dinar were found to be practically and statistically significant and exhibit the correct signs.

The third essay was on the operationalization and user's acceptance of business to business barter transaction in Malaysia (BBX). The essay employed mixed methodology. The qualitative methods used to explore the operation of barter trade in Malaysia are in-depth interview, observation and document analysis of the company representative and their documents and attendance of their trade fairs. The quantitative data was obtained from the survey of BBX members. Descriptive statistics was used

to profile the socio-economic characteristics of barter trade members, while structural equation modeling, PLS technique, was employed to analyze the hypotheses of user's acceptance of barter exchange in Malaysia. The data was found to fit the hypothesized model, with most of the structural link path coefficient statistically significant.

ESSAY ONE

ON EFFICIENT TRADE MATRIX AND GOLD RESERVE REQUIREMENT FOR COMMODITY TRADE AMONG ORGANIZATION OF ISLAMIC COOPERATION (OIC) COUNTRIES

ABSTRACT

The triple crises of 2008 with its enormous impact on world trade have made many countries to start to look inward on how to prevent or curtail the future re-occurrence and impact. The Organization of Islamic Cooperation Countries should not be left out of the effort to beat future crises of this nature. To do this, they need to look inward and strengthen the intra trade among one another. To achieve this, they need a common platform in terms of trade coordination and a generally accepted international reserve currency that will be stable and will not be a potential source of crises in itself. All these require a proper strategic planning and evaluation of what is and what is supposed to be. This study is one of the earliest works in that direction. This study used a non linear mathematical programming to analyze the efficient trade matrix among OIC countries and the gold reserve requirements for every single country that participate in that trade. It was discovered that trade among these countries could be maximized based on the output of the analysis. The quantities of gold required by each of the country to participate in the multi-bilateral and multilateral trade were also found out. It was also discovered that the quantity of gold needed for such trade was least in multilateral trade arrangement. This study has a lot of implications in strengthen the cooperation among OIC countries and maximizing the trade relationship among them.

خلاصة البحث

الأزمة الثلاثية لسنة ٢٠٠٨ و ما لها من تأثير هائل على التجارة العالمية جعلت العديد من البلدان تعيد النظر في سياساتها الداخلية حول كيفية الحد من أثارها أو منع إعادة حدوثها في المستقبل، هذه البلدان شملت بلدان التعاون الإسلامي التي يجب ان لا تترك خارج الجهود للتغلب على مثل هذه الأزمات في المستقبل. للقيام بذلك، هذه الدول بحاجة الى تعزيز التجارة مع بعضها البعض. حيث، انهم في حاجة الى أرضية مشتركة من حيث التنسيق و من ثم توفير احتياطي كافي من عملة المقبولة عالمياً و التي من شأنها أن تكون مستقرة وان لا تكون مصدراً محتملا للأزمات في حد ذاتها. كل هذا يتطلب التخطيط الاستراتيجي السليم وتقييم ما هو قائم حاليا وما يفترض أن يكون. هذه الدراسة هي واحدة من اوائل الأعمال في هذا الاتجاه. تستخدم هذه الدراسة البرمجة الرياضية الغير خطية لتحليل شبكة التجارة الفعالة واحتياطي الذهب الخالص المطلوب ما بين بلدان منظمة المؤتمر الإسلامي لكل بلد يشارك في تلك التجارة على حدة. تم اكتشاف أنه يمكن تعظيم التجارة بين هذه الدول على أساس الناتج من التحليل. كما تم تحديد الكميات المطلوبة من الذهب لكل البلدان المشاركة في التجارة المتعددة الأطراف والثنائية. اتضح أيضا أن كمية الذهب اللازمة لمثل هذه التجارة كانت الأقل في ترتيب التجارية المتعددة الأطراف. هذه الدراسة لها الكثير من الآثار في تعزيز التعاون بين بلدان منظمة المؤتمر الإسلامي وتعظيم العلاقات التجارية فيما بينها.

