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THE ECONOMETRIC ANALYSIS OF THE UNDERGROUNDE CONOMY IN SELECTED GULF COOPERATION COUNCIL (GCC) COUNTRIES: SAUDI ARABIA, QATAR, THE UNITED ARAB EMIRATES, KUWAIT AND OMAN

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Universiti Utara Malaysia

DOCTOR OF PHILOSOPHY
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Universiti Utara Malaysia

By

AWADH AHMED MOHAMMED GAMAL

Thesis Submitted to the
School of Economics, Finance and Banking,
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in Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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ABSTRACT

The growing expansion of the underground economic activities has become a serious concern to many countries as it is viewed as a challenge to the economies in the world. Using the currency demand approach model, this study embarks on analyzing the underground economy particularly in the estimation of its size., and its related issues such as illegal money and tax evasion in selected Gulf Cooperation Council (GCC) countries; United Arab Emirate, Kuwait, Oman, Saudi Arabia and Qatar. The analysis in the study is based on time-series quarterly data over the period of 1991:Q1 to 2010:Q4 for the UAE, Kuwait and Oman; and annual data for Saudi Arabia and Qatar over the period of 1980-2010. The analysis of data begins with stationarity test using the recent techniques that account for structural break in addition to the traditional unit root test. It follows by the Gregory and Hansen cointegration test in the presence of structural break for long-run estimates based on currency demand function. Also, the General to Specific (GETS) technique is employed to estimate the short-run dynamic error correction model. The results of data analysis indicate that the estimated size of the underground economy to Gross Domestic Product (GDP) for Saudi, Qatar, UAE, Kuwait and Oman are 62.80%, 17.03%, 10.34%, 24.95% and 32.35% respectively. While, the estimated average size of the illegal money to the money outside banks for Saudi, Qatar, UAE, Kuwait and Oman are 18.18%, 26.70%, 59.68%, 59.51% and 49.78% respectively. The findings also indicate that the rate of tax evasion to the official GDP is estimated at an average of 5.15%, 2.12%, 0.63%, 2.82% and 2.92% for Saudi, Qatar, UAE, Kuwait and Oman respectively. Given the empirical results obtained from the research, the governments of GCC should formulate rules and regulations; and economics policy that are able to curb the growing size of the underground economic activities.

Keywords: Underground economy, illegal money, tax evasion, currency demand function, GCC countries.

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ABSTRAK

Peningkatan dalam aktiviti ekonomi bawah tanah telah menjadi satu kebimbangan besar kepada banyak negara kerana ia dilihat sebagai cabaran kepada ekonomi rasmi. Dengan menggunakan pendekatan model permintaan wang, kajian ini membuat anggaran saiz ekonomi bawah tanah, dan isu-isu yang berkaitan seperti wang haram dan pengelakan cukai di dalam beberapa buah negara dalam Majlis Kerjasama Negara-Negara Teluk (GCC) yang dipilh iaitu United Arab Emirate (UAE), Kuwait, Oman, Arab Saudi dan Qatar. Analisis kajian ini adalah berdasarkan data siri masa suku tahunan bagi tempoh 1991: S1 hingga 2010: S4 untuk negara-negara UAE, Kuwait dan Oman; dan data tahunan 1980-2010 bagi negara-negar Arab Saudi dan Qatar. Analisis data dimulai dengan ujian kepegunan. Ujian ini dilakukan dengan menggunakan teknik yang berbeza daripada teknik ujian kepegunan yang biasa kerana ianya mengambil kira wujud perubahan struktur pada data yang digunakan. Ini diikuti dengan ujian kointegrasi jangka panjang dengan menggunakan kaedah ujian kointegrasi Gregory dan Hansen yang mengambil kira perubahan struktur data. Kaedah umum kepada khusus (*general to specific - GETS*) untuk menganggarkan model pembetulan ralat dinamik jangka pendek (*short-run dynamic error correction model*). Hasil daripada analisis data menunjukkan bahawa saiz anggaran ekonomi bawah tanah kepada keluaran negara kasar (KDNK) untuk negara-negara Arab Saudi, Qatar, UAE, Kuwait dan Oman masing-masing adalah 62.8%, 17.03%, 10.34%, 24.95% dan 32.35%. Manakala anggaran saiz purata wang haram kepada wang di luar bank di negara-negara Arab Saudi, Qatar, UAE, Kuwait dan Oman masing-masing adalah 18.18%, 26.70%, 59.68%, 59.51% dan 49.78%. Dapatan kajian juga menunjukkan bahawa kadar pengelakan cukai kepada KDNK rasmi dianggarkan masing-masing pada kadar purata sebanyak 5.15%, 2.12%, 0.63%, 2.82% dan 2.92% bagi negara-negara Arab Saudi, Qatar, UAE, Kuwait dan Oman. Berdasarkan keputusan empirikal yang diperolehi dari kajian ini, kerajaan dalam Majlis Kerjasama Negara-Negara Teluk (GCC) perlu merangka peraturan dan dasar ekonomi yang dapat membendung peningkatan saiz aktiviti ekonomi bawah tanah.

