THE IMPACT OF HOUSING LOAN/FINANCING ON RISK PERFORMANCES IN A DUAL BANKING SYSTEM

BY

MUHAMAMAD ARIF FADILAH BIN ISHAK

Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
In Partial Fulfilment of the Requirement for the
Master in Islamic Finance and Banking

Pusat Pengajian Perniagaan Islam
ISLAMIC BUSINESS SCHOOL
كلية إدارة الأعمال الإسلامية
Universiti Utara Malaysia

PERAKUAN KERJA KERTAS PENYELIDIKAN
(Certification of Research Paper)

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

MUHAMMAD ARIF FADILAH BIN ISHAK

Calon untuk Ijazah Sarjana
(Candidate for the degree of)

MASTER IN ISLAMIC FINANCE AND BANKING (MIFB)

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

The impact of housing financing on risk performance in a dual banking system

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 research paper).

Nama Penyelia : **MOHAMAD YAZID BIN ISA**
(Name of Supervisor)

Tandatangan :
(Signature)

Tarikh : **23 MEI 2018**
(Date)

PERMISSION TO USE

In presenting this dissertation in partial fulfilment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this dissertation in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor or, in his absence by the Dean of Othman Yeop Abdullah Graduate School of Business. It is understood that any copying or publication or use of this dissertation or part thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition will be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my dissertation.

Any request for permission to copy or make other use of the materials in this dissertation, in whole or in part should be addressed to:

Dean
Othman Yeop Abdullah Graduate School of Business
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman, Malaysia

ABSTRAK

Pinjaman/pembiayaan perumahan adalah produk penting kepada bank. Salah satu sumbangan utama kepada keuntungan bank. Kajian ini mengkaji kesan pinjaman / pembiayaan perumahan dan pembolehubah lain dengan prestasi risiko bank di Malaysia. Pemboleh ubah bersandar yang digunakan dalam kajian ini adalah Pinjaman Tidak Berbayar (NPL) dan Peruntukan Kerugian Pinjaman (LLP). Kajian ini menggunakan enam (6) pembolehubah bebas yang dibahagikan kepada dua bahagian; pembolehubah khusus bank dan makro-ekonomi. Pembolehubah khusus bank melibatkan pembolehubah yang dikawal dalam pengurusan bank dan ini termasuk perbelanjaan (TEXPTI), jumlah pinjaman (TLTA), pendapatan (INCTL) dan pinjaman/pembiayaan perumahan (LPRO). Pembolehubah makroekonomi merujuk kepada pemboleh ubah faktor luaran dan kajian ini menggunakan Indeks Keluaran Dalam Negara Kasar (GDP) dan Indeks Harga Pengguna (CPI) sebagai proksi pembolehubah makroekonomi. Data ini terhad kepada bank perdagangan dan bank Islam di Malaysia dalam tempoh 2002-2016. Hasil daripada model Rawak dan Tetap menunjukkan bahawa pinjaman/pembiayaan perumahan mempunyai kesan yang signifikan dan negatif terhadap bank (NPL). Bagi pemboleh ubah bergantung lain, pinjaman/pembiayaan perumahan juga menunjukkan hubungan yang signifikan dengan bank (LLP). Dari analisis, dapat disimpulkan bahawa walaupun bank komersial menguasai pasar pinjaman/pembiayaan perumahan, namun bank Islam mampu bersaing dengan bank komersial dalam jenis pembiayaan tertentu ini. Selain daripada itu pinjaman/pembiayaan perumahan sangat penting bagi bank. Ini kerana hasil menunjukkan pinjaman/pembiayaan perumahan adalah portfolio risiko rendah dalam pelaburan bank.

