

The copyright © of this thesis belongs to its rightful author and/or other copyright owner. Copies can be accessed and downloaded for non-commercial or learning purposes without any charge and permission. The thesis cannot be reproduced or quoted as a whole without the permission from its rightful owner. No alteration or changes in format is allowed without permission from its rightful owner.



**THE IMPACT OF FINANCIAL DEVELOPMENT AND  
MACROECONOMICS VARIABLES ON ECONOMIC GROWTH**

**NOORHAMIZAH BINTI ABDUL WAHAB**



**UUM**  
**Universiti Utara Malaysia**

**MASTER OF SCIENCE (FINANCE)  
UNIVERSITI UTARA MALAYSIA  
2017**

# **THE IMPACT OF FINANCIAL DEVELOPMENT AND MACROECONOMICS VARIABLES ON ECONOMIC GROWTH**



**Research Paper Submitted to  
School of Economics, Finance and Banking,  
Universiti Utara Malaysia,  
In Partial Fulfilment of the Requirement for the  
Master of Science (MSc) Finance**



**Pusat Pengajian Ekonomi,  
Kewangan dan Perbankan**

SCHOOL OF ECONOMICS, FINANCE, AND BANKING

**Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PENYELIDIKAN**  
*(Certification of Research Paper)*

Saya, mengaku bertandatangan, memperakukan bahawa  
*(I, the undersigned, certified that)*

**NOORHAMIZAH ABDUL WAHAB (821658)**

Calon untuk Ijazah Sarjana  
*(Candidate for the degree of)*

**MASTER OF SCIENCE (FINANCE)**

telah mengemukakan kertas penyelidikan yang bertajuk  
*(has presented his/her research paper of the following title)*

**THE IMPACT OF FINANCIAL DEVELOPMENT AND MACROECONOMICS VARIABLES ON  
ECONOMIC GROWTH**

Seperti yang tercatat di muka surat tajuk dan kulit kertas penyelidikan  
*(as it appears on the title page and front cover of the research paper)*

Bahawa kertas penyelidikan tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu  
dengan memuaskan.

*(that the research paper acceptable in the form and content and that a satisfactory knowledge of the field is covered  
by the dissertation).*

Nama Penyelia : **Dr. Sharmilawati Sabki**  
(Name of Supervisor)

Tandatangan :  
(Signature)

Tarikh : **14 Januari 2018**  
(Date)

## DECLARATION

I declare that thesis work described in this research paper is my own work (unless otherwise acknowledged in the text) and that there is no previous work which has been previously submitted for any academic Master's program. All sources quoted have been acknowledged by reference.

Signature

:

Name

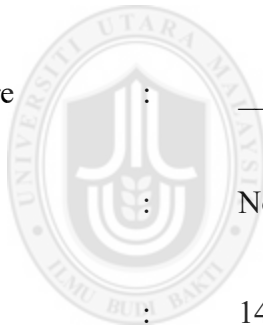
:

Noorhamizah Binti Abdul Wahab

Date

:

14 January 2018

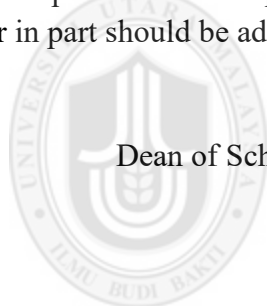


UUM  
Universiti Utara Malaysia


## PERMISSION TO USE

In presenting this dissertation in partial fulfillment of the requirement for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this dissertation in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor or in their absence, by the Dean of School of Economics, Finance and Banking where I did my dissertation. It is understood that any copying or publication or use of this dissertation parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my dissertation.

Request for permission to copy or to make other use of materials in this dissertation in whole or in part should be addressed to:



Dean of School of Economics, Finance and Banking  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darul Aman



## **ABSTRACT**

Financial development is an important element for an effective and efficient financial sector which assisted in encouraging the economic growth in ensuring the flows of capital are channelled towards the most productive use, minimizing market frictions and reducing transactions costs. The development of financial sectors as a main indicator for the country's economic growth is strongly recognized in the neo-classical views theory. The objective of the study is to determine the impact of financial development (domestic credit to private sector and gross domestic savings) and macroeconomics variables (inflation, real interest rate and trade) on economic growth for 47 of Asian countries. This study employs the unbalanced panel data in 47 of Asian countries for the period of 2000 and 2016. The dependent variable for this study is economic growth and the independent variables consist of domestic credit to private sector, gross domestic savings, inflation, real interest rate and trade. The study discovers the positive relationship between financial development and economic growth. In contrary, the study finds the negative relationship between two macroeconomics variables (inflation and real interest rate) and the economic growth. In addition, the results argue that trade is not the factor that influencing the economic growth. The findings of the study could assist the policy makers for the future policy making efforts.