Kata kunci: Ekonomi bawah tanah, wang haram, pengelakan cukai, fungsi permintaan mata wang, Majlis Kerjasama Negara-Negara Teluk (GCC).

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LIST OF ABBREVIATIONS

Abbreviation	Full Meaning
ADF	Augmented Dickey Fuller
ADCB	Abu Dhabi Commercial Bank
AIC	Akaike Information Criterion
AMF	Arab Monetary Fund
AO	Additive Outlier Model
ARCH	AutoRegressive Conditional Heteroskedasticity
ARIMA	Autoregressive Integrated Moving Average
ARDL	Autoregressive Distributed Lag
ARM	Autoregressive Model
BIC	Bayesian Information Criterion
BTI	Bertelsmann Stiftung's Transformation Index
CDA	Currency Demand Approach
CBK	Commercial Bank of Kuwait
CBQ	Central Bank of Qatar
CPI	Corruption Perception Index
CUSUM	Cumulative Sum of Recursive Residuals
CUSUMSQ	Cumulative Sum of Squares of Recursive Residuals
DW	Durbin-Watson
DOLS	Dynamic Ordinary Least Squares
EBI	Emirates Bank International
ECM	Error Correction Model
ECDM	Emirati Currency Demand Model
ED	Emirati's Dirham
ECT	Error Correction Term
GB	Gulf Bank
GCC	Gulf Cooperation Council
GH	Gregory and Hansen's model
GETS	General to Specific approach
GDP	Gross Domestic Product
GNP	Gross National Product
HRO	Human Rights Organization
HSBC	Hong Kong Shanghai Banking Corporation
IMF	International Monetary Fund
IO1	Innovational Outlier 1 Model
IO2	Innovational Outlier 2 Model
KCB	Kuwaiti Central Bank
KMDM	Kuwaiti money demand model
KD	Kuwaiti Dinar
MIMIC	Multiple Indicators Multiple Causes Model
NBAD	National Bank of Abu Dhabi
NBK	National Bank of Kuwait

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Abbreviation	Full Meaning
NCB	National Commercial Bank
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
OMDM	Omani Money Demand Model
OMR	Omani Riyal
OPEC	Organization of the Petroleum Exporting Countries
QCDM	Qatari Currency Demand Model
QMR	Qatari Money Market Interest Rate
QR	Qatari Riyal
SAMA	Saudi Arabian Monetary Agency
SCDM	Saudi Currency Demand Model
SCVAR	Structural Cointegrating Vector Autoregressive VAR
SR	Saudi Riyal
TTC	The t-test Criterion
VAT	Value Added Tax
US	United States
UAE	United Arab Emirates
WTO	World Trade Organization

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The issue of underground economic activities has developed a considerable growing interest among economists, academicians and policy-makers worldwide (Buehn & Schneider, 2008; Torgler & Schneider, 2009). The rapidly growing underground economic activities have become a serious problem and a competitor to the official economy of the majority of such economies around the world. Due to the concealed nature of underground economic activities, various methods have to be used to estimate the size of the underground economic activities as no official data is available or can be collected (Schneider & Savasan, 2007).

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As mentioned above, it is difficult to obtain an accurate estimation about the real magnitude of the underground economy, whether in developing or developed economies. Nevertheless, Schneider and his researchers conducted various studies on this subject and observed that many studies on the *underground* economy have been mainly conducted in developed countries (Schneider & Enste, 1999; 2000; Schneider, 2002; 2004; 2005; 2006; 2011; Schneider & Klinglmiar, 2004; Feld & Schneider, 2010; Dreher & Schneider, 2010; Schneider, Buehn & Montenegro, 2010; Schneider & Buehn, 2013). Only a few studies have been conducted on the size of underground economies in developing countries (Schneider & Klinglmiar, 2004; Schneider *et al.*, 2010).

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