Kata kunci: Prestasi Risiko Bank, Perbankan Komersial, Perbankan Islam, NPL, LLP

ABSTRACT

The housing loan/financing are important product to the bank due to its the major contribution to the bank profit. This study investigates the impact of housing loan/financing and other variables with bank risk performance of dual banking system in Malaysia. The dependent variable used in this study is Non-Performing Loan (NPL) and Loan Loss Provision (LLP). This study uses six (6) independent variables which are divided into two parts; bank specific and macro-economic variables. Bank specific variables involve variables which are controllable within bank management and these include expenses (TEXPTI), total loan (TLTA), income (INCTL) and housing loan/financing (LPRO). Macroeconomic variables refer to the external factor variable and this study uses Gross Domestic Product (GDP) and Consumer Price Index (CPI) as proxies of macroeconomic variables. The data is restricted to commercial and Islamic banks in Malaysia within the period of 2002-2016. The results from Random and Fixed Effect models show that housing loan/financing has significant and negative impact on banks (NPL). As for other dependent variable, housing loan/financing also show significant relationship with banks (LLP). From the analysis, it can be concluded that even though commercial banks seem to dominate housing loan/financing market, but Islamic banks are capable to compete with commercial bank in this specific type of financing. Furthermore, housing loan/financing are very importance to the bank. It's because the result show housing loan/financing are low risk portfolio in bank investment. As nature, the housing loan/financing will be backed by the mortgage and it will mitigate the risk in investment.

Keyword: Risk Bank Performance, Commercial Bank, Islamic Bank, Non-Performing Loan (NPL) and Loan Loss Provision (LLP).

ACKNOWLEDGEMENT

By the name of ALLAH, I would like to dedicate this thesis to the Almighty God for His faithfulness. He guided, preserved, and granted me journey mercies throughout the Master Journey at the Universiti Utara Malaysia - The Eminent Management University. He never allowed me to be starved of knowledge, inspiration, wisdom, and understanding. To Him alone be all the glory.

I am grateful to my supervisor, Ustaz Mohamad Yazid Isa. His professional, constructive, and valuable criticisms and contributions contributed in no small measure to the timely and successful completion of the programme. It was indeed a great privilege and experience to have had him as a supervisor. To the management of the Universiti Utara Malaysia (UUM), I am highly grateful for making resources available at the UUM Library for me to access throughout the programme.

On a more personal level, I want to thank my family for their unconditional love, understanding and support. My father and mother raised me to believe that I could achieve anything i set my mind to. My brothers and sisters have been an endless source of great joy, love and assistance. I want to thank them all for their interest and assurance that the journey does have an end at times when it seems like no end was insight.

Last but not least, I would also like to thank my friends who have directly or indirectly provide assistance and motivation for me in the process of completing this research paper.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ARDL	Autoregressive Distributed Lag
BBA	*Bay Bithaman Ajil*
BNM	Bank Negara Malaysia
CPI	Consumer Price Index
FEVD	Forecast Error Variance Decomposition
GDP	Gros Domestic Product
INCTL	Income divide Total Loan
IRF	Impulse Response Function
LLP	Loan Loss Provision
LLPTA	Loan Loss Provision over Total Loan
LPRO	Natural Log Housing Financing
NPL	Non-Performing Loan
ROA	Return on Asset
ROE	Return on Equity
RRI	Islamic Rental Rate
TEXPTI	Total Expenses Divide Income
TLTA	Total Loan Divide Total Loan
VIF	Variance Inflation Factor

CHAPTER 1

INTRODUCTION

1.1 Introduction

House is a basic need for every human being. Beside as a protection, it serves as a place to spend time with the family and a place where family members gather together to celebrate special occasion. Even though house plays an important role in our life, buying a house needs a long-term commitment and large financial obligation. With the rise of house prices, it is difficult for people to buy house. Most people today cannot afford to own a house and they have to apply housing financing from financial institutions such as commercial banks and Islamic banks. It is common for commercial banks to offer loan with interest for customers that intent to buy house. In contrast with Islamic banks, they offer housing financing that is based on Shariah principles where element of interest is being eliminated from the contract (Iqbal and Mirakhor, 2007; Khir, Gupta, and Shanmugam, 2007; Haron, 2005; Haron and Shanmugam, 2001).