**Keywords:** Financial Development, Economic Growth, Inflation, Real Interest Rate and Trade

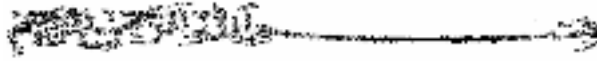
## ABSTRAK

Pembangunan kewangan merupakan elemen penting bagi sektor kewangan yang berkesan dan cekap yang membantu dalam menggalakkan pertumbuhan ekonomi dalam memastikan aliran modal disalurkan ke arah penggunaan yang paling produktif, meminimumkan pergeseran pasaran dan mengurangkan kos transaksi. Perkembangan sektor kewangan sebagai petunjuk utama pertumbuhan ekonomi negara sangat diiktiraf dalam teori pandangan neo-klasik. Objektif kajian ini adalah untuk menentukan kesan pembangunan kewangan (kredit domestik kepada sektor swasta dan simpanan domestik kasar) dan pembolehubah makroekonomi (inflasi, kadar faedah sebenar dan perdagangan) terhadap pertumbuhan ekonomi untuk 47 negara Asia. Kajian ini menggunakan data panel yang tidak seimbang di 47 negara Asia untuk tempoh 2000 dan 2016. Pemboleh ubah yang bergantung kepada kajian ini adalah pertumbuhan ekonomi dan pembolehubah bebas terdiri daripada kredit domestik kepada sektor swasta, simpanan domestik kasar, inflasi, kadar faedah sebenar dan perdagangan. Kajian ini mendapati hubungan positif antara pembangunan kewangan dan pertumbuhan ekonomi. Sebaliknya, kajian ini mendapati hubungan negatif antara dua pembolehubah makroekonomi (inflasi dan kadar faedah sebenar) dan pertumbuhan ekonomi. Di samping itu, hasilnya berpendapat bahawa perdagangan bukanlah faktor yang mempengaruhi pertumbuhan ekonomi. Penemuan kajian ini dapat membantu para pembuat dasar untuk usaha membuat kebijakan masa depan.

Kata kunci: Pembangunan Kewangan, Pertumbuhan Ekonomi, Inflasi, Kadar Faedah Sebenar dan Perdagangan



## ACKNOWLEDGEMENT



### **In the Name of Allah, the Most Forgiving and the Most Merciful**

Alhamdulillah, praise be to Allah whom we worship for the completion of my thesis. I am most grateful to Allah S.W.T for the strength I have gained and have put through during this semester period.

I would like to express greatest gratitude to my committed supervisor, Dr. Sharmilawati binti Sabki for her encouragement, guidance, advices and continuous support with patience and care, may Allah bless her.

I would as well like to thank and express love towards my parents, Abdul Wahab bin Mohd Noor and Latifah binti Ahmad, my lovely sisters Noormaimun, Noorsakinah and Noormaisarah for their support, care, guidance, love and continuously teach me to be a better person, may Allah bless and grants them love and heaven.

Last but not least, I wish to thank the entire individuals who have contributed directly or indirectly to the completion of this thesis and had given their full support and understanding.

May Allah bless all of us.