1.1 INTRODUCTION

This essay analyzes OIC countries' trade assuming gold is used as a medium to settle the trade. The objective is to determine the efficient trade matrix and level of gold required to support intra OIC commodity trade. The triple crises of 2008 (financial, fuel and food) had a great impact on the international trade of developed and developing countries. Specifically, the OIC countries' international trade was seriously hit by the crises. The organization members' international trades fall by more than 77 percent from 401 billion in 2008 to 89 billion US dollar in 2009. Most member countries trade mostly with non-members developed countries affected by the crises and use dollars as their trading currency and keep/invest their foreign reserve in these developed countries (Islamic Centre for Development of Trade, 2010). The impacts of these crises call for concerted effort by OIC in terms of promoting intra member trade and finding a more stable reserve currency.

Although what economists referred to as classical era of the gold standard ended with the breaking-out of the World War I in 1914, policy makers and scholars have never ceased interest in the issue of gold. Immediately after the end of World War I, great economies of the world experience hyper inflation and volatile exchange rate which made the world power to call for the return to prewar gold era. By 1928, majority of the countries around the world had returned to gold exchange standard. However, this was short-lived with the advent of the great depression in the early 1930s which lasted for several years (Bordo 1993, 1999).

The issue of gold was revisited in the post-second world war international monetary order. American planers canvassed for a nominal gold standard that anchor dollar on gold and all other world currencies on the dollar. This was ratified at the Bretton Woods Agreement in 1944. This, it was believed would facilitate exchange

rate stability and growth in international trade. As it turns out to be, this led to asymmetry in the world monetary order with dollar taking the position of gold as an international reserve currency. Some European countries such as France who did not like this development started piling up gold. This put pressure on the thin American gold reserve (Garvin 2002).

In the mid-sixties, in the period some economists referred to as “Gold battle within cold war,” France renewed call for return to pre-World War I classical gold standard which allowed for free movement of gold. The earlier Bretton Woods agreement created imbalance gold-dollar standard. Countries now use dollar as a reserve instead of gold which give undue seigniorage advantage to America. This eventually made IMF to create paper gold inform of Standard Drawing Right (SDR) in 1968. This did not solve the problem. In August 1971, due to pressure and inability to fulfill its dollar for gold pledge, America unilaterally suspends convertibility of dollar to gold and thereby permanently severs the relationship between the paper money and gold. Ever since then, fiat currency has triggered speculative attack, persistent inflation and hundreds of financial crises and banking runs (Laeven and Valencia 2008 and Garvin, 2002). The latest one is the August 2007 global financial crisis.

As a solution to the present day search for ideal monetary rules, Bordo (1999) notes two relevance of gold in the present day monetary system. The first is commitment mechanism. This, he argues, makes the monetary authorities to pursue consistent policies, which will be an antidote to persistent rise in general price level. The second is the cooperation among the monetary authorities of different nations. This will facilitate policy coordination for a feasible international monetary system.

The call for return to gold as the unit of value for intra OIC trade was first made by Tun Dr Muathir, the then prime minister of Malaysia, during the Conference on Stable and Just Global Monetary System (2002). Just coming out of the ASEAN financial crisis of 1997, the prime minister canvassed for use of stable money, gold payment system, as against the fiat money system which was criticized for amplifying and causing global monetary instability[6]. However, gold has been criticized based on high cost of resources to maintain it, inadequacy in quantity of gold supply to sustain the present volume of world trade (especially with regard to OIC countries that has less than ten percent of the world gold holding[7]), problem of choosing the right price for gold in various countries and asymmetry adjustment between core and peripheral countries in case of supply shocks which lead to problem imbalance of payment and recession in these countries (Bordo, 1999). Also, more than 70 percent of OIC international trade is with non-member advanced countries (ICDT, 2010). Therefore, to be able to use gold payment system successfully and effectively, there in need to maximize trade and minimized the quantity of gold needed to sustain it among OIC countries.

Previous study by Meera and Larbani (2004) developed a non-linear optimization model to determine an efficient trade matrix, which need the minimum gold amount to settle the trade balances among the participating countries. Their theoretical paper developed a mathematical model and used hypothetical data in the model to determine the hypothetical minimum gold requirement for each participating country. This was done for both bilateral and multilateral trade arrangement. They found that the amount of gold reserve needed to support a volume of trade was

[6] Tun Dr Muathir Muhamed's keynote address at the 2002 international conference on stable and just global monetary system held at Putra World Trade Centre, Kuala Lumpur from August 19-20.
[7] World Bank