Housing loan/financing refers to a long-term financing facility provided by financial institutions for purchasing house and Bank Negara Malaysia (BNM) has set a maximum period of repayment of 35 years for this type of financing (Ahmad, 2003). There are two types of housing loan/financing plans in Malaysia, namely fixed and flexible housing loan plans. The fixed housing loan plan is a loan which instalment payable on a monthly basis is fixed until the end of instalment period. As for a flexible housing loan, it gives the borrower option to reduce the instalment at any time by paying more than the instalment or paying in lump sum at any one time. With this

REFERENCES

Adzobu, L. D., Agbloyor, E. K., and Aboagye, A. (2017). The effect of loan portfolio diversification on banks' risks and return: Evidence from an emerging market. *Managerial Finance*, *43*(11), 1274-1291.

Ahmad, F. A. (2003). *Pembiayaan perumahan secara Islam: antara nilai komersial dan tanggungjawab sosial*. Utusan Publications and Distributors.

Ahmad, N. H., and Ahmad, S. N. (2004). Key factors influencing credit risk of Islamic bank: A Malaysian case. *The Journal of Muamalat and Islamic Finance Research*, *1*(1), 65-80.

Al-abedallat, A. Z. (2016). Factors affecting credit risk: An empirical study of the Jordanian commercial banks. *European Scientific Journal, ESJ*, *12*(34).

Al-Alawanah, Raniyah Zaidan Syahadah (2009). *Idarah al-Mukhatirah fi al-Masarif al-Islamiyah*, Amman: Dar 'Imad al-Din li al-Nasyr.

Al- Quran al-Karim, tafsir pimpinan al-Rahman

Al-Wesabi Hamid, A.H and Nor Hayati, Ahmad (2013). "Credit Risk of Islamic Banks in GCC Countries". vol. 10, issue no. 2, *International Journal of Banking and Finance*, pp: 120-136.

Amin, H. (2008). Choice criteria for Islamic housing financing: Empirical investigation among Malaysian bank customers. *International Journal of Housing Markets and Analysis*, 1(3), 256-274.

Amin, H., Abdul Rahman, A. R., Abdul Razak, D., and Rizal, H. (2017). Consumer attitude and preference in the Islamic mortgage sector: a study of Malaysian consumers. *Management Research Review*, *40*(1), 95-115.

Aver, B. (2008). An empirical analysis of credit risk factors of the Slovenian banking system. *Managing Global Transitions*, *6*(3), 317.

Azraa Arrmyza, R. (2015). *Determinants of credit risks in Islamic banks in Malaysia* (Doctoral dissertation, Universiti Utara Malaysia)

Baltagi, B.H. (2005). *Econometric Analysis of Panel Data*. 3rd Edition, John Wiley and Sons Inc., New York.

Baltagi, B.H. (2001). *Econometric Analysis of Panel Data.* 2nd edition. England: John Wiley and Sons.

Bandyopadhyay, A., and Saha, A. (2009). Factors driving Demand and default risk in residential Housing Loans: Indian Evidence.

Bank Negara Malaysia (2018). Monthly statistical bulletin 2018. Kuala Lumpur: Bank Negara Malaysia.

Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *The review of economic studies*, *51*(3), 393-414.

Donkor-Hyiaman, K. A., and Owusu-Manu, D. (2016). Another look at housing finance in Africa: The anatomy of pension asset-backed housing financing. *International Journal of Housing Markets and Analysis*, *9*(1), 20-46.

Duong, N. T., and Huong, T. T. T. (2016). The Analysis of Major Credit Risk Factors-The Case of the Vietnamese Commercial Banks. *International Journal of Financial Research*, 8(1), 33.

El-Gamal, M. A. (2006). *Islamic finance: Law, economics, and practice*. Cambridge University Press.

Fauziah, Taib, M., Ramayah, T., and Abdul Razak, D. (2008*).* Factors influencing intention to use diminishing partnership housing financing. *International Journal of Islamic and Middle Eastern Finance and Management*, 1(3), 235-248.

Gezu, G. (2014). *Determinants of nonperforming loans: empirical study in case of commercial banks in Ethiopia* (Doctoral dissertation).

Haddadi, D., and Hassan, M. (2016). The Factors Affecting the Credit Risk in the Iranian Banks: The Case Study of Mellat Banks. *Browser Download This Paper*.