## TABLE OF CONTENT

<b>TITLE PAGE</b>	<b>PAGE</b>
<b>DECLARATION</b>	<b>I</b>
<b>PERMISSION TO USE</b>	<b>II</b>
<b>ABSTRACT</b>	<b>III</b>
<b>ABSTRAK</b>	<b>IV</b>
<b>ACKNOWLEDGEMENT</b>	<b>V</b>
<b>TABLE OF CONTENT</b>	<b>VI</b>
<b>LIST OF TABLES</b>	<b>IX</b>
<b>LIST OF FIGURES</b>	<b>X</b>
<b>LIST OF ABBREVIATIONS</b>	<b>XI</b>



**UUM**  
Universiti Utara Malaysia

## **CHAPTER ONE: INTRODUCTION**

1.0	BACKGROUND OF THE STUDY	1
1.1	ISSUES AND PROBLEM STATEMENT	3
1.2	RESEARCH QUESTIONS	7
1.3	RESEARCH OBJECTIVES	7
1.4	SIGNIFICANCE OF THE STUDY	8
1.5	SCOPE OF THE STUDY	8
1.6	STRUCTURE OF THE STUDY	9

## **CHAPTER TWO: LITERATURE REVIEW**

2.0	INTRODUCTION	10
2.1	THEORY	10
2.2	THE IMPACT OF FINANCIAL DEVELOPMENT ON ECONOMIC GROWTH	12
2.3	MACROECONOMICS DETERMINANTS OF ECONOMIC GROWTH	17
2.3.1	The Impact of Inflation on Economic Growth	17
2.3.2	The Impact of Real Interest Rate on Economic Growth	19
2.3.3	The Impact of Trade on Economic Growth	20
2.4	CONCLUSION	21

## **CHAPTER THREE: METHODOLOGY**

3.0	INTRODUCTION	22
3.1	DATA DESCRIPTION	22
3.2	DEFINITION OF VARIABLES	23
3.2.1	Dependent Variable (Economic Growth)	23
3.2.2	Independent Variable	23
a)	Financial Development	23
i)	Domestic Credit to Private Sector	23
ii)	Gross Domestic Savings	23

	b) Inflation	25
	c) Real Interest Rate	26
	d) Trade	26
3.3	RESEARCH FRAMEWORK	28
3.4	ECONOMETRICAL METHODOLOGY	29
	3.4.1 Descriptive Statistics	29
	3.4.2 Correlation Analysis	29
	3.4.3 Diagnostic Test	29
	3.4.3.1 Multicollinearity Test	30
	3.4.3.2 Heteroscedasticity Test	30
	3.4.3.3 Auto-Correlation Test	30
	3.4.4 Panel Regression Analysis	31
3.5	CONCLUSION	32
<b>CHAPTER FOUR: RESULTS AND DISCUSSION</b>		
4.0	INTRODUCTION	33
4.1	DESCRIPTIVE ANALYSIS	33
4.2	CORRELATION ANALYSIS	35
4.3	DIAGNOSTIC TEST	36
	4.3.1 Multicollinearity Test	36
	4.3.2 Heteroscedasticity Test	37
	4.3.3 Auto-Correlation Test	37
4.4	REGRESSION ANALYSIS	38
	4.4.1 Financial Development	39
	4.4.1.1 Domestic Credit to Private Sector	39
	4.4.1.2 Gross Domestic Savings	40
	4.4.2 Macroeconomics Variables	40
	4.4.2.1 Inflation	40
	4.4.2.2 Real Interest Rate	41
	4.4.2.3 Trade	41

4.5	CONCLUSION	42
-----	------------	----

## **CHAPTER FIVE: CONCLUSION AND POLICY IMPLICATION**

5.0	INTRODUCTION	43
5.1	SUMMARY OF FINDINGS	44
5.2	POLICY IMPLICATIONS	46
5.3	CONTRIBUTIONS OF THE STUDY	46
5.4	LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH	47
5.5	CONCLUSION	48

<b>REFERENCES</b>	49
-------------------	----

<b>APPENDIX A</b>	53
-------------------	----

<b>APPENDIX B</b>	54
-------------------	----

<b>APPENDIX C</b>	55
-------------------	----



## LIST OF TABLES

<b>Table No.</b>		<b>Page</b>
Table 3.1	<i>Details of Variables, Definition, Data Sources and Expected Results</i>	27
Table 4.1	<i>Descriptive Statistics of All Variables for year 2000-2016</i>	34
Table 4.2	<i>Pearson Correlation Matrix</i>	35
Table 4.3	<i>Results for Multicollinearity Test</i>	36
Table 4.4	<i>Results for Modified Wald Test</i>	37
Table 4.5	<i>Results for Wooldridge Test</i>	37
Table 4.6	<i>Results for Pooled OLS and Corrected-Panel OLS</i>	38



