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# **THE DETERMINANTS OF FINANCIAL INTEGRATION**

**NIK NURNINA HIDAYAH BINTI NIK MAN**



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

# **THE DETERMINANTS OF FINANCIAL INTEGRATION**

**By**

**NIK NURNINA HIDAYAH BINTI NIK MAN**



**UUM**  
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**Research Paper Submitted to  
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**Pusat Pengajian Ekonomi,  
Kewangan dan Perbankan**

SCHOOL OF ECONOMICS, FINANCE, AND BANKING

**Universiti Utara Malaysia**

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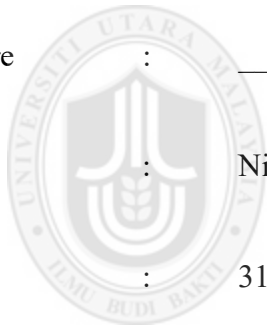
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## ABSTRACT

Financial integration is a condition of which the financial markets are closely linked together. The financial integration imposed in the financial systems is conducted through various channels which includes financial liberalization, financial openness, capital account liberalization and external debt. The financial liberalisation theory that is developed by McKinnon (1973) argues for the importance of financial liberalisation for the country's development. By enhancing the breadth and depth of financial markets, reducing information and transaction costs, financial integration would bring positive impacts to the economy as a whole. The objective of this study is to examine the impact of determinants (trade openness, gross domestic product, exchange rate, tax revenue and financial crisis) on financial integration in seven major economies in ASEAN countries. This study employs the unbalanced data for seven selected ASEAN countries which are Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand and Vietnam between the periods of 2000 to 2016. The dependent variables for this study is financial integration which is represented by external debt. The study focuses on five independent variables which are trade openness, economic growth, exchange rate, tax revenue and financial crisis. The study discovers the positive relationship between economic growth and financial integration for seven ASEAN countries. In addition, the study also finds the positive link between tax revenue and financial integration. In contrary, the trade openness is found to have a negative relationship with the financial integration. Moreover, financial crisis also has a negative and significant relationship with financial integration. This study finds that the financial integration reduces during the post crisis period. Other than that, official exchange rate shows the positive but insignificant relationship with financial integration. For the policy makers, the findings could assist in the future policy making efforts.

**Keywords:** Financial integration, External Debt, ASEAN, Trade Openness, Economic Growth, Exchange rate, Tax Revenue, Financial Crisis.

## ABSTRAK

Integrasi kewangan adalah keadaan di mana pasaran kewangan berkait rapat. Integrasi kewangan yang dikenakan dalam sistem kewangan dijalankan melalui pelbagai saluran yang merangkumi liberalisasi kewangan, keterbukaan kewangan, liberalisasi akaun modal dan hutang luar negeri. Teori liberalisasi kewangan yang dikembangkan oleh McKinnon (1973) berpendapat pentingnya liberalisasi kewangan untuk pembangunan negara. Dengan meningkatkan keluasan dan kedalaman pasaran kewangan, mengurangkan kos maklumat dan urus niaga, integrasi kewangan akan membawa kesan positif kepada ekonomi secara keseluruhan. Objektif kajian ini adalah untuk mengkaji kesan penentu (keterbukaan perdagangan, keluaran dalam negeri kasar, kadar pertukaran, hasil cukai dan krisis kewangan) terhadap integrasi kewangan dalam tujuh ekonomi utama di negara-negara ASEAN. Kajian ini menggunakan data yang tidak seimbang bagi tujuh negara ASEAN yang terpilih iaitu Kemboja, Indonesia, Laos, Malaysia, Filipina, Thailand dan Vietnam antara tempoh 2000 hingga 2016. Pembolehubah bergantung kepada kajian ini adalah integrasi kewangan yang diwakili oleh hutang luar negeri kajian hanya memberi tumpuan kepada lima pembolehubah bebas yang keterbukaan perdagangan, pertumbuhan ekonomi, kadar pertukaran, hasil cukai dan krisis kewangan. Kajian ini menemui hubungan positif antara pertumbuhan ekonomi dan integrasi kewangan untuk tujuh negara ASEAN. Di samping itu, kajian itu juga mendapati hubungan positif antara hasil cukai dan integrasi kewangan. Sebaliknya, keterbukaan perdagangan didapati mempunyai hubungan negatif dengan integrasi kewangan. Di samping itu, krisis kewangan mempunyai hubungan yang negatif dan signifikan dengan integrasi kewangan. Kajian ini mendapati bahawa integrasi kewangan menurun semasa tempoh pasca krisis. Selain daripada itu, kadar pertukaran rasmi menunjukkan hubungan positif tetapi tidak penting dengan integrasi kewangan. Bagi pembuat dasar, penemuan ini boleh membantu dalam usaha membuat polisi masa depan.