Hair, J. F., Anderson, R. E., Tatham, R. L., dan Black, W. C. (2010). *Multivariate data analysis* seventh edition. New York: Prentice Hall International Inc.

Hamid, A., and Masood, O. (2011). Selection criteria for Islamic housing financing: a case study of Pakistan. *Qualitative Research in Financial Markets*, 3(2), 117-130.

Haq, M. (2010). Factors determining bank risks: A European perspective. In *2010 AFAANZ Conference* (pp. 1-52). AFAANZ.

Haron, S. (2005). *Sistem kewangan dan perbankan Islam*, KLBS, Kuala Lumpur.

Haron. S. and Shanmugam, B. (2001), *Islamic Banking System,* Pelanduk, Subang Jaya.

Housing watch (2018, April 13). Retrieved from http://www.housingwatch.my/01_housingfin_01.html

Ibn Manzur, (1955). *Lisan al- 'Arab*, Jil. 14, Kaherah: Dar al-Ma'arif.

Iqbal, Z. and Mirakhor, A. (2007), A*n Introduction to Islamic Finance: Theory and Practice*, John Wiley and Sons, Singapore.

Jabir, T. T., and Terye, N. D. (2016). Credit Risk Analysis of Ethiopian Banks: A Fixed Effect Panel Data Model. *British Journal of Applied Science and Technology*, 15(1), 1.

Khan, I., and Ahmad, A. (2017). Assessing Banks Internal Factors as Determinants of Non-Performing Loans Evidence from Pakistani Commercial Banks. *Journal of Managerial Sciences, 11(1)*

Khir, K., Gupta, L. and Shanmugam, B. (2007). *Islamic Banking: A Practical Perspective,* Pearson Longman, Petaling Jaya.

Lenka, S. K., and Sharma, P. (2015). FDI as a Main Determinant of Economic Growth: A Panel Data Analysis. *Annual Research Journal of Symbiosis Centre for Management Studies*, 1, Januray 2013-January 2014, 84, 9.

Manab, N. A., Theng, N. Y., and Md-Rus, R. (2015). The Determinants of Credit Risk in Malaysia. *Procedia-Social and Behavioral Sciences*, 172, 301-308.

Messai, A. S., and Jouini, F. (2013*).* Micro and macro determinants of non-performing loans. *International journal of economics and financial issues*, 3(4), 852.

Mohd Isa, M. Y., Voon Choong, Y., Yong Gun Fie, D., and Abdul Rashid, M. Z. H. (2018). Determinants of loan loss provisions of commercial banks in Malaysia. *Journal of Financial Reporting and Accounting*, (just-accepted), 00-00.

Mohd Yusof, R., Bahlous, M., and Haniffa, R. (2016). Rental rate as an alternative pricing for Islamic housing financing: an empirical investigation on the UK Market. *International Journal of Housing Markets and Analysis*, 9(4), 601-626.

Muratbek, D. (2017). *Determinants of Non-Performing Loans in Kazakhstan* (Doctoral dissertation, Nazarbayev University, School of Humanities and Social Sciences.)

Mwaura, I. G. (2013). *The Determinants of Credit Risk in Commercial Banks in Kenya*. University of Nairobi.

Navamoney, P. B. (2009) *Financial crisis: Credit risks and macroeconomics dynamics.* Discussion Paper. Universiti Utara Malaysia. (Unpublished)

Noorul Hafizah, H. (2007). *Factor Affecting Housing Loan/House Financing Pricing; Comparative Evaluation Between Conventional Bank and Islamic Bank* (Doctoral dissertation, Universiti Utara Malaysia).

Radivojevic, N., and Jovovic, J. (2017). Examining of Determinants of Non-Performing Loans. *Prague Economic Papers*, 26(3).

Safari, M. (2014) Factors Affecting Credit Risks of Malaysian Financial Institutions Post 2008-2009 Financial Crisis. *International Journal of Managerial Studies and Research*

Scholtens, B., and Van Wensveen, D. (2000). A critique on the theory of financial intermediation. *Journal of Banking and Finance*, 24(8), 1243-1251.