## LIST OF FIGURE

Figure No.	Page
Figure 3.1 Research Framework	28



## LIST OF ABBREVIATIONS

Abbreviation		Meaning
FD	=	Financial Development
GDP	=	Gross Domestic Product
ARDL	=	Autoregressive Distributed Lag
MENA	=	Middle East and North America
OLS	=	Ordinary Least Square
OECD	=	Organization for Economic Co-operation and Development.
TAR	=	Threshold Autoregressive
DCPS	=	Domestic Credit to Private Sector
GDS	=	Gross Domestic Savings
RIR	=	Real Interest Rate
USD	=	United State Dollar



UUM  
Universiti Utara Malaysia



# **CHAPTER ONE**

## **INTRODUCTION**

### **1.0 BACKGROUND OF STUDY**

The relationship between financial development and economic growth has gained a great deal of attention and become an important topic of research debate for recent decades by a number of researchers (Bittencourt, 2012; Durusu-Ciftci, Ispir & Yetkiner, 2017; Kendall, 2012). Financial development can be defined as an effective and efficient financial sector which assisted in encouraging the economic growth in ensuring the flows of capital are handled towards the most productive use, minimizing market frictions as well as reducing transactions costs (Durusu-Ciftci et al, 2017). The financial development is conducted through establishing a legal framework, building on existing financial structures, harnessing the potential of bank and increasing the liquidity and depth of the capital market.

Adnan (2011) asserts that higher degree of financial development of a country contributes towards a wider availability of the financial services offered in the financial system. Financial systems are group into three categories which consist of markets, instruments and institutions that play a significant role in transmitting fund to deficit units in ensuring a stable economic growth (Hasan & Barua, 2015).

According to Demirguc-Kunt and Levine (2008), a well-developed financial systems assist in reducing the transactions and information costs which enhancing the

The contents of  
the thesis is for  
internal user  
only

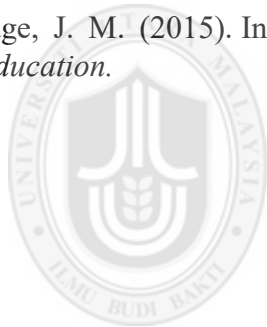
## REFERENCES

- Adnan, N. (2011). Measurement of financial development: A fresh approach. In *8th International Conference on Islamic Economics and Finance. University of Surrey, United Kingdom and Comsats Institute of Information Technology, Islamabad, Pakistan*.
- Adu, G., Marbuah, G., & Mensah, J. T. (2013). Financial development and economic growth in Ghana: Does the measure of financial development matter? *Review of Development Finance*, 3(4), 192-203.
- Afzal, M., & Hussain, I. (2010). Export-led growth hypothesis: Evidence from Pakistan. *Journal of Quantitative Economics*, 8, 130-147.
- Aizenman, J., Jinjark, Y., & Park, D. (2015). Financial development and output growth in developing Asia and Latin America: A comparative sectoral analysis (No. w20917). *National Bureau of Economic Research*.
- Al-Malkawi, H. A. N., Marashdeh, H. A., & Abdullah, N. (2012). Financial development and economic growth in the UAE: Empirical assessment using ARDL approach to co- integration. *International Journal of Economics and Finance*, 4(5), 105.
- Aric, K. H. (2014). The effects of financial development on economic growth in the European Union: A panel data analysis. *International Journal of Economic Practices and Theories*, 4(4), 466-471.
- Arrow, K. (1962). Economic welfare and the allocation of resources for invention. In *The rate and direction of inventive activity: Economic and social factors* (pp. 609-626). *Princeton University Press*.
- Azzez, B. A., Kolapo, F. T., & Ajayi, L. B. (2012). Effect of exchange rate volatility on macroeconomic performance in Nigeria. *Interdisciplinary journal of contemporary research in business*, 4(1), 149-155.
- Barro, R. J. (2013). Inflation and economic growth. *Annals of Economics & Finance*, 14(1), 85–109.
- Bayar, Y. (2014). Financial development and economic growth in emerging Asian Countries. *Asian Social Science*, 10(9), 8.
- Bittencourt, M. (2012). Financial development and economic growth in Latin America: Is Schumpeter right? *Journal of Policy Modeling*, 34(3), 341-355.
- Busse, M., & Koniger, J. (2012). Trade and economic growth: A re-examination of the empirical evidence (No. 123). *Hamburg Institute of International Economics*.