Kata kunci: Integrasi Kewangan, Hutang Luar Negeri, ASEAN, Keterbukaan Perdagangan, Pertumbuhan Ekonomi, Kadar Pertukaran, Hasil Cukai, Krisis Kewangan.



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## LIST OF ABBREVIATIONS

<b>Abbreviation</b>		<b>Meaning</b>
ASEAN	=	Association of Southeast Asian National
AEC	=	ASEAN Economic Community
CPIS	=	Coordinated Portfolio Investment Survey
ECM	=	Error Correction Model
ED	=	External Debt
ER	=	Exchange Rate
EU	=	Eropean Union
FI	=	Financial Integration
GDP	=	Gross Domestic Product
GMM	=	Generalised Method of Moments
MENA	=	Middle East and North America
OLS	=	Ordinary Least Square
SAARC	=	South Asian Association for Regional Cooperation
SSA	=	Sub Saharan Africa
USD	=	United State Dollar

# CHAPTER ONE

## INTRODUCTION

### 1.1 BACKGROUND OF THE STUDY

During the last decades, the process of financial integration has transformed the financial system around the world. According to Baele, Ferrando, Hördahl, Krylova and Monnet (2004), financial integration is a condition of which the financial markets are closely linked together. An integrated market would allow a country to invest and borrow money from other countries. The financial integration imposed in the financial systems is conducted through various channels which includes financial liberalization, financial openness, capital account liberalization and external debt (Garali & Othmani, 2015; Siddique, Selvanathan & Selvanathan, 2015).

The financial liberalization theory that is developed by McKinnon (1973) argues for the importance of financial liberalization for the country's development. By enhancing the breadth and depth of financial markets, reducing information and transaction costs, financial integration would bring positive impacts to the economy as a whole (Bank Negara Malaysia, 2013).

There are few benefits of financial integration. Baele *et al.* (2004) states that financial integration brings benefit such as risk diversification and risk sharing that provides advantages for the international investment activities. In addition, according to Levine (2001), financial liberalization strengthens the domestic financial sector but



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## APPENDIX A

. (9 vars, 119 obs pasted into editor)

. tsset code year  
 panel variable: code, 1 to 7  
 time variable: year, 2000 to 2016

. regress lnnextdebt x1trade x2lngdp x3lner x4taxrev x5fincrisis2008

Source	SS	df	MS	Number of obs =	96
Model	121.608839	5	24.3217677	F( 5, 90) =	43.44
Residual	50.3950012	90	.559944457	Prob > F =	0.0000
				R-squared =	0.7070
				Adj R-squared =	0.6907
Total	172.00384	95	1.81056673	Root MSE =	.74829

lnnextdebt	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
x1trade	-.0160784	.002333	-6.89	0.000	[-.0207133, -.0114435]
x2lngdp	1.013148	.1289958	7.85	0.000	[.7568751, 1.26942]
x3lner	-.0818157	.0396082	-2.07	0.042	[-.1605043, -.0031271]
x4taxrev	.1276697	.0277933	4.59	0.000	[.0724535, .182886]
x5fincr~2008	-.3351503	.2174315	-1.54	0.127	[-.7671159, .0968153]
_cons	17.32877	1.15688	14.98	0.000	[15.03043, 19.62712]

. vif

Variable	VIF	1/VIF
x3lner	2.78	0.359614
x2lngdp	2.28	0.438297
x1trade	1.70	0.588361
x4taxrev	1.43	0.700686
x5fincr~2008	1.01	0.990443
Mean VIF	1.84	

. 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 (7) = 188.91

Prob>chi2 = 0.0000

. xtserial lnnextdebt x1trade x2lngdp x3lner x4taxrev x5fincrisis2008

wooldridge test for autocorrelation in panel data

H0: no first order autocorrelation

F( 1, 6) = 78.566  
 Prob > F = 0.0001

. regress lnextdebt x1trade x2lngdp x3lner x4taxrev x5fincrisis2008, robust cluster (code)

Regression with robust standard errors  
 Number of obs = 96  
 F( 5, 6) = 30.04  
 Prob > F = 0.0004  
 R-squared = 0.7070  
 Root MSE = .74829  
 Number of clusters (code) = 7

lnextdebt	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
x1trade	-.0160784	.0044434	-3.62	0.011	-.0269509 -.0052059
x2lngdp	1.013148	.2879033	3.52	0.013	.3086737 1.717622
x3lner	-.0818157	.1022713	-0.80	0.454	-.3320645 .1684331
x4taxrev	.1276697	.0433486	2.95	0.026	.0215996 .2337399
x5fincr~2008	-.3351503	.0845792	-3.96	0.007	-.5421081 -.1281924
_cons	17.32877	2.02932	8.54	0.000	12.36321 22.29434