Schumpeter, J.A. (1911) *The Theory of Economic Development*. Harvard University Press, Cambridge.

Seaw, Y. C., Onn, Y. W., Lee, S. Y., San, F. Y. T., and Hai, R. Q. (2015). *The economic and bank specific factor on the bank credit risk: Evidence from Malaysia* (Doctoral dissertation, UTAR).

Sunan at Tirmidzi karya al Tirmidzi (200-279 H);

Tanasković, S., and Jandrić, M. (2015). Macroeconomic and institutional determinants of non-performing loans. *Journal of Central Banking Theory and Practice*, 4(1), 47-62.

Tehulu, T. A., and Olana, D. R. (2014). Bank-specific determinants of credit risk: Empirical evidence from Ethiopian banks. *Research journal of finance and accounting*, 5(7), 80-85.

Thiagarajan, S. (2013). Determinants of Credit Risk in the Commercial Banking Sector of Belize. *Research Journal of Social Science and Management*, 03, 84-90.

Tona, E. (2017). *Determinants of Financial Risks of Private Commercial Banks in Ethiopia* (Doctoral dissertation, Addis Ababa University Addis Ababa, Ethiopia).

Tse, R.Y.C. (1997), ‘‘Optimal loan size and mortgage rationing’’, *Journal of Property Finance*, Vol. 8 No. 3, pp. 195-206.

Tsumake, G. K. (2016). *What are the determinants of non-performing loans in Botswana* (Doctoral dissertation, University of Cape Town)

Yusof, R. M., and Usman, F. H. (2015). Islamic housing financing and the real sectors in Malaysia: an ARDL bound testing approach to cointegration. *International Journal of Economics, Management and Accounting*, 23(1), 79.

Wooldridge, J.M. (2003), "*Cluster-Sample Methods in Applied Econometrics*," American Economic Review 93, 133-138

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage Learning.

APPENDICES

LLP All Bank Random Effect

Random-effects GLS regression — Number of obs = 269
Group variable: code — Number of groups = 24

R-sq: — Obs per group:
within = 0.0182 — min = 7
between = 0.3930 — avg = 11.2
overall = 0.0596 — max = 15

Wald chi2(6) = 16.61
corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.0108

llpta9	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
texpti	.0019552	.001746	1.12	0.263	-.0014669	.0053772
tlta	.0018939	.0011083	1.71	0.087	-.0002783	.0040661
inctl	.0668092	.0340085	1.96	0.049	.0001537	.1334647
lpro	-.0010275	.0002985	-3.44	0.001	-.0016125	-.0004424
gdp	2.61e-06	.0003223	0.01	0.994	-.0006291	.0006343
cpi	.0001208	.0003703	0.33	0.744	-.0006049	.0008466
_cons	.0142727	.0052518	2.72	0.007	.0039794	.0245661
sigma_u	0					
sigma_e	.00662478					
rho	0	(fraction of variance due to u_i)				

LLP All Bank Fixed Effect

Fixed-effects (within) regression — Number of obs = 269
Group variable: code — Number of groups = 24

R-sq: — Obs per group:
within = 0.0810 — min = 7
between = 0.0387 — avg = 11.2
overall = 0.0251 — max = 15

F(6,239) = 3.51
corr(u_i, Xb) = -0.7549 — Prob > F = 0.0024

llpta9	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
texpti	-.0052829	.002445	-2.16	0.032	-.0100994	-.0004664
tlta	.0006272	.0011899	0.53	0.599	-.0017168	.0029712
inctl	-.0502454	.0494833	-1.02	0.311	-.1477246	.0472338
lpro	-.0027665	.0006782	-4.08	0.000	-.0041025	-.0014305
gdp	.0000235	.0003152	0.07	0.941	-.0005973	.0006444
cpi	-.0000102	.0003637	-0.03	0.978	-.0007266	.0007063
_cons	.0513139	.0117678	4.36	0.000	.028132	.0744958
sigma_u	.00444852					
sigma_e	.00662478					
rho	.31077656	(fraction of variance due to u_i)				