- Chandavarkar, A. (1992). Of finance and development: neglected and unsettled questions. *World development*, 20(1), 133-142.
- Chang, T., & Caudill, S. B. (2005). Financial development and economic growth: The case of Taiwan. *Applied Economics*, 37(12), 1329-1335.
- Chang, S. H., & Huang, L. C. (2010). The nexus of finance and GDP growth in Japan: Do real interest rates matter? *Japan and the World Economy*, 22(4), 235-242.
- Demirguc-Kunt, A., & Levine, R. (2008). *Finance, financial sector policies, and long-run growth* (Vol. 4469). World Bank Publications.
- Durusu-Ciftci, D., Ispir, M. S., & Yetkiner, H. (2017). Financial development and economic growth: Some theory and more evidence. *Journal of Policy Modeling*, 39(2), 290-306.
- Fattahi, S., Tiatoraj, A., & Moshtaghi, N (2016). Nonlinear relationship between inflation and economic growth. *International Academic Journal of Economics*, 3(6), 46-61.
- Goldsmith, R.W., (1969). Financial structure and development. *Yale University Press*. New Haven, CT.
- Hasan, R., & Barua, S. (2015). Financial development and economic growth: Evidence from a panel study on South Asian countries. *Asian Economic and Financial Review*, 5(10), 1159-1173.
- Hansen, B. E., & Seshadri, A. (2013). Uncovering the relationship between real interest rates and economic growth (WP 2013-303). *Retirement Research Center University of Michigan*
- Hassan, M. K., Sanchez, B., & Yu, J. S. (2011). Financial development and economic growth: New evidence from panel data. *The Quarterly Review of economics and finance*, 51(1), 88-104.
- Kallen, C. (2016). Financial development and economic growth at different income levels. *Washington University in St. Louis*.
- Kar, M., Nazlioglu, S., & Agir, H. (2011). Financial development and economic growth nexus in the MENA countries: Bootstrap panel granger causality analysis. *Economic modelling*, 28(1), 685-693.
- Keho, Y. (2017). The impact of trade openness on economic growth: The case of Cote d'Ivoire. *Cogent Economics & Finance*, 5(1), 1332820.
- Kendall, J. (2012). Local financial development and growth. *Journal of Banking & Finance*, 36(5), 1548-1562.

- Lee, C., & Wong, S. Y. (2005). Inflationary threshold effects in the relationship between financial development and economic growth: Evidence from Taiwan and Japan. *Journal of Economic Development*, 30(1), 49.
- Liang, Q., & Jian-Zhou, T. (2006). Financial development and economic growth: Evidence from China. *China economic review*, 17(4), 395-411.
- Marwa, N., & Zhanje, S. (2015). A review of finance–growth nexus theories: How does development finance fits in? *Studies in Business and Economics*, 10(1), 83-91.
- McKinnon, R.L (1973). *Money and Capital in Economic Development*, Washington
- Mehrara, M., & Ghamati, F. (2014). Financial development and economic growth in developed countries. *International Letters of Social and Humanistic Sciences (ILSHS)*, 25, 75-81.
- Musila, J. W., & Yihenis, Z. (2015). The impact of trade openness on growth: The case of Kenya. *Journal of Policy Modeling*, 37(2), 342-354.
- Mutinda, D. M. (2014). The effect of lending interest rate on economic growth in Kenya. *University Of Nairobi*.
- Newbold, P., Carlson, W., & Thorne, B. (2012). *Statistics for business and economics*. Pearson.
- Ramlan, H., & Suhaimi (2017). The relationship between interest rates and inflation toward the economic growth in Malaysia. *Journal of Humanities, Language, Culture and Business, Vol 1*, 55-63.
- Rasmidatta, P. (2011). The relationship between domestic saving and economic growth and convergence hypothesis: Case study of Thailand. *Sodertorn University*.
- Romer, P. M. (1994). New goods, old theory, and the welfare costs of trade restrictions. *Journal of Development Economics*, 43, 5-38.
- Samargandi, N., Fidrmuc, J., & Ghosh, S. (2014). Financial development and economic growth in an oil-rich economy: The case of Saudi Arabia. *Economic Modelling*, 43, 267-278.
- Sandri, S., Alshyab, N., & Ghazo, A. (2016). Trade in goods and services and its effect on economic growth: The case of Jordan. *Applied Econometrics and International Development*, 16(2), 113-128.
- Schumpeter, J. A. (1911). 1934 . *The theory of economic development. : An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Translated from the German by Redvers Opie. With an Introduction by John E. Elliott. New Brunswick, NJ: Transaction Publishers.