. correlate lnextdebt x1trade x2lngdp x3lner x4taxrev x5fincrisis2008 (obs=96)

	lnextd~t	x1trade	x2lngdp	x3lner	x4taxrev	x5f~2008
lnextdebt	1.0000					
x1trade	-0.1000	1.0000				
x2lngdp	0.7303	0.2734	1.0000			
x3lner	-0.4559	-0.4496	-0.7140	1.0000		
x4taxrev	0.2128	0.4241	0.1713	-0.0052	1.0000	
x5fincr~2008	-0.0592	-0.0729	0.0046	0.0555	-0.0013	1.0000

. xtsum extdebt x1trade x2gdp x3exchangerate x4taxrev

Variable	Mean	Std. Dev.	Min	Max	Observations	
extdebt	overall	7.02e+10	6.95e+10	1.95e+09	3.09e+11	N = 112
	between		6.46e+10	3.96e+09	1.86e+11	n = 7
	within		3.48e+10	3.19e+09	1.93e+11	T = 16
x1trade	overall	111.838	43.32676	37.3868	220.4073	N = 119
	between		42.66544	53.86337	174.6951	n = 7
	within		17.42682	65.22611	157.5503	T = 17
x2gdp	overall	2671.046	2601.961	300.6851	11183.96	N = 119
	between		2422.633	708.2483	7525.975	n = 7
	within		1302.639	-939.8147	6329.032	T = 17
x3exch~e	overall	5836.704	6404.209	3.060003	21935	N = 119
	between		6761.252	3.564744	17789.31	n = 7
	within		1223.903	2215.144	9982.394	T = 17
x4taxrev	overall	14.11027	3.299958	7.537844	22.40083	N = 96
	between		3.200322	10.12056	20.01258	n = 7
	within		1.386501	9.397125	18.55078	T = 13.7143



. tabstat extdebt x1trade x2gdp x3exchangerate x4taxrev x5fincrisis2008, statistics  
 ( mean max min sd ) by (country) columns (variables)

Summary statistics: mean, max, min, sd by categories of: country (Country)

country	extdebt	x1trade	x2gdp	x3exch~e	x4taxrev	x5f~2008
Cambodia	3.96e+09	124.7505	708.2483	4033.634	10.12056	.1176471
	9.32e+09	144.6145	1269.907	4184.917	14.56106	1
	1.95e+09	105.1385	300.6851	3840.75	7.537844	0
	2.36e+09	10.92175	318.6939	84.94216	2.219719	.3321056
Indonesia	1.86e+11	53.86337	2247.781	9992.673	11.53628	.1176471
	3.09e+11	71.43687	3687.954	13389.41	13.31062	1
	1.28e+11	37.3868	747.9818	8421.775	10.53749	0
	6.23e+10	9.310196	1159.588	1516.528	.8065331	.3321056
Laos	5.71e+09	76.37627	1045.758	8953.774	13.33931	.1176471
	1.16e+10	86.32086	2353.153	10655.17	14.20915	1
	2.51e+09	66.27874	319.8271	7860.138	12.10294	0
	2.98e+09	6.894009	706.8845	1066.706	.6718983	.3321056
Malaysia	1.09e+11	174.6951	7525.975	3.564744	15.06508	.1176471
	1.97e+11	220.4073	11183.96	4.148308	17.79489	1
	4.19e+10	128.0832	3915.115	3.060003	13.3322	0
	5.90e+10	30.43649	2660.263	.3278299	1.168334	.3321056
Philippines	6.33e+10	81.48235	1858.017	47.76889	12.81255	.1176471
	7.77e+10	104.7299	2951.072	56.03992	13.71187	1
	5.60e+10	60.24529	957.2808	42.22879	11.81599	0
	6.68e+09	17.58468	754.239	4.54734	.6648541	.3321056
Thailand	8.81e+10	128.3945	4123.726	36.20239	15.09564	.1176471
	1.37e+11	140.437	6171.262	44.4319	17.29467	1
	5.84e+10	114.9697	1893.145	30.49173	12.97672	0
	3.14e+10	8.240787	1587.687	4.570741	1.225027	.3321056
Vietnam	3.55e+10	143.3041	1187.814	17789.31	20.01258	.1176471
	7.78e+10	184.6863	2185.69	21935	22.40083	1
	1.26e+10	103.2444	433.3337	14167.75	15.29943	0
	2.34e+10	26.12929	633.9349	2757.232	2.123894	.3321056
Total	7.02e+10	111.838	2671.046	5836.704	14.11027	.1176471
	3.09e+11	220.4073	11183.96	21935	22.40083	1
	1.95e+09	37.3868	300.6851	3.060003	7.537844	0
	6.95e+10	43.32676	2601.961	6404.209	3.299958	.3235521