F test that all u_i=0: F(23, 239) = 1.82 — Prob > F = 0.0145

LLP Commercial Bank Random Effect

Random-effects GLS regression		**Number of obs**	**= 140**
Group variable: code		**Number of groups**	**= 12**
R-sq:		**Obs per group:**	
within = 0.2256		**min =**	**7**
between = 0.2369		**avg =**	**11.7**
overall = 0.1635		**max =**	**15**
		Wald chi2(6)	**= 26.75**
corr(u_i, X) = 0 (assumed)		**Prob > chi2**	**= 0.0002**

llpta9	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
texpti	-.0013721	.001593	-0.86	0.389	-.0044944	.0017502
tlta	.0002393	.0004988	0.48	0.631	-.0007383	.0012169
inctl	-.0551658	.0334218	-1.65	0.099	-.1206712	.0103396
lpro	.0011521	.0003272	3.52	0.000	.0005109	.0017933
gdp	.0000147	.0001808	0.08	0.935	-.0003396	.000369
cpi	-.0000585	.0002066	-0.28	0.777	-.0004634	.0003465
_cons	-.0186507	.0066723	-2.80	0.005	-.0317281	-.0055733
sigma_u	.00037219					
sigma_e	.00265713					
rho	.019243	(fraction of variance due to u_i)				

LLP Commercial Bank Fixed Effect

Fixed-effects (within) regression		**Number of obs**	**= 140**
Group variable: code		**Number of groups**	**= 12**
R-sq:		**Obs per group:**	
within = 0.2430		**min =**	**7**
between = 0.2249		**avg =**	**11.7**
overall = 0.1534		**max =**	**15**
		F(6,122)	**= 6.53**
corr(u_i, Xb) = -0.7253		**Prob > F**	**= 0.0000**

llpta9	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
texpti	-.0015877	.0034771	-0.46	0.649	-.008471	.0052956
tlta	.0003978	.0004933	0.81	0.422	-.0005788	.0013744
inctl	-.0380264	.0406563	-0.94	0.351	-.1185097	.0424569
lpro	.0026087	.0005771	4.52	0.000	.0014662	.0037512
gdp	.0000345	.0001741	0.20	0.843	-.0003101	.0003791
cpi	.0000107	.0001989	0.05	0.957	-.0003829	.0004044
_cons	-.0441481	.0117462	-3.76	0.000	-.067401	-.0208953
sigma_u	.00182593					
sigma_e	.00265713					
rho	.32075221	(fraction of variance due to u_i)				

F test that all u_i=0: F(11, 122) = 2.40 **Prob > F = 0.0100**

LLP Islam Bank Random Effect

Random-effects GLS regression — Number of obs = 129
Group variable: code — Number of groups = 12

R-sq: — Obs per group:
within = 0.0836 — min = 7
between = 0.2828 — avg = 10.8
overall = 0.1016 — max = 12

Wald chi2(6) = 13.79
corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.0320

llpta9	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
texpti	.0037971	.0028324	1.34	0.180	-.0017543	.0093484
tlta	.0142888	.0041987	3.40	0.001	.0060595	.022518
inctl	.1163562	.0558277	2.08	0.037	.006936	.2257765
lpro	-.0020857	.0008309	-2.51	0.012	-.0037142	-.0004573
gdp	.0000239	.0006412	0.04	0.970	-.0012328	.0012806
cpi	-.0000303	.0007561	-0.04	0.968	-.0015123	.0014517
_cons	.0186101	.0116305	1.60	0.110	-.0041852	.0414055
sigma_u	0					
sigma_e	.00892422					
rho	0	(fraction of variance due to u_i)				

LLP Islamic Bank Fixed Effect

Fixed-effects (within) regression — Number of obs = 129
Group variable: code — Number of groups = 12

R-sq: — Obs per group:
within = 0.1398 — min = 7
between = 0.0466 — avg = 10.8
overall = 0.0496 — max = 12