- Shaw, E. (1973). Financial deepening in economic development, New York: Oxford University Press.
- Solow, R. M. (1956). A contribution to the theory of economic growth. *The quarterly journal of economics*, 70(1), 65-94.
- Sothan, S. (2014). Causal relationship between domestic saving and economic growth: Evidence from Cambodia. *International Journal of Economics and Finance*, 6(9), 213.
- Stiglingh, A. (2015). Financial development and economic growth in BRICS and G-7 countries: A comparative analysis. (Doctoral dissertation, North-West University).
- Tekin, R. B. (2012). Development aid, openness to trade and economic growth in least developed countries: Bootstrap panel granger causality analysis. *Procedia-Social and Behavioral Sciences*, 62, 716-721.
- Were, M. (2015). Differential effects of trade on economic growth and investment: A cross- country empirical investigation. *Journal of African Trade*, 2(1), 71-85.
- Wooldridge, J. M. (2015). Introductory econometrics: A modern approach. *Nelson Education*.



UUM  
Universiti Utara Malaysia

## APPENDIX A

```
. (9 vars, 799 obs pasted into editor)

. tsset code year
    panel variable:  code, 1 to 47
    time variable:  year, 2000 to 2016

. regress lngdp x1domesticcredittoprivatesectoro x2inflationgdpdeflatorannual x3
> realinterestrate x4tradeofgdp x5grossdomesticsavingsofgdp
```

Source	SS	df	MS	Number of obs =	565
Model	768.890944	5	153.778189	F( 5, 559) =	153.05
Residual	561.674584	559	1.00478459	Prob > F =	0.0000
				R-squared =	0.5779
				Adj R-squared =	0.5741
Total	1330.56553	564	2.35915874	Root MSE =	1.0024

Lngdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
x1domestic~o	.0088109	.0011258	7.83	0.000	.0065996 .0110221
x2inflatio~1	-.0682821	.0093202	-7.33	0.000	-.0865889 -.0499753
x3realinte~e	-.0550839	.0086863	-6.34	0.000	-.0721456 -.0380222
x4tradeofgdp	.0025665	.0007088	3.62	0.000	.0011743 .0039587
x5grossdom~p	.0259104	.0019306	13.42	0.000	.0221184 .0297024
_cons	7.607703	.1787372	42.56	0.000	7.256625 7.958782

```
. vif
```

Variable	VIF	1/VIF
x2inflatio~1	3.55	0.281403
x3realinte~e	3.37	0.296866
x1domestic~o	1.77	0.565917
x5grossdom~p	1.17	0.855355
x4tradeofgdp	1.06	0.939476
Mean VIF	2.18	

```
. ssc install xttest3
checking xttest3 consistency and verifying not already installed...
all files already exist and are up-to-date.
```

```
. ssc install xtserial
ssc install: "xtserial" not found at SSC, type -findit xtserial-
(To find all packages at SSC that start with x, type -ssc describe x-)
r(601);
```

```
. findit xtserial
```

```
. xttest3
```

Modified wald test for groupwise heteroskedasticity in fixed effect regression model

H0:  $\sigma(i)^2 = \sigma^2$  for all i

chi2 (37) = 1307.09

Prob>chi2 = 0.0000

```
. xtserial lngdp x1domesticcredittopprivatesectorx2inflationgdpdeflatorannual x
> 3realinterestrate x4tradeofgdp x5grossdomesticsavingsofgdp
```

wooldridge test for autocorrelation in panel data  
H0: no first order autocorrelation

F( 1, 36) = 1124.350  
Prob > F = 0.0000

```
. regress lngdp x1domesticcredittopprivatesectoro x2inflationgdpdeflatorannual x3
> realinterestrate x4tradeofgdp x5grossdomesticsavingsofgdp, robust
cluster (code)
```

Regression with robust standard errors

Number of obs = 565

F( 5, 36) = 29.18

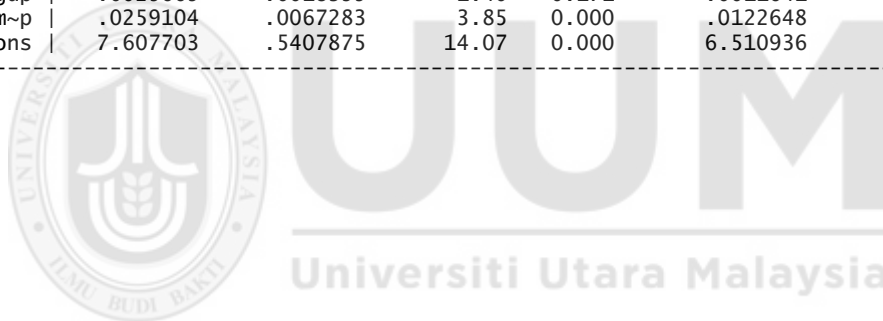
Prob > F = 0.0000

R-squared = 0.5779

Number of clusters (code) = 37

Root MSE = 1.0024

Lngdp	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
x1domestic~o	.0088109	.0030138	2.92	0.006	.0026987 .014923
x2inflatio~1	-.0682821	.0199891	-3.42	0.002	-.1088218 -.0277424
x3realinte~e	-.0550839	.0191153	-2.88	0.007	-.0938515 -.0163164
x4tradeofgdp	.0025665	.0018395	1.40	0.171	-.0011641 .0062971
x5grossdom~p	.0259104	.0067283	3.85	0.000	.0122648 .039556
_cons	7.607703	.5407875	14.07	0.000	6.510936 8.704471





## APPENDIX B

### Descriptive Statistics

	Obs	Minimum	Maximum	Mean	Standard Deviation
<b>GDP (USD billion)</b>	<b>565</b>	<b>138.437</b>	<b>88564.820</b>	<b>10952.810</b>	<b>15860.460</b>
<b>Domestic credit to private sector (%)</b>	<b>565</b>	<b>1.267</b>	<b>253.574</b>	<b>57.879</b>	<b>49.840</b>
<b>Inflation (%)</b>	<b>565</b>	<b>-27.206</b>	<b>39.178</b>	<b>6.395</b>	<b>8.537</b>
<b>Real interest rate (%)</b>	<b>565</b>	<b>-19.927</b>	<b>53.543</b>	<b>5.588</b>	<b>8.918</b>
<b>Trade (%)</b>	<b>565</b>	<b>19.798</b>	<b>441.604</b>	<b>96.789</b>	<b>61.440</b>
<b>Gross domestic savings (%)</b>	<b>565</b>	<b>-102.428</b>	<b>75.550</b>	<b>24.251</b>	<b>23.640</b>

## APPENDIX C

	<b>Y=</b> <b>LNGDP</b>	<b>X1=</b> <b>DCPS</b>	<b>X2=</b> <b>Inf</b>	<b>X3=</b> <b>RIR</b>	<b>X4=</b> <b>Trade</b>	<b>X5=</b> <b>GDS</b>
<b>Y=LNGDP</b>	<b>1.000000</b>					
<b>X1=DCPS</b>	<b>0.416437</b>	<b>1.000000</b>				
<b>X2= Inf</b>	<b>-0.211135</b>	<b>-0.338516</b>	<b>1.000000</b>			
<b>X3= RIR</b>	<b>-0.152685</b>	<b>-0.147316</b>	<b>-0.711563</b>	<b>1.000000</b>		
<b>X4=Trade</b>	<b>0.265480</b>	<b>0.219325</b>	<b>-0.075008</b>	<b>-0.043836</b>	<b>1.000000</b>	
<b>X5=GDS</b>	<b>0.497262</b>	<b>0.226197</b>	<b>-0.009748</b>	<b>-0.249171</b>	<b>0.157309</b>	<b>1.000000</b>