F(6,111) = 3.01
corr(u_i, Xb) = -0.4796 — Prob > F = 0.0093

llpta9	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
texpti	-.0033566	.00361	-0.93	0.354	-.0105102	.0037969
tlta	.0197818	.0067656	2.92	0.004	.0063754	.0331882
inctl	.0086489	.0936856	0.09	0.927	-.1769953	.1942931
lpro	-.0020691	.0011038	-1.87	0.063	-.0042564	.0001182
gdp	.0002942	.0006489	0.45	0.651	-.0009916	.00158
cpi	-.0001948	.000759	-0.26	0.798	-.0016987	.0013092
_cons	.0209728	.0194801	1.08	0.284	-.0176283	.0595739
sigma_u	.00468545					
sigma_e	.00892422					
rho	.21608735	(fraction of variance due to u_i)				

F test that all u_i=0: F(11, 111) = 1.75 — Prob > F = 0.0722

NPL All Bank Random Effect

Random-effects GLS regression — **Number of obs = 269**
Group variable: code — **Number of groups = 24**

R-sq: — **Obs per group:**
within = 0.1139 — **min = 7**
between = 0.0303 — **avg = 11.2**
overall = 0.0588 — **max = 15**

Wald chi2(6) = 22.60
corr(u_i, X) = 0 (assumed) — **Prob > chi2 = 0.0009**

npl	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
texpti	1.252568	.7094229	1.77	0.077	-.1378751	2.643011
tlta	.2541111	.390104	0.65	0.515	-.5104788	1.018701
inctl	-4.690444	14.09792	-0.33	0.739	-32.32186	22.94097
lpro	-.6213077	.1473689	-4.22	0.000	-.9101453	-.33247
gdp	.1165245	.1065382	1.09	0.274	-.0922866	.3253355
cpi	.0338219	.1225399	0.28	0.783	-.2063519	.2739957
_cons	11.1069	2.5654	4.33	0.000	6.078811	16.135
sigma_u	.97437183					
sigma_e	2.1665932					
rho	.16822822	(fraction of variance due to u_i)				

NPL All Bank Fixed Effect

Fixed-effects (within) regression — **Number of obs = 269**
Group variable: code — **Number of groups = 24**

R-sq: — **Obs per group:**
within = 0.1474 — **min = 7**
between = 0.0050 — **avg = 11.2**
overall = 0.0328 — **max = 15**

F(6,239) = 6.88
corr(u_i, Xb) = -0.7245 — **Prob > F = 0.0000**

npl	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
texpti	.0756033	.7996235	0.09	0.925	-1.499607	1.650813
tlta	.1025862	.3891499	0.26	0.792	-.6640156	.869188
inctl	-17.36765	16.18323	-1.07	0.284	-49.24763	14.51233
lpro	-1.365424	.2218056	-6.16	0.000	-1.802367	-.9284801
gdp	.1042853	.103072	1.01	0.313	-.0987604	.3073309
cpi	-.0224955	.1189477	-0.19	0.850	-.2568153	.2118243
_cons	24.28813	3.848593	6.31	0.000	16.70663	31.86962
sigma_u	2.1477076					
sigma_e	2.1665932					
rho	.49562264	(fraction of variance due to u_i)				

F test that all u_i=0: F(23, 239) = 4.55 — **Prob > F = 0.0000**

NPL Commercial Bank Random Effect

Random-effects GLS regression		**Number of obs**	**= 140**
Group variable: code		**Number of groups**	**= 12**
R-sq:		**Obs per group:**	
within = 0.4405		**min =**	**7**
between = 0.4526		**avg =**	**11.7**
overall = 0.3683		**max =**	**15**
		Wald chi2(6)	**= 80.52**
corr(u_i, X) = 0 (assumed)		**Prob > chi2**	**= 0.0000**

npl	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
texpti	-2.586786	1.123417	-2.30	0.021	-4.788644	-.3849285
tlta	.1416472	.290611	0.49	0.626	-.42794	.7112343
inctl	-17.64196	20.63619	-0.85	0.393	-58.08816	22.80423
lpro	-1.820917	.225729	-8.07	0.000	-2.263338	-1.378497
gdp	.1995253	.103994	1.92	0.055	-.0042991	.4033498
cpi	.0400695	.1189597	0.34	0.736	-.1930872	.2732261
_cons	33.82561	4.564396	7.41	0.000	24.87956	42.77166
sigma_u	.46156415					
sigma_e	1.4504073					
rho	.09195811	(fraction of variance due to u_i)				

NPL commercial Bank Fixed Effect

Fixed-effects (within) regression		**Number of obs**	**= 140**
Group variable: code		**Number of groups**	**= 12**
R-sq:		**Obs per group:**	
within = 0.4515		**min =**	**7**
between = 0.4256		**avg =**	**11.7**
overall = 0.3580		**max =**	**15**
		F(6,122)	**= 16.74**
corr(u_i, Xb) = -0.6881		**Prob > F**	**= 0.0000**

npl	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
texpti	-3.045671	1.898001	-1.60	0.111	-6.802955	.7116122
tlta	.1412449	.2692904	0.52	0.601	-.3918423	.6743321
inctl	-20.40048	22.19248	-0.92	0.360	-64.33272	23.53176
lpro	-2.720205	.3150287	-8.63	0.000	-3.343836	-2.096575
gdp	.1871983	.0950214	1.97	0.051	-.000906	.3753026
cpi	-.0136135	.1085494	-0.13	0.900	-.2284979	.2012709
_cons	49.40972	6.41175	7.71	0.000	36.71702	62.10242
sigma_u	1.4840087					
sigma_e	1.4504073					
rho	.51144929	(fraction of variance due to u_i)				

F test that all u_i=0: F(11, 122) = 6.14 **Prob > F = 0.0000**

NPL Islam Bank Random Effect

Random-effects GLS regression		**Number of obs**	**= 129**
Group variable: code		**Number of groups**	**= 12**
R-sq:		**Obs per group:**	
within = 0.0190		**min =**	**7**
between = 0.4385		**avg =**	**10.8**
overall = 0.0858		**max =**	**12**
		Wald chi2(6)	**= 10.68**
corr(u_i, X) = 0 (assumed)		**Prob > chi2**	**= 0.0989**

npl	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
texpti	2.634616	.8939121	2.95	0.003	.8825807	4.386652
tlta	.7201402	1.325929	0.54	0.587	-1.878632	3.318913
inctl	-7.402329	17.75743	-0.42	0.677	-42.20626	27.4016
lpro	-.308037	.2612018	-1.18	0.238	-.8199831	.2039092
gdp	.0233022	.1996976	0.12	0.907	-.3680979	.4147023
cpi	-.0287599	.2354753	-0.12	0.903	-.490283	.4327633
_cons	5.968335	3.677447	1.62	0.105	-1.239329	13.176
sigma_u	.22411568					
sigma_e	2.65149					
rho	.0070937	(fraction of variance due to u_i)				

NPL Islamic Bank Fixed Effect

Fixed-effects (within) regression		**Number of obs**	**= 129**
Group variable: code		**Number of groups**	**= 12**
R-sq:		**Obs per group:**	
within = 0.0796		**min =**	**7**
between = 0.0214		**avg =**	**10.8**
overall = 0.0099		**max =**	**12**
		F(6,111)	**= 1.60**
corr(u_i, Xb) = -0.4720		**Prob > F**	**= 0.1539**

npl	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
texpti	-.0111033	1.072587	-0.01	0.992	-2.136505	2.114299
tlta	.2449327	2.010124	0.12	0.903	-3.738263	4.228128
inctl	-38.26581	27.83507	-1.37	0.172	-93.42286	16.89124
lpro	-.8358015	.3279582	-2.55	0.012	-1.485673	-.1859304
gdp	.0678507	.1927906	0.35	0.726	-.3141767	.4498781
cpi	-.1103131	.2254992	-0.49	0.626	-.5571548	.3365285
_cons	16.37371	5.787767	2.83	0.006	4.904861	27.84255
sigma_u	1.8028208					
sigma_e	2.65149					
rho	.31614641	(fraction of variance due to u_i)				

F test that all u_i=0: F(11, 111) = 3.04 **Prob > F = 0